Dr. Grogg Chemie AG
Gümligentalstrasse 83
CH-3066 Stettlen-Deisswil

Telefon 031 932 11 66
info@grogg-chemie.ch
www.grogg-chemie.ch

COVER SHEET FOR THE SAFETY DATA SHEET

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Item number: G970

Trade name: Hydrogen peroxide 30% high purity

Supplier:
Dr. Grogg Chemie AG
Gümligentalstrasse 83
CH-3066 Stettlen-Deisswil
info@grogg-chemie.ch
Tel. +41 31 932 11 66

Emergency number:
24-hour emergency number: 145
Help with poisoning. Tox Info Suisse provides free medical advice round the clock in cases of poisoning or suspected poisoning.

Tox Info Suisse
Freiestrasse 16
8032 Zürich
Tel. +41 (0) 44 251 51 51
www.toxinfo.ch

Sicherheitsdatenblatt/ Material Safety Data Sheet/ Fiche de Données de Sécurité / Fiche Signalétique

WASSERSTOFFPEROXID 30% HOCHREIN/ HYDROGEN PEROXIDE 30% HIGH PURITY/ PEROXYDE D'HYDROGENE 30% HAUTE PURETE

1. Hersteller/Lieferant
Manufacturer/Supplier
Producteur/Fournisseur

Brenntag Schweizerhall AG
Elsässerstrasse 231
CH-4002 Basel

Montag – Freitag / Monday – Friday / Lundi – Vendredi
8:00 – 12:00 H 13:00H – 17:00H

Telefon: +41 (0)58 344 80 00
Fax: +41 (0) 58 344 82 08
Email-Adresse : doku@brenntag.ch

Notrufnummer, Schweizerisches Toxikologisches Informationszentrum
Emergency telephone number, Swiss Toxicological Information Centre
Numéro d'appel d'urgence, Centre Suisse d'Information Toxicologique

Tel. +41 (0) 44251 51 51

Nationale Notrufnummer
National Emergency Telephone Number
Numéro National d'Appel en cas d'Urgence

Tel. 145

8. Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen
Exposure controls/personal protection
Contrôles de l'exposition/ protection individuelle

Inhaltsstoff:	Wasserstoffperoxid in Lösung	CAS-Nr.:	7722-84-1

Arbeitsplatzgrenzwerte

SUVA
Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden.

SUVA, Zeitgewichteter Durchschnitt
1 ppm, 1,4 mg/m3

SUVA, Kurzzeitiger Expositionsgrenzwert (STEL):
2 ppm, 2,8 mg/m3

Component:	hydrogen peroxide solution	CAS-No.:	7722-84-1

Occupational Exposure Limits

SUVA
If in compliance with the OEL and BEL values, then there should be no risk of reproductive damage.

SUVA, Time Weighted Average (TWA):
1 ppm, 1,4 mg/m3

SUVA, Short Term Exposure Limit (STEL):
2 ppm, 2,8 mg/m3

Composant:	peroxyde d'hydrogène en solution	No.-CAS:	7722-84-1

Limites d'exposition professionnelle

SUVA
Aucun risque pour l'embryon si les valeurs de AGW et de BGW sont respectées.

SUVA, Limite d'exposition pondérée dans le temps (VME):
1 ppm, 1,4 mg/m3

SUVA, Seuil limite d'exposition à court terme (STEL)
2 ppm, 2,8 mg/m3

13. Verfahren der Abfallbehandlung
Waste treatment methods
Méthodes de traitement des déchets

Für dieses Produkt kann keine Abfallschlüsselnummer gemäss Verordnung über den Verkehr mit Abfällen (VeVA) festgelegt werden, da erst der Verwendungszweck durch den Verbraucher eine Zuordnung erlaubt. Die Abfallschlüsselnummer ist in Absprache mit dem regionalen Entsorger festzulegen, wie z.B. mit:

Brenntag Schweizerhall AG
Lohnmatte 1
4573 Lohn-Ammannsegg
Switzerland
Phone: +41 58 344 84 00
infolohn@brenntag.ch

No waste code can be defined for this product in accordance with the Ordinance on the Movement of Waste (VeVA), as the intended use dictates the assignment. The waste code is established in consultation with a regional waste disposer, such as:

Brenntag Schweizerhall AG
Lohnmatte 1
4573 Lohn-Ammannsegg
Switzerland
Phone: +41 58 344 84 00
infolohn@brenntag.ch

Un numéro de code déchet selon l'ordonnance sur les mouvements de déchets (OMoD) ne peut être défini pour ce produit. Cette attribution est dictée par l'utilisation prévue du produit par l'utilisateur final. Le code déchet est établi en consultation avec l'entreprise d'élimination, par exemple:

Brenntag Schweizerhall SA
Lohnmatte 1
4573 Lohn-Ammannsegg
Suisse
Téléphone : +41 58 344 84 00
infolohn@brenntag.ch

15. Rechtsvorschriften
Regulatory information
Informations relatives à la réglementation

Mengenschwelle nach StFV : 2.000 kg
Threshold quantity MAO
Seuil quantitatif OPAM

ChemRRV

ORRChem
ORRChim

Anhang	:	Anhang 1.11: Gefährliche flüssige Stoffe
Annex		Annex 1.11: Hazardous liquids
Annexe		Annexe 1.11: Substances liquides dangereuses

Sonstige Vorschriften (SDB)
Other regulations (SDS)
Autres prescriptions (FDS)

: Artikel 4 Absatz 1bis, Artikel 4 Absatz 4 der Jugendarbeitsschutzverordnung (SR 822.115); Artikel 5 und 6 der Verordnung des WBF über gefährliche Arbeiten für Jugendliche (SR 822.115.2): Jugendliche in der beruflichen Grundbildung dürfen nur mit diesem Produkt (diesem Stoff / dieser Zubereitung) arbeiten, wenn dies in der jeweiligen Bildungsverordnung zur Erreichung ihres Ausbildungszieles vorgesehen ist, die Voraussetzungen des Bildungsplans erfüllt sind und die geltenden Altersbeschränkungen eingehalten werden. Jugendliche, die keine berufliche Grundbildung absolvieren, dürfen nicht mit diesem Produkt (diesem Stoff / dieser Zubereitung) arbeiten. Jugendliche mit einem eidgenössischen Berufsattest (EBA) oder einem eidgenössischen Fähigkeitszeugnis (EFZ) dürfen im Rahmen des erlernten Berufs gefährliche Arbeiten mit diesem Produkt (diesem Stoff / dieser Zubereitung) durchführen. Als Jugendliche gelten Arbeitnehmer beider Geschlechter bis zum vollendeten 18. Altersjahr.

Article 4 paragraph 1bis, Article 4 paragraph 4 of the Youth Employment Protection Ordinance (SR 822.115); articles 5 and 6 of the EAER Ordinance on Hazardous Work for Young People (SR 822.115.2): Young people undergoing basic vocational training may only work with this product (substance/preparation) if the relevant training ordinance makes provision for them to do so with a view to enabling them to achieve their training objectives and if the preconditions for the training plan have been met and the applicable age restrictions have been complied with. Young people who are not undergoing any basic vocational training are not permitted to work with this product (substance/preparation). Young people with a Federal vocational education and training (VET) Certificate or a Federal VET Diploma may carry out hazardous work with this product

(substance/preparation) within the profession they have learned. Male and female employees who are under 18 years old are classed as young people.

Article 4 alinéa 1bis, article 4 alinéa 4 Ordonnance sur la protection des jeunes travailleurs (OLT 5, RS 822.115) ; articles 5 et 6 de l'ordonnance du DEFR sur les travaux dangereux pour les jeunes (822.115.2): Les jeunes en formation professionnelle initiale ne peuvent travailler avec ce produit (cette substance / cette préparation) que si cela est prévu dans l'ordonnance de formation professionnelle pour atteindre les buts de formation et si les conditions du plan de formation et les limites d'âge applicables soient respectées. Les jeunes qu i ne suivent pas de formation professionnelle initiale ne peuvent pas travailler avec ce produit (cette substance / cette préparation). Les jeunes qui disposent d'un certificat fédéral de capacité (CFC) ou d'une attestation fédérale de formation professionnelle (AFP) peuvent, dans le cadre du métier appris, exécuter les travaux dangereux nécessitant l'emploi de ce produit (cette substance / cette préparation). Sont réputés jeunes gens les travailleurs des deux sexes âgés de moins de 18 ans.

Das Produkt gehört zur Chemikaliengruppe 2 nach Schweizer Chemikalienverordnung (ChemV 813.11).

The product belongs to group 2 according to the Swiss Chemicals Ordinance (ChemO 813.11).

Le produit appartient au groupe chimique 2 selon l'Ordonnance sur les produits chimique suisse (OChim 813.11).

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II as amended by Commission Regulation (EU) 2020/878

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name:
PERSYNT® 300 LC

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Oxidizing agents.
for professional users
For detailed exposure scenarios see Annexes.
This product is regulated by Regulation (EU) 2019/1148 (Marketing and Use of Explosives Precursors).

Uses advised against: Not determined.

1.3 Details of the supplier of the safety data sheet

Company Name	:	Evonik Operations GmbH Opernplatz 1 45128 Essen Germany
Telephone	:	+49 6181 59 4787
E-mail	:	sds-hu@evonik.com

Emergency telephone number:

24 Hour Emergency Telephone	:	+49 2365 49 2232

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

The product has been classified according to the legislation in force.

Classification according to Regulation (EC) No 1272/2008 as amended.

Health Hazards

Acute toxicity (Oral)	Category 4	H302: Harmful if swallowed.
Acute toxicity (Inhalation - dust and mist)	Category 4	H332: Harmful if inhaled.
Serious eye damage	Category 1	H318: Causes serious eye damage.

Environmental Hazards

Acute hazards to the aquatic environment	Category 1	H400: Very toxic to aquatic life.
Chronic hazards to the aquatic environment	Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label Elements



Signal Words: Danger

Hazard Statement(s):
H302+H332: Harmful if swallowed or if inhaled.
H318: Causes serious eye damage.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention:
P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
P273: Avoid release to the environment.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER or doctor/ physician.

Disposal:
P501: Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Hazardous ingredients which must be listed on the label:
Hydrogen peroxide

2.3 Other hazards

Product is a(n) oxidizing agent. Release of oxygen may support combustion. Danger of decomposition under influence of heat. Risk of decomposition in contact with incompatible substances, impurities, metals, alkalis, reducing agents. Risk of explosion with organic solvents.

PBT/vPvB data
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Endocrine disrupting properties-Toxicity
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Endocrine disrupting properties-Ecotoxicity
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

General information: aqueous solution, clear

Chemical name	Concentration	CAS-No.	EC No.	REACH Registration No.	M-Factor:	Notes
Hydrogen peroxide	30%	7722-84-1	231-765-0	01-2119485845-22	Aquatic Toxicity (Acute): 1	#

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
# This substance has workplace exposure limit(s).
This substance is listed as SVHC.

Classification

Chemical name	Classification	Notes
Hydrogen peroxide	Classification: Ox. Liq.: 1: H271; Acute Tox.: 4: H302; Acute Tox.: 4: H332; Acute Tox.: 4: H332; Skin Corr.: 1A: H314; Eye Dam.: 1: H318; STOT SE: 3: H335; Aquatic Acute: 1: H400; Aquatic Chronic: 3: H412 Supplemental label information: None known. Specific concentration limit: Specific target organ toxicity - single exposure Category 3, H335, >= 35 %; Serious eye damage Category 1, H318, 8 - < 50 %; Skin irritation Category 2, H315, 35 - < 50 %; Oxidizing liquids Category 2, H272, 50 - < 70 %; Oxidizing liquids Category 1, H271, >= 70 %; Skin corrosion Sub-category 1B, H314, 50 - < 70 %; Serious eye irritation Category 2, H319, 5 - < 8 %; Skin corrosion Sub-category 1A, H314, >= 70 %; Chronic hazards to the aquatic environment Category 3, H412, >= 63 %; Acute toxicity, oral: LD 50: 431 mg/kg Acute toxicity, inhalation: LC 50: 1,5 mg/l Dust and mist Acute toxicity, dermal: LD 50: 9.200 mg/kg	Note B

CLP: Regulation No. 1272/2008.
The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:	Pay attention to self-protection. Move out of dangerous area. Do not leave the victim unattended. Keep patient warm and at rest. Place patients who are unconscious but breathing in the stabilized lateral position.
Inhalation:	Potential for exposure by inhalation if aerosols or mists are generated. Bring affected person outside and ensure that he/she is comfortable. Get medical attention if any discomfort continues. With labored breathing: Provide with oxygen. Consult a doctor immediately. If the casualty is not breathing: Perform mouth-to-mouth resuscitation, notify emergency physician immediately.
Skin Contact:	Remove contaminated clothing. Flush skin thoroughly with water. If skin irritation or an allergic skin reaction develops, get medical attention.
Eye contact:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
Ingestion:	Do NOT induce vomiting. Rinse mouth. Immediately give large quantities of water to drink. Do not administer activated charcoal. Get medical attention immediately.
Personal Protection for First-aid Responders:	First Aid responders should pay attention to self-protection and use the recommended protective clothing

4.2 Most important symptoms and effects, both acute and delayed

Symptoms:	Symptoms such as drowsiness, irritation of the esophagus, burning sensation behind the breast bone (retrosternal burning, heartburn), foaming at the mouth, nausea, vomiting and diarrhea are possible. Causes serious eye damage. Eyes: Depending on the intensity of exposure irritating/corrosive liquids cause injuries, destruction and detachment of connective tissue and corneal epithelium, corneal opacity, edemas and ulceration to a variable degree. Danger! Possible loss of eyesight! Signs of irritation affecting the respiratory tract such as coughing, burning sensations behind the breast bone (sternum), watering eyes, burning sensations of eyes or nose, necrosis formation in upper respiratory tract as well as shortness of breath (dyspnea) are possible. May cause slight irritant effects on skin. The formation of white spots/patches on skin exposed is possible. Aspiration hazard due to foam formation. There is a risk of pulmonary edema! Release of oxygen with potential gas embolism. After accidental absorption in the body, the pathology and clinical findings are dependent on the kinetics of the noxious substance (quantity of absorbed substance, the absorption time, and the effectiveness of early elimination measures (first aid)/ excretion - metabolism). Health injuries may be delayed.
Hazards:	Harmful by inhalation. Causes serious eye damage.

4.3 Indication of immediate medical attention and special treatment needed

Treatment:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:	Water spray.
Unsuitable extinguishing media:	High volume water jet. Organic compounds.

5.2 Special hazards arising from the substance or mixture:

The product itself does not burn. Involved in fire, it may decompose yielding oxygen. Release of oxygen may support combustion. Risk of overpressure and burst due to decomposition in confined spaces and pipes. Contact with inflammable and organic substances might cause fire. During fire, gases hazardous to health may be formed.

5.3 Advice for firefighters

Special fire fighting procedures:	Evacuate personnel to safe areas. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. In case of fire, remove the endangered containers and bring to a safe place, if this can be done safely. or In the case of fire, cool the containers that are at risk with water or dilute with water (flooding). Ensure there are sufficient retaining facilities for water used to extinguish fire. Water used to extinguish fire should not enter drainage systems, soil or stretches of water. Sewer coverage. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters:	In the case of fire, wear respiratory protective equipment independent of surrounding air and chemical protective suit.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:	-
6.1.1 For non-emergency personnel:	In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. Evacuate area and do not approach spilled product. Sewer coverage. Make safe or remove all sources of ignition.
6.1.2 For emergency responders:	In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. Evacuate personnel to safe areas. Use personal protective equipment. Make safe or remove all sources of ignition. Isolate defective containers immediately, if possible and safe to do. Shut off leak, if possible and safe to do. Do not use an organic material (e.g. wood) to stop a leak. Provide ventilation and confine spill. Do not allow runoff to sewer. Place defective containers in waste receptacle (waste packaging receptacle) made of plastic (not metal). Do not seal defective containers or waste receptacles airtight (danger of bursting due to product decomposition). Never return spilled product into its original container for re-use. (Risk of decomposition.).
6.2 Environmental Precautions:	Observe regulations on prevention of water pollution (collect, dam up, cover up). Do not allow substance to enter soil, bodies of water or sewage canals. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up:

In case of larger quantities: Sewer coverage. Collect product in suitable containers (e. g. made of plastic) using appropriate equipment (e. g. liquid pump). Dispose of absorbed material in accordance with the regulations. Rinse away residue with plenty of water Ventilate room. With small amounts: Sewer coverage. Dam with sand or earth. Absorb with liquid-binding material, e. g.: diatomaceous earth or universal binder. Do not use: textiles, saw dust, combustible substances. Dispose of absorbed material in accordance with the regulations. Rinse away residue with plenty of water Ventilate room.

6.4 Reference to other sections:

For personal protection see section 8. For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures:

Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist.Ensure suitable suction/aeration at the work place and with operational machinery.Suitable measuring processes are: Hydrogen peroxide (H2O2) OSHA method ID 006 OSHA method VI-6

Local/Total ventilation:

No data available.

Safe handling advice:

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes, skin, and clothing. Do not breathe in vapours, aerosols, sprays. Ensure there is good room ventilation. Use personal protective equipment. Observe ergonomic requirements when selecting personal safety equipment. Check the proper condition of personal safety equipment before use. Immediately rinse contaminated or saturated clothing with water. Immediately remove contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. No eating, drinking, smoking, or snuffing tobacco at work. Wash face and/or hands before break and end of work. Use barrier cream regularly. Ensure stringent workplace cleanliness Avoid impurities and heat effect. Keep away from incompatible substances. Decant only the product quantities needed for current work. Do not empty container by means of pressure. Avoid splashing. Close containers immediately after use and return them to their proper place of storage. Avoid residues of the product on the containers. Never return spilled product into its original container for re-use. (Risk of decomposition.). Carry out fire/open flame operations with written authorization only. Carefully flush clear and render inert before working on containers and lines. Use non-sparking tools. Provide for installation of emergency shower and eye bath. Set up safety and operation procedures.The personal protective equipment used must meet the requirements of Regulation (EU)

2016/425 and amendments (CE certification). It should be defined in the work place in the form of a risk analysis according to Regulation (EU) 2016/425 and amendments.

Contact avoidance measures: No data available.

7.2 Conditions for safe storage, including any incompatibilities

Safe storage conditions: Store in cool, dry place. Keep at temperature not exceeding 40°C. Avoid sun rays, heat, heat effect. Store in tightly closed original container in a well-ventilated place. Jointless smooth concrete floor. Only use containers which are specially permitted for: hydrogen peroxide Use adequate venting devices on all packages, containers and tanks and check correct operation periodically. Do not confine product in unvented vessels or between closed valves. Risk of overpressure and burst due to decomposition in confined spaces and pipes. Packages, containers and tanks should regularly be checked by visual observation for any sign of abnormality, e.g. corrosion, exert pressure (bulging), temperature increase etc. Transport and store container in upright position only. Store containers in such a manner that liquids released are collected in a catch vessel in case of leaks. Observe shelf-life of the product. Do not store together with: alkalis, reductants, metallic salts (risk of decomposition). Do not store together with: inflammable substances (risk of fire). Do not store together with: organic solvents (risk of explosion). Keep away from incompatible substances. Keep away from sources of ignition - No smoking. Take precautionary measures against static charges. Measures for storing in tank installations. These should include at least: Compatible materials, adequate separation, adequate venting area, venting devices, temperature measurement, earthing (grounding), bund in case of leakage. Prior to the first filling and operation of a tank installation all parts of the facility including all pipes must be thoroughly cleaned and flushed through. Metal elements of the installation must first be pickled and passivated sufficiently. For detailed information on design specifications for the construction of tank- and dosing installations ask the producer for advice. Regularly verify the availability of water to deal with emergencies (for cooling, tank flooding, fire fighting) and check correct operation periodically.

Safe packaging materials: Suitable materials: stainless steel: 1.4571 or 1.4541, passivated aluminium: min. 99.5 % passivated aluminium magnesium alloys, passivated Plastics Polyethylene. polytetrafluoroethylene Polyvinyl chloride Polypropylene glass ceramics.
Unsuitable materials: Copper Lead brass Magnesium Iron. Silver bronze Zinc tin Mild steel

7.3 Specific end use(s):

For more details see annexes Exposure scenario.

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters

Occupational Exposure Limits

Components	CAS-No.	EC No.	Type	Form of exposure	Exposure Limit Values		Source
Hydrogen peroxide	7722-84-1	231-765-0	STEL 15 minutes		2 ppm	3 mg/m3	ELV (IE) (2018)
			TWA		1 ppm	1,5 mg/m3	ELV (IE) (2016)

Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.

Biological Limit Values

No biological exposure limits noted for the ingredient(s).

DNEL-Values

Remarks: DNEL-Values

Critical component	Type	Route of Exposure	Health Warnings	Remarks
Hydrogen peroxide	Workers	Inhalation	Local, long-term 1,4 mg/m3	irritation respiratory tract
	General population	Inhalation	Local, short-term 1,93 mg/m3	irritation respiratory tract
	Workers	Inhalation	Local, short-term 3 mg/m3	irritation respiratory tract
	General population	Inhalation	Local, long-term 0,21 mg/m3	irritation respiratory tract
	Workers	Eyes	Local effect	High hazard (no threshold derived)
	General population	Eyes	Local effect	High hazard (no threshold derived)

PNEC-Values

Remarks: PNEC-Values

Critical component	Environmental compartment	PNEC-Values	Remarks
Hydrogen peroxide	Sediment (freshwater)	0,047 mg/kg	
	Sediment (marine water)	0,047 mg/kg	
	Soil	0,002 mg/kg	
	Sewage treatment plant	4,66 mg/l	
	Aquatic (marine water)	0,013 mg/l	
	Aquatic (freshwater)	0,013 mg/l	

8.2 Exposure controls

Appropriate Engineering Controls: Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Ensure suitable suction/aeration at the work place and with operational machinery. Suitable measuring processes are: Hydrogen peroxide (H2O2) OSHA method ID 006 OSHA method VI-6

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection:	For monitoring tasks in factory and laboratory: Wear frame spectacles with side protection. Wear goggles when filling, decanting or eliminating faults, if splashing/spraying is likely. When handling larger amounts: Additionally wear protective shield. Face protection must comply with the norm EN166.
Hand Protection:	Material: natural latex (NR), nitrile rubber (NBR) Break-through time: > 480 min Glove thickness: 1 mm Guideline: DIN EN 374 Material: Butyl rubber. Break-through time: > 480 min Glove thickness: 0,7 mm Guideline: DIN EN 374 Material: Nitrile. Break-through time: > 480 min Glove thickness: 0,4 mm Guideline: DIN EN 374 Additional Information: Wear chemical-resistant gloves. Contact glove manufacturer for specific information. Additional Information: The above mentioned hand protection is based on knowledge of the chemistry and anticipated uses of this product but it may not be appropriate for all workplaces. A hazard assessment should be conducted prior to use to ensure suitability of gloves for specific work environments and processes prior to use., Personal protective equipment that provides a barrier to prevent dermal exposure to this substance is required.
Skin and Body Protection:	Select materials and equipment for physical protection depending on the concentration and volume of hazardous substances and the workplace involved. Suitable materials are: PVC, neoprene, nitrile rubber, natural rubber. Do not wear protective clothes containing cotton. Examples of protective clothing: For monitoring tasks in factory and laboratory: Wear the usual laboratory protective clothing, protective apron. When filling, decanting or eliminating faults, if splashing/spraying is likely: protective apron, chemical protective suit. When handling larger quantities: chemical protective suit, disposable protective suit. Chemical protective suit must comply with the DIN EN 943-1 standard. Foot protection: Wear safety boots, high, protection class S2 or S4 (DIN EN 20345) Do not wear leather shoes.

Respiratory Protection:	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Wear suitable respiratory protection. Suitable filter: Type NO-P3, code colour blue-white Suitable filter: type CO-P3. Identification color: black/white A self-contained breathing apparatus must be worn if the ambient oxygen content is < 17 % (v/v) or if the situation is uncertain. Self-contained breathing apparatus (EN 133) Observe limited wearing time of 30 minutes. The full mask should comply with "DIN EN 136" The filters should comply with the "EN 14387" norm.
Hygiene measures:	see section 7.
Environmental Controls:	see section 6.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Colorless
Odor:	Odorless
Odor Threshold:	No data available.
Freezing point:	-25,7 °C (1.013 hPa)
Boiling Point:	106 °C (1.013 hPa)
Flammability:	Not classified as a flammability hazard not investigated Not expected during handling from practical experience.

Upper/lower limit on flammability or explosive limits

Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Flash Point:	does not flash
Auto-ignition temperature:	No data available.
Decomposition Temperature:	The substance or mixture is not classified self-reactive. > 75 °C SADT (UN test H.2) 50 kg transport package This information is derived from evaluation of or a test result for a similar compound (conclusion based on analogy). 65 °C SADT (UN test H.2) 20m³ stainless-steel tank This information is derived from evaluation of or a test result for a similar

compound (conclusion based on analogy).

pH: <= 3,5
Concentration: 100 %
(undiluted)

Viscosity

Dynamic viscosity: 1,11 mPa.s (20 °C)

Kinematic viscosity: No data available.

Flow Time: No data available.

Solubility(ies)

Solubility in Water: Miscible with water.

Dissolution Rate: Not applicable

Partition coefficient (n-octanol/water): -1,57 (20 °C)
Method: QSAR
The data is based on the pure substance.

Dispersion Stability: Not applicable

Vapor pressure: 33,33 hPa (20 °C)

Relative density: 1,44 (25 °C)
pure substance

Density: 1,11 g/ml (20 °C)
Method: OECD 109

1,09 g/ml (50 °C)
Method: OECD 109

Relative vapor density: Heavier than air

Particle characteristics

Particle Size: Not applicable

Particle Size Distribution: Not applicable

Dustiness: Not applicable

Specific surface area: No data available.

Surface charge/Zeta potential: No data available.

Assessment: Not applicable

Shape: Not applicable

Crystallinity: Not applicable

Surface treatment: Not applicable

9.2 Other information

Explosive properties: Not explosive

Oxidizing properties: The substance or mixture is not classified as oxidizing.
UN Test O.2 (oxidizing liquids)

Pyrophoric properties: The substance or mixture is not classified as pyrophoric.

Self-heating:	The substance or mixture is not classified as self heating.
Formation of Flammable Gases:	Substance or mixture, which in contact with water, does not emit flammable gas
Peroxides:	The substance or mixture is not classified as organic peroxide.
Metal Corrosion:	Method: UN Manual of Tests and Criteria Part III, Sec. 37 Not corrosive to metals (analogy)
Evaporation Rate:	No data available.
Miscible (water):	completely miscible
Surface tension:	74,2 mN/m (20 °C)
Molecular weight:	34,02 g/mol Hydrogen peroxide (H_2O_2)
Other physical and chemical parameters:	Hazardous polymerisation does not occur.

SECTION 10: Stability and reactivity

10.1	**Reactivity:**	Product is a(n) oxidizing agent and reactive. Decomposition hazard in case of temperature/heat exposure, contaminations or contact with incompatible materials.
10.2	**Chemical Stability:**	Stable under recommended storage conditions. Product is supplied in stabilised form. Commercial products are stabilised to reduce risk of decomposition due to contamination.
10.3	**Possibility of hazardous reactions:**	Hazardous polymerisation does not occur. When coming in contact with the product, impurities, decomposition catalysts, incompatible substances, combustible substances, may lead to self-accelerated, exothermic decomposition and the formation of oxygen. Risk of overpressure and burst due to decomposition in confined spaces and pipes. Release of oxygen may support combustion. Decomposition hazard, see Section 10.1
10.4	**Conditions to avoid:**	sun rays, heat, heat effect
10.5	**Incompatible Materials:**	Impurities, decomposition catalysts, metals, metal salts, alkaline substances, hydrochloric acid, reduction agents, inflammable substances, organic solvents.
10.6	**Hazardous Decomposition Products:**	Decomposition products in case of thermal decomposition: water vapor, oxygen.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Inhalation: Information on effects are given below.

Skin Contact: Information on effects are given below.

Eye contact: Information on effects are given below.

Ingestion: Information on effects are given below.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: No data available.

Skin Contact: No data available.

Eye contact: No data available.

Ingestion: No data available.

Acute toxicity (list all possible routes of exposure)

Oral

Product: ATEmix, 1.437 mg/kg

Components:

Hydrogen peroxide: LD 50, Rat, Female, Male, 431 mg/kg, Expert judgement

Dermal

Product: Not classified for acute toxicity based on available data.

Components:

Hydrogen peroxide: LD 50, Rabbit, Male, 9.200 mg/kg, OECD 402

Inhalation

Product: ATEmix, 37 mg/l, Vapour
ATEmix, 5,0 mg/l, Dust and mist

Components:

Hydrogen peroxide: LC 50, Acute toxicity estimate, 4 h, 1,5 mg/l, Dust and mist, Expert judgement
LC 50, Acute toxicity estimate, 4 h, 11 mg/l, Vapour, Expert judgement

Repeated dose toxicity

Product: NOAEL Mouse, Female, Oral, 37 mg/kg, drinking water analysis hydrogen peroxide, 35 %
NOAEL Mouse, Male, Oral, 26 mg/kg, drinking water analysis hydrogen peroxide, 35 %

Skin Corrosion/Irritation

Product: Not irritating, Calculation method

Components:

Hydrogen peroxide: Corrosive.

Serious Eye Damage/Eye Irritation

Product: Risk of serious damage to eyes., OECD 405, (analogy)

Components:

Hydrogen peroxide	Risk of serious damage to eyes.

Respiratory or Skin Sensitization

Product:	Sensitization test, Magnussona i Kligmana., Guinea Pig, Not a skin sensitizer., Literature
Components:	
Hydrogen peroxide	Magnussona i Kligmana., Guinea Pig, Not a skin sensitizer., Literature

Carcinogenicity - Assessment

Product:	Clues to possible carcinogenic effects in animal experiments: Up to date there is no evidence of increased tumour risk. Hydrogen peroxide is not a carcinogenic substance according to MAK, IARC, NTP, OSHA, ACGIH.
Components:	
Hydrogen peroxide	Clues to possible carcinogenic effects in animal experiments: Up to date there is no evidence of increased tumour risk. Hydrogen peroxide is not a carcinogenic substance according to MAK, IARC, NTP, OSHA, ACGIH.

Germ Cell Mutagenicity

Based on available data, the classification criteria are not met.

In vitro

Product:	Bacterial reverse mutation assay: , positive and negative, Literature Chromosomal aberration, OECD 473: , positive, Literature Genetic mutation in mammal cells, OECD 476: , positive, Literature
Components:	
Hydrogen peroxide	Bacterial reverse mutation assay: , positive and negative, Literature Chromosomal aberration, OECD 473: , positive, Literature Genetic mutation in mammal cells, OECD 476: , positive, Literature

In vivo

Product:	Micronucleus test, OECD 474, Intraperitoneal, Mouse, Female, Male, negative, hydrogen peroxide, 35 %

Reproductive toxicity

Effects on fertility

Product:	No data available.

Effects on fetal development

No data available.

Reproductive toxicity - Assessment

Product:	Reproductive toxicity: No data available. Teratogenicity: No data available.

Specific Target Organ Toxicity - Single Exposure

Product:	Based on available data, the classification criteria are not met.
Components:	
Hydrogen peroxide	Inhalation - vapor, Respiratory system, Category 3 with respiratory tract irritation.

Specific Target Organ Toxicity - Repeated Exposure

Product:	No data available.

Aspiration Hazard

Product:	Based on available data, the classification criteria are not met.
Components:	
Hydrogen peroxide	Not classified

11.2 Information on other hazards

Endocrine disrupting properties

Product:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Components:	
Hydrogen peroxide	Classification not possible due to insufficient data.

Other information

Product:	No data available.

SECTION 12: Ecological information

12.1 Toxicity:

Toxicity to Aquatic Plants

Product:	No data available.
Components:	
Hydrogen peroxide	EC 50, Raphidocelis subcapitata (freshwater green alga), 72 h, 0,5 mg/l, OECD 201 NOEC, Raphidocelis subcapitata (freshwater green alga), 72 h, 0,13 mg/l, OECD 201 EC 50, Skeletonema costatum (marine diatom), 72 h, 1,38 mg/l NOEC, Skeletonema costatum (marine diatom), 72 h, 0,63 mg/l

Toxicity to microorganisms

Product:	No data available.
Components:	
Hydrogen peroxide	EC 50, activated sludge, 0,5 h, 213 mg/l, OECD 209 EC 50, activated sludge, 3 h, 223 mg/l, OECD 209

Acute hazards to the aquatic environment:

Fish

Product:	No data available.
Components:	
Hydrogen peroxide	LC 50, Pimephales promelas, 96 h, 16,4 mg/lUS-EPA-method

Aquatic Invertebrates

Product:	No data available.
Components:	

Hydrogen peroxide	EC 50, Daphnia pulex, 48 h, 2,4 mg/lUS-EPA-method

Chronic hazards to the aquatic environment:

Fish

Product:	No data available.

Aquatic Invertebrates

Product:	No data available.
Components:	
Hydrogen peroxide	NOEC, Daphnia magna, 21 d, 0,63 mg/l

12.2 Persistence and Degradability

Biodegradation

Product:	The product is readily biodegradable. Semiquantitative measurement of concentration over time. Hydrogen peroxide (H2O2)
Components:	
Hydrogen peroxide	Semiquantitative measurement of concentration over time. The product is easily biodegradable.

BOD/COD Ratio
No data available.

12.3 Bioaccumulative potential

Bioconcentration Factor (BCF)

Product:	None. Hydrogen peroxide quickly decomposes to oxygen and water.
Components:	
Hydrogen peroxide	None. Hydrogen peroxide quickly decomposes to oxygen and water.

Partition Coefficient n-octanol / water (log Kow)

Product:	-1,57, 20 °C, QSAR, The data is based on the pure substance.
Components:	
Hydrogen peroxide	-1,57, 20 °C

12.4 Mobility in soil:

Product:	No data available.

12.5 Results of PBT and vPvB assessment:

Product:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Components:	
Hydrogen peroxide	Classification not possible due to insufficient data. Classification not possible due to insufficient data.

12.6 Endocrine disrupting properties:

Product:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Components:	
Hydrogen peroxide	Classification not possible due to insufficient data.

12.7 Other adverse effects:

Additional ecological information

Product:	The properties of this product which are characteristics posing a threat to the environment have been calculated as per regulation (EC) No. 1272/2008. See section 2 "Hazards Identification".
Components:	
Hydrogen peroxide	Classification not possible due to insufficient data. Classification not possible due to insufficient data.

Ozone-Depletion Potential

Product:	Not Regulated

SECTION 13: Disposal considerations

13.1 Waste treatment methods

General information:	Do not return unused product to original container (risk of decomposition). Review all local, state and federal regulations concerning health and pollution for appropriate disposal procedures. For disposal please observe the product properties. No waste key number as per the European Waste Types List can be assigned to this product, since such classification is based on the (as yet undetermined) use to which the product is put by the consumer. The waste key number must be determined as per the European Waste Types List (decision on EU Waste Types List 2000/532/EC) in cooperation with the disposal firm / producing firm / official authority.
Disposal methods:	Pack and store waste like the pure substance and apply the label according to the contents for disposal. Both hazardous substance and dangerous goods classification & labelling must match the contents to be disposed of. Offer surplus and non-recyclable solutions to a licensed disposal company. With small amounts: Taking into account local regulations the product may be disposed of as waste water after neutralisation.
Contaminated Packaging:	Rinse empty containers before disposal; recommended cleaning agent: water. Offer rinsed packaging material to local recycling facilities. Do not reuse empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities.

SECTION 14: Transport information

14.1 UN/ID No.

ADR	:	UN 2014
RID	:	UN 2014
IMDG	:	UN 2014
IATA	:	UN 2014

14.2 UN proper shipping name

ADR	:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
RID	:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
IMDG	:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
IATA	:	Hydrogen peroxide, aqueous solution

14.3 Transport hazard class(es)

ADR	:	5.1
RID	:	5.1
IMDG	:	5.1
IATA	:	5.1

14.4 Packing group

ADR

Packing group	:	II
Classification Code	:	OC1
Hazard Identification Number	:	58
Labels	:	5.1 (8)
Tunnel restriction code	:	(E)

RID

Packing group	:	II
Classification Code	:	OC1
Hazard Identification Number	:	58
Labels	:	5.1 (8)

IMDG

Packing group	:	II
Labels	:	5.1 (8)
EmS Code	:	F-H, S-Q
Remarks	:	SW1 - Protected from sources of heat., IMDG Code segregation group 16 - Peroxides, SG16 - Stow “separated from” class 4.1., SG59 - Stow “separated from” SGG14 – permanganates., SG72 - See tables in 7.2.6.3., Stowage category D, Canada: ERAP 2-1008-072, ER 24 hour number 251-443-1634

IATA (Cargo aircraft only)

Packing instruction (cargo aircraft)	:	554

Packing instruction (LQ)	:	Y540
Packing group	:	II
Labels	:	5.1 (8)

IATA (Passenger and cargo aircraft)

Packing instruction (passenger aircraft)	:	550
Packing instruction (LQ)	:	Y540
Packing group	:	II
Labels	:	5.1 (8)

14.5 Environmental hazards

ADR

Environmentally hazardous	:	yes

RID

Environmentally hazardous	:	yes

IMDG

Marine pollutant	:	yes

IATA (Passenger and cargo aircraft)

Environmentally hazardous	:	yes

IATA (Cargo aircraft only)

Environmentally hazardous	:	yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

EU Regulations

EU. REACH Annex XIV, Substances Subject to Authorization: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

EU. Regulation 2019/1021/EU on persistent organic pollutants (POPs) (recast), as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

EU. Directive 2010/75/EU on Industrial Emissions (IPPC), Annex II, L 334/17: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

EU. REACH Candidate List of Substances of Very High Concern for Authorization (SVHC): None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

EU. REACH Annex XVII, Substances subject to restriction on marketing and use:

Chemical name	CAS-No.	Number on list
Hydrogen peroxide	7722-84-1	3

Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work.: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breast feeding.: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

EU. Directive 2012/18/EU on major accident hazards involving dangerous substances, Annex I, as amended:

Classification	Lower-tier Requirements	Upper-tier Requirements
E1. Hazardous to the aquatic environment	100 t	200 t

EU. Regulation No. 166/2006 PRTR (Pollutant Release and Transfer Registry), Annex II: Pollutants: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

EU. Restricted Explosives Precursors: Annex I, Regulation 2019/1148/EU on Explosives Precursors (EUEXPL1D):

Chemical name	CAS-No.
Hydrogen peroxide	7722-84-1

EU. Reportable (Annex II) Explosives Precursors, Regulation 2019/1148/EU on Explosives Precursors (EUEXPL2D): None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

EU. Reportable (Annex II) Explosives Precursors, Regulation 2019/1148/EU on Explosives Precursors (EUEXPL2L): None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Other regulations

All national and local regulations have to be followed.
This product is regulated by Regulation (EU) 2019/1148. Any suspicous transactions or the loss or theft of any significant amounts must be reported to the competent national contact point. Cf. Siehe https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/crisis-and-terrorism/explosives/explosives-precursors/docs/list_of_competent_authorities_and_national_contact_points_en.pdf

Inventory Status:

Australia Industrial Chem. Act (AIIC):	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Philippines PICCS:	On or in compliance with the inventory
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory Pre-registration is requested for specific importer.
US TSCA Inventory:	On or in compliance with the inventory Commercial Status: Active
Switzerland New Subs Notified/Registered:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory EU-REACH compliant for Evonik Operations GmbH and its affiliates as EU manufacturer/EU importer.

International regulations

Montreal protocol
Not applicable

Stockholm convention
Not applicable

Rotterdam convention
Not applicable

Kyoto protocol
Not applicable

15.2 Chemical safety assessment: Yes

SECTION 16: Other information

Abbreviations and acronyms:

IR_OEL: Ireland. OELVs, Schedules 1 & 2, Code of Practice for Chemical Agents, Carcinogens, Mutagens and Reprotoxic Substances, as amended

IR_OEL / STEL: Short Term Exposure Limit (STEL):

IR_OEL / TWA: Time Weighted Average (TWA):

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; EIGA - European Industrial Gases Association; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); LSPN - List of Hazardous Notified Substances (Chile); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Notes:

Note B	Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: 'nitric acid...%'. In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.

Key literature references and sources for data: No data available.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Classification	Classification procedure
Acute toxicity, Category 4 Oral	Calculation method
Acute toxicity, Category 4 Inhalation - dust and mist	Calculation method
Serious eye damage, Category 1	On basis of test data
Acute hazards to the aquatic environment, Category 1	Calculation method

Chronic hazards to the aquatic environment, Category 3	Calculation method

Full text of H-Statements

H271	May cause fire or explosion; strong oxidizer.
H272	May intensify fire; oxidizer.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Training information: No data available.

Other information: Data for the production of the safety data sheet from the studies available and from the literature. Further information about the characteristics of the product can be found in the product code of practice or in the Product-Brochure .

Revision Information Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

Disclaimer: This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

Annex to the extended Safety Data Sheet (eSDS)

Content

Exposure Scenario I. Formulation & (re)packing of substances and mixtures
Exposure Scenario II. Use of non-reactive processing aid at industrial site (no inclusion in
Exposure Scenario III. Use in chemical synthesis.
Exposure Scenario IV. Bleaching agent
Exposure Scenario V. Use in metal finishing or electronic industry
Exposure Scenario VI. Production of chemically modified foodstuff
Exposure Scenario VII. Industrial use of water treatment products
Exposure Scenario VIII. Use as a fuel
Exposure Scenario IX. Use as chemical reagent in glow sticks
Exposure Scenario X. Bleaching agent
Exposure Scenario XI. Soil remediation products
Exposure Scenario XII. for use as an agricultural chemical
Exposure Scenario XIII. Laboratory use
Exposure Scenario XIV. Use in water treatment agents
Exposure Scenario XV. Use in cleaning agents
Exposure Scenario XVI. Uses in cosmetics/personal care products, perfumes and fragrances
Exposure Scenario XVII. Use in water treatment agents
Exposure Scenario XVIII. Sterilisation of medical equipment
Exposure Scenario XIX. Bleaching agent
Exposure Scenario XX. Use in water treatment agents
Exposure Scenario XXI. Use in cleaning agents

Exposure Scenario I.

Exposure scenario worker

1.Formulation & (re)packing of substances and mixtures

List of use descriptors	
Life Cycle Stage	Formulation or re-packing
Sector(s) of use	SU3: Industrial uses: Uses of substances as such or in preparations at indu
Product categories [PC]:	PC1: Adhesives, sealants PC8: Biocidal product PC12: Fertilizers PC14: Metal surface treatment products PC15: Non-metal surface treatment products

	PC21: Laboratory chemicals PC25: Metal working fluids PC27: Plant protection products PC29: Pharmaceuticals PC31: Polishes and wax blends PC32: Polymer preparations and compounds PC34: Textile dyes and impregnating products PC35: Washing and cleaning products PC37: Use in water treatment agents PC39: Cosmetics, personal care products

Name of contributing environmental scenario and corresponding ERC	Formulation & (re)packing of substances and mixtures: ERC2: Formulation into mixture (mixtures)

List of names of contributing worker scenarios and corresponding PROCs	Formulation & (re)packing of substances and mixtures: PROC1: Use in closed process, no likelihood of exposure Formulation & (re)packing of substances and mixtures: PROC2: Use in closed, continuous process with occasional controlled exposure Formulation & (re)packing of substances and mixtures: PROC3: Use in closed batch process (synthesis or formulation) Formulation & (re)packing of substances and mixtures: PROC4: Use in batch and other process (synthesis) where opportunity for expos Formulation & (re)packing of substances and mixtures: PROC5: Mixing or blending in batch processes Formulation & (re)packing of substances and mixtures: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve Formulation & (re)packing of substances and mixtures: PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Formulation & (re)packing of substances and mixtures: PROC9: Transfer of substance or mixture into small containers (dedicated fill

	Formulation & (re)packing of substances and mixtures: PROC14: Production of preparations or articles by tabletting, compression, ext Formulation & (re)packing of substances and mixtures: PROC15: Use as laboratory reagent Formulation & (re)packing of substances and mixtures: PROC28: Manual maintenance (cleaning and repair) of machinery

2.1.Contributing exposure scenario controlling environmental exposure for: Formulation & (re)packing of substances and mixtures

Environmental Release Category (ERC)	ERC2: Formulation into mixture (mixtures)

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount per site	50 tonnes/day
Annual amount per site	15000 t(onnes)/year

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	18.000 m3/d
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant
Flow rate of receiving surface water.:	

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		-	-	0 %	Percentage released into the water by the process (release rate according to RMM)
		0 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0 %	-	Percentage released into the soil by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to air: 0 kg/day Release rate applicable to water: 0 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	2.000 m3/d
Treatment effectiveness:	99,3 %
Sludge treatment technique:	sludge to soil
Measures to limit air emissions:	not relevant

Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Formulation & (re)packing of substances and mixtures

Process Categories:	PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use			3	

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	eye exposure	Use suitable eye protection.		

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Formulation & (re)packing of substances and mixtures

Process Categories:	PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: Formulation & (re)packing of substances and mixtures

Process Categories:	PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.5. Contributing exposure scenario controlling worker exposure for: Formulation & (re)packing of substances and mixtures

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for expos

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.6. Contributing exposure scenario controlling worker exposure for: Formulation & (re)packing of substances and mixtures

Process Categories:	PROC5: Mixing or blending in batch processes

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Mixing or blending in batch processes:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Mixing or blending in batch processes:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.7. Contributing exposure scenario controlling worker exposure for: Formulation & (re)packing of substances and mixtures

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV)	90 %	
	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.8. Contributing exposure scenario controlling worker exposure for: Formulation & (re)packing of substances and mixtures

Process Categories:	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	95 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.9. Contributing exposure scenario controlling worker exposure for: Formulation & (re)packing of substances and mixtures

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.10. Contributing exposure scenario controlling worker exposure for: Formulation & (re)packing of substances and mixtures

Process Categories:	PROC14: Production of preparations or articles by tabletting, compression, ext

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Production of preparations or articles by tabletting, compression, ext:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Production of preparations or articles by tabletting, compression, ext:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.11. Contributing exposure scenario controlling worker exposure for: Formulation & (re)packing of substances and mixtures

Process Categories:	PROC15: Use as laboratory reagent

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use as laboratory reagent:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use as laboratory reagent:	eye exposure	Use suitable eye protection.		
		Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.12. Contributing exposure scenario controlling worker exposure for: Formulation & (re)packing of substances and mixtures

Process Categories:	PROC28: Manual maintenance (cleaning and repair) of machinery

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Manual maintenance (cleaning and repair) of machinery:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Manual maintenance (cleaning and repair) of machinery:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Formulation & (re)packing of substances and mixtures:

ERC2:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00341 mg/ml	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000319 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none

Sewage treatment plant	0 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Formulation & (re)packing of substances and mixtures:

PROC1:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,013 mg/m³	< 0,01	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,05 mg/m³	0,017	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Formulation & (re)packing of substances and mixtures:

PROC2:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,128 mg/m³	0,091	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,51 mg/m³	0,17	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Formulation & (re)packing of substances and mixtures:

PROC3:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,38 mg/m³	0,271	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,53 mg/m³	0,51	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Formulation & (re)packing of substances and mixtures:

PROC4:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,64 mg/m³	0,457	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Formulation & (re)packing of substances and mixtures:

PROC5:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,64 mg/m³	0,457	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Formulation & (re)packing of substances and mixtures:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,28 mg/m³	0,914	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2 mg/m³	0,667	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Formulation & (re)packing of substances and mixtures:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,32 mg/m³	0,229	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,28 mg/m³	0,427	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Formulation & (re)packing of substances and mixtures:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,638 mg/m³	0,456	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Formulation & (re)packing of substances and mixtures:

PROC14:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,64 mg/m³	0,457	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Formulation & (re)packing of substances and mixtures:

PROC15:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,64 mg/m³	0,457	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Formulation & (re)packing of substances and mixtures:

PROC28:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,32 mg/m³	0,229	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,28 mg/m³	0,427	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario II.

Exposure scenario worker

1.Use of non-reactive processing aid at industrial site (no inclusion in

List of use descriptors	
Life Cycle Stage	Use at industrial sites
Sector(s) of use	SU3: Industrial uses: Uses of substances as such or in preparations at indu SU2a: Mining (without offshore industries) SU8: Manufacture of bulk, large scale chemicals (including petroleum produc SU9: Manufacture of fine chemicals SU11: Manufacture of rubber products SU12: Manufacture of plastics products, including compounding and conversion SU16: Manufacture of computer, electronic and optical products,

	electrical e SU23: Electricity, steam, gas water supply and sewage treatment
Product categories [PC]:	PC1: Adhesives, sealants PC2: Adsorbents PC9a: Coatings and paints, thinners, paint removers PC14: Metal surface treatment products PC15: Non-metal surface treatment products PC20: Processing aids such as pH-regulators, flocculants, precipitants, neut PC21: Laboratory chemicals PC26: Paper and board treatment products PC32: Polymer preparations and compounds PC33: Semiconductors PC34: Textile dyes and impregnating products PC35: Washing and cleaning products PC37: Use in water treatment agents

Name of contributing environmental scenario and corresponding ERC	Use of non-reactive processing aid at industrial site (no inclusion in: ERC4: Use of non-reactive processing aid at industrial site (no inclusion in

List of names of contributing worker scenarios and corresponding PROCs	Use of non-reactive processing aid at industrial site (no inclusion in: PROC1: Use in closed process, no likelihood of exposure Use of non-reactive processing aid at industrial site (no inclusion in: PROC2: Use in closed, continuous process with occasional controlled exposure Use of non-reactive processing aid at industrial site (no inclusion in: PROC3: Use in closed batch process (synthesis or formulation) Use of non-reactive processing aid at industrial site (no inclusion in: PROC4: Use in batch and other process (synthesis) where

	opportunity for expos Use of non-reactive processing aid at industrial site (no inclusion in: PROC5: Mixing or blending in batch processes Use of non-reactive processing aid at industrial site (no inclusion in: PROC7: Industrial spraying Use of non-reactive processing aid at industrial site (no inclusion in: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve Use of non-reactive processing aid at industrial site (no inclusion in: PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use of non-reactive processing aid at industrial site (no inclusion in: PROC9: Transfer of substance or mixture into small containers (dedicated fill Use of non-reactive processing aid at industrial site (no inclusion in: PROC13: Treatment of articles by dipping and pouring Use of non-reactive processing aid at industrial site (no inclusion in: PROC13: Treatment of articles by dipping and pouring Use of non-reactive processing aid at industrial site (no inclusion in: PROC15: Use as laboratory reagent Use of non-reactive processing aid at industrial site (no inclusion in: PROC22: Manufacturing and processing of minerals and/or metals at substantiall Use of non-reactive processing aid at industrial site (no inclusion in: PROC23: Open processing and transfer operations with minerals/metals at elevat Use of non-reactive processing aid at industrial site (no inclusion in: PROC28: Manual maintenance (cleaning and repair) of machinery

2.1.Contributing exposure scenario controlling environmental exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Environmental Release Category (ERC)	ERC4: Use of non-reactive processing aid at industrial site (no inclusion in

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount per site	0,02 tonnes/day
Annual amount per site	5 t(onnes)/year

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	18.000 m3/d
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant
Flow rate of receiving surface water.:	

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
ERC4		-	-	100 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

ERC4		100 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
ERC4		-	5 %	-	Percentage released into the soil by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to air: 20 kg/day Release rate applicable to water: 20 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	2.000 m3/d
Treatment effectiveness:	99,3 %
Sludge treatment technique:	sludge to soil
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use			3	

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	eye exposure	Use suitable eye protection.		

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.5. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for expos

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.6. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC5: Mixing or blending in batch processes

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Mixing or blending in batch processes:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Mixing or blending in batch processes:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.7. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC7: Industrial spraying

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial spraying:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	95 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial spraying:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	95 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.8. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV)	90 %	
	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.9. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	95 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.10. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.11. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC13: Treatment of articles by dipping and pouring

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.12. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC13: Treatment of articles by dipping and pouring

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	80 %	
	Inhalation exposure	Use respiratory protection.	95 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.13. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC15: Use as laboratory reagent

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use as laboratory reagent:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use as laboratory reagent:	eye exposure	Use suitable eye protection.		
		Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.14. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC22: Manufacturing and processing of minerals and/or metals at substantiall

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	150 °C

Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
PROC22:	Inhalation exposure	Use closed systems.	99 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
PROC22:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.15. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC23: Open processing and transfer operations with minerals/metals at elevat

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	150 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Open processing and transfer operations with minerals/metals at elevat:	Inhalation exposure	Local exhaust ventilation (LEV)	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Open processing and transfer operations with minerals/metals at elevat:	eye exposure	Use suitable eye protection.		
		Use respiratory protection.	95 %	
		Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.16. Contributing exposure scenario controlling worker exposure for: Use of non-reactive processing aid at industrial site (no inclusion in

Process Categories:	PROC28: Manual maintenance (cleaning and repair) of machinery

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Manual maintenance (cleaning and repair) of machinery:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Manual maintenance (cleaning and repair) of machinery:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Use of non-reactive processing aid at industrial site (no inclusion in:

ERC4:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
Fresh water	0,01 mg/L	< 1	Qualitative approach used to conclude safe use.	none
freshwater sediment	0,039 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,00102 mg/L	0,392	EUSES v2.1.2	none
Marine sediments	0,00383 mg/kg dry weight	0,392	EUSES v2.1.2	none
agricultural soil	0,000761 mg/kg	< 0,01	Qualitative approach used to conclude safe use.	none
Sewage treatment plant	0,07 mg/L	0,219	EUSES v2.1.2	none
Humans via the environment	0,00383 mg/m³	0,018	EUSES v2.1.2	none

Health:

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC1:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,013 mg/m³	< 0,01	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,05 mg/m³	0,017	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC2:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,128 mg/m³	0,091	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,51 mg/m³	0,17	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC3:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,38 mg/m³	0,271	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,53 mg/m³	0,51	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC4:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,64 mg/m³	0,457	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC5:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,64 mg/m³	0,457	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC7:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1 mg/m³	0,227	Used ART model.	none
Worker - inhalative, short-term - local		1 mg/m³	0,425	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,28 mg/m³	0,914	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2 mg/m³	0,667	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,32 mg/m³	0,229	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,28 mg/m³	0,427	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,638 mg/m³	0,456	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC13:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,28 mg/m³	0,914	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2 mg/m³	0,667	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC13:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,63 mg/m³	0,45	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC15:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,64 mg/m³	0,457	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC22:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,68 mg/m³	0,486	Used ART model.	none
Worker - inhalative, short-term - local		0,68 mg/m³	0,227	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC23:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,15 mg/m³	0,821	Used ART model.	none
Worker - inhalative, short-term - local		1,15 mg/m³	0,383	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use of non-reactive processing aid at industrial site (no inclusion in:

PROC28:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,32 mg/m³	0,229	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,28 mg/m³	0,427	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario III.

Exposure scenario worker

1.Use in chemical synthesis.

List of use descriptors	
Life Cycle Stage	Use at industrial sites
Sector(s) of use	SU3: Industrial uses: Uses of substances as such or in preparations at indu SU8: Manufacture of bulk, large scale chemicals (including petroleum produc SU9: Manufacture of fine chemicals SU11: Manufacture of rubber products SU12: Manufacture of plastics products, including compounding and conversion
Product categories [PC]:	PC1: Adhesives, sealants PC9a: Coatings and paints, thinners, paint removers

	PC2: Adsorbents PC14: Metal surface treatment products PC15: Non-metal surface treatment products PC20: Processing aids such as pH-regulators, flocculants, precipitants, neut PC21: Laboratory chemicals PC26: Paper and board treatment products PC32: Polymer preparations and compounds PC34: Textile dyes and impregnating products PC35: Washing and cleaning products PC37: Use in water treatment agents PC19: Intermediate (precursor)

Name of contributing environmental scenario and corresponding ERC	Use in chemical synthesis.: ERC6b: Industrial use of reactive processing aids Use in chemical synthesis.: ERC6c: Use of monomer in polymerisation processes at industrial site (inclusi Use in chemical synthesis.: ERC6d: Use of reactive process regulators in polymerisation processes at indu Use in chemical synthesis.: ERC6a: Use of intermediate

List of names of contributing worker scenarios and corresponding PROCs	Use in chemical synthesis.: PROC1: Use in closed process, no likelihood of exposure Use in chemical synthesis.: PROC2: Use in closed, continuous process with occasional controlled exposure Use in chemical synthesis.: PROC3: Use in closed batch process (synthesis or formulation) Use in chemical synthesis.: PROC4: Use in batch and other process (synthesis) where opportunity for expos

	Use in chemical synthesis.: PROC5: Mixing or blending in batch processes Use in chemical synthesis.: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve Use in chemical synthesis.: PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve Use in chemical synthesis.: PROC9: Transfer of substance or mixture into small containers (dedicated fill Use in chemical synthesis.: PROC15: Use as laboratory reagent Use in chemical synthesis.: PROC28: Manual maintenance (cleaning and repair) of machinery

2.1.Contributing exposure scenario controlling environmental exposure for: Use in chemical synthesis.

Environmental Release Category (ERC)	ERC6b: Industrial use of reactive processing aids

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount per site	3 tonnes/day
Annual amount per site	900 t(onnes)/year

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m³/d):	400.000 m3/d
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant
Flow rate of receiving surface water.:	

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0,01 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	0,7 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to air: 3 kg/day Release rate applicable to water: 21 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	10.000 m3/d
Treatment effectiveness:	99,3 %
Sludge treatment technique:	sludge to soil
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.1.Contributing exposure scenario controlling environmental exposure for: Use in chemical synthesis.

Environmental Release Category (ERC)	ERC6c: Use of monomer in polymerisation processes at industrial site (inclusi

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount per site	3 tonnes/day
Annual amount per site	900 t(onnes)/year

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m³/d):	400.000 m3/d
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant
Flow rate of receiving surface water.:	

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0,01 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	0,7 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to air: 3 kg/day Release rate applicable to water: 21 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	10.000 m3/d
Treatment effectiveness:	99,3 %
Sludge treatment technique:	sludge to soil
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.1.Contributing exposure scenario controlling environmental exposure for: Use in chemical synthesis.

Environmental Release Category (ERC)	ERC6d: Use of reactive process regulators in polymerisation processes at indu

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount per site	3 tonnes/day
Annual amount per site	900 t(onnes)/year

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	18.000 m3/d
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant
Flow rate of receiving surface water.:	

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0,01 %	-	Percentage released into the soil by the process (release rate according to RMM)

		-	-	0,005 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to air: 3 kg/day Release rate applicable to water: 0,15 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	2.000 m3/d
Treatment effectiveness:	99,3 %
Sludge treatment technique:	sludge to soil
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.1.Contributing exposure scenario controlling environmental exposure for: Use in chemical synthesis.

Environmental Release Category (ERC)	ERC6a: Use of intermediate

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount per site	3 tonnes/day
Annual amount per site	900 t(onnes)/year

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	400.000 m3/d
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant
Flow rate of receiving surface water.:	

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	

		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0,01 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	0,7 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to air: 3 kg/day Release rate applicable to water: 21 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	10.000 m3/d
Treatment effectiveness:	99,3 %
Sludge treatment technique:	sludge to soil
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Use in chemical synthesis.

Process Categories:	PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use			3	

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	eye exposure	Use suitable eye protection.		

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Use in chemical synthesis.

Process Categories:	PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: Use in chemical synthesis.

Process Categories:	PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.5. Contributing exposure scenario controlling worker exposure for: Use in chemical synthesis.

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for expos

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.6. Contributing exposure scenario controlling worker exposure for: Use in chemical synthesis.

Process Categories:	PROC5: Mixing or blending in batch processes

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Mixing or blending in batch processes:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Mixing or blending in batch processes:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.7. Contributing exposure scenario controlling worker exposure for: Use in chemical synthesis.

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV)	90 %	
	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.8. Contributing exposure scenario controlling worker exposure for: Use in chemical synthesis.

Process Categories:	PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	95 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.9. Contributing exposure scenario controlling worker exposure for: Use in chemical synthesis.

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.10. Contributing exposure scenario controlling worker exposure for: Use in chemical synthesis.

Process Categories:	PROC15: Use as laboratory reagent

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use as laboratory reagent:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use as laboratory reagent:	eye exposure	Use suitable eye protection.		
		Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.11. Contributing exposure scenario controlling worker exposure for: Use in chemical synthesis.

Process Categories:	PROC28: Manual maintenance (cleaning and repair) of machinery

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Manual maintenance (cleaning and repair) of machinery:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Manual maintenance (cleaning and repair) of machinery:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Use in chemical synthesis.:

ERC6b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,014 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00377 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000466 mg/L	0,179	EUSES v2.1.2	none
Marine sediments	0,00175 mg/kg dry weight	0,179	EUSES v2.1.2	none
agricultural soil	0,000309 mg/kg dry weight	0,72	EUSES v2.1.2	none
Sewage treatment plant	0,015 mg/L	0,046	EUSES v2.1.2	none

Humans via the environment	0,000704 mg/m³	< 0,01	EUSES v2.1.2	none

Use in chemical synthesis.:

ERC6c:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,014 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00377 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000466 mg/L	0,179	EUSES v2.1.2	none
Marine sediments	0,00175 mg/kg dry weight	0,179	EUSES v2.1.2	none
agricultural soil	0,000309 mg/kg dry weight	0,72	EUSES v2.1.2	none
Sewage treatment plant	0,015 mg/L	0,046	EUSES v2.1.2	none
Humans via the environment	0,000704 mg/m³	< 0,01	EUSES v2.1.2	none

Use in chemical synthesis.:

ERC6d:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none

Fresh water	0,00347 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000324 mg/L	0,125	EUSES v2.1.2	none
Marine sediments	0,00122 mg/kg dry weight	0,125	EUSES v2.1.2	none
agricultural soil	0,000309 mg/kg dry weight	0,72	EUSES v2.1.2	none
Sewage treatment plant	0,015 mg/L	0,046	EUSES v2.1.2	none
Humans via the environment	0,000704 mg/m³	< 0,01	EUSES v2.1.2	none

Use in chemical synthesis.:

ERC6a:

Compartment	**Predicted environmental concentration (PEC)**	**Risk characterisation ratio (RCR)**	**Method**	**Remarks**
freshwater sediment	0,014 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00377 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000466 mg/L	0,179	EUSES v2.1.2	none
Marine sediments	0,00175 mg/kg dry weight	0,179	EUSES v2.1.2	none
agricultural soil	0,000309 mg/kg dry weight	0,72	EUSES v2.1.2	none
Sewage treatment plant	0,015 mg/L	0,046	EUSES v2.1.2	none

Humans via the environment	0,000704 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Use in chemical synthesis.:

PROC1:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,013 mg/m³	< 0,01	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,05 mg/m³	0,017	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in chemical synthesis.:

PROC2:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,128 mg/m³	0,091	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,51 mg/m³	0,17	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in chemical synthesis.:

PROC3:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,38 mg/m³	0,271	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,53 mg/m³	0,51	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in chemical synthesis.:

PROC4:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,64 mg/m³	0,457	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in chemical synthesis.:

PROC5:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,64 mg/m³	0,457	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in chemical synthesis.:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,28 mg/m³	0,914	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2 mg/m³	0,667	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in chemical synthesis.:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,32 mg/m³	0,229	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,28 mg/m³	0,427	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in chemical synthesis.:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,638 mg/m³	0,456	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in chemical synthesis.:

PROC15:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,64 mg/m³	0,457	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in chemical synthesis.:

PROC28:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,32 mg/m³	0,229	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,28 mg/m³	0,427	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario IV.

Exposure scenario worker

1.Bleaching agent

List of use descriptors	
Life Cycle Stage	Use at industrial sites
Sector(s) of use	SU3: Industrial uses: Uses of substances as such or in preparations at indu SU5: Manufacture of textiles, leather, fur SU6b: Manufacture of pulp, paper and paper products
Product categories [PC]:	PC23: Leather treatment products PC24: Lubricants, greases, release products PC26: Paper and board treatment products PC34: Textile dyes and impregnating products

Name of contributing environmental scenario and corresponding ERC	Bleaching agent: ERC6b: Industrial use of reactive processing aids Bleaching agent: ERC6b: Industrial use of reactive processing aids

List of names of contributing worker scenarios and corresponding PROCs	Bleaching agent: PROC1: Use in closed process, no likelihood of exposure Bleaching agent: PROC2: Use in closed, continuous process with occasional controlled exposure Bleaching agent: PROC3: Use in closed batch process (synthesis or formulation) Bleaching agent: PROC4: Use in batch and other process (synthesis) where opportunity for expos Bleaching agent: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve Bleaching agent: PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Bleaching agent: PROC9: Transfer of substance or mixture into small containers (dedicated fill

	Bleaching agent: PROC13: Treatment of articles by dipping and pouring Bleaching agent: PROC13: Treatment of articles by dipping and pouring Bleaching agent: PROC19: Hand-mixing with intimate contact and only PPE available Bleaching agent: PROC19: Hand-mixing with intimate contact and only PPE available Bleaching agent: PROC28: Manual maintenance (cleaning and repair) of machinery

2.1.Contributing exposure scenario controlling environmental exposure for: Bleaching agent

Environmental Release Category (ERC)	ERC6b: Industrial use of reactive processing aids

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount per site	24 tonnes/day
Annual amount per site	8720 t(onnes)/year

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m³/d):	18.000 m3/d
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant
Flow rate of receiving surface water.:	

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,01 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0,01 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	0,9 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to air: 2,4 kg/day Release rate applicable to water: 216 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	2.000 m3/d
Treatment effectiveness:	99,3 %
Sludge treatment technique:	sludge to soil
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.1.Contributing exposure scenario controlling environmental exposure for: Bleaching agent

Environmental Release Category (ERC)	ERC6b: Industrial use of reactive processing aids

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount per site	1,35 tonnes/day
Annual amount per site	405 t(onnes)/year

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m³/d):	18.000 m3/d
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant
Flow rate of receiving surface water.:	

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0,01 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	0,9 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to air: 13,5 kg/day Release rate applicable to water: 12,15 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	2.000 m3/d
Treatment effectiveness:	99,3 %
Sludge treatment technique:	sludge to soil
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the substance in a mixture:	60 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use			3	

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	eye exposure	Use suitable eye protection.		

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the substance in a mixture:	60 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the substance in a mixture:	60 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.5. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for expos

Product characteristics

Concentration of the substance in a mixture:	60 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.6. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	60 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.7. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities

Product characteristics

Concentration of the substance in a mixture:	60 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	95 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.8. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	60 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.9. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC13: Treatment of articles by dipping and pouring

Product characteristics

Concentration of the substance in a mixture:	60 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.10. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC13: Treatment of articles by dipping and pouring

Product characteristics

Concentration of the substance in a mixture:	60 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	80 %	
	Inhalation exposure	Use respiratory protection.	95 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.11. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC19: Hand-mixing with intimate contact and only PPE available

Product characteristics

Concentration of the substance in a mixture:	60 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Hand-mixing with intimate contact and only PPE available:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Hand-mixing with intimate contact and only PPE available:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.12. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC19: Hand-mixing with intimate contact and only PPE available

Product characteristics

Concentration of the substance in a mixture:	60 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Hand-mixing with intimate contact and only PPE available:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Hand-mixing with intimate contact and only PPE available:	eye exposure	Use suitable eye protection.		
		Use respiratory protection.	95 %	
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.13. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC28: Manual maintenance (cleaning and repair) of machinery

Product characteristics

Concentration of the substance in a mixture:	60 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Manual maintenance (cleaning and repair) of machinery:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Manual maintenance (cleaning and repair) of machinery:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Bleaching agent:

ERC6b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,0297 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use., Other measured data	none
Fresh water	0,079 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,00788 mg/L	< 1	Qualitative approach used to conclude safe use.	none
Marine sediments	0,03 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
agricultural soil	0,0003096 mg/kg dry weight	0,712	EUSES v2.1.2	none
Sewage treatment plant	0,756 mg/L	< 1	Qualitative approach used to conclude safe use.	none
Humans via the environment	0,000683 mg/m³	< 0,01	EUSES v2.1.2	none
Fresh water	0,01 mg/ml	< 1	Qualitative approach used to conclude safe use., Other measured data	none
freshwater sediment	0,036 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use., Other measured data	none

Bleaching agent:

ERC6b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,029 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00767 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000744 mg/L	0,286	EUSES v2.1.2	none
Marine sediments	0,0028 mg/kg dry weight	0,286	EUSES v2.1.2	none
agricultural soil	0,000656 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Sewage treatment plant	0,043 mg/L	0,133	EUSES v2.1.2	none
Humans via the environment	0,0031 mg/m³	0,015	EUSES v2.1.2	none

Health:

Bleaching agent:

PROC1:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,008 mg/m³	< 0,01	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,03 mg/m³	0,01	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC2:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,085 mg/m³	0,061	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,34 mg/m³	0,113	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC3:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,26 mg/m³	0,186	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,02 mg/m³	0,34	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC4:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,43 mg/m³	0,307	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,7 mg/m³	0,567	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,85 mg/m³	0,607	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2 mg/m³	0,667	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,21 mg/m³	0,15	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,85 mg/m³	0,283	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,425 mg/m³	0,304	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,7 mg/m³	0,567	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC13:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,85 mg/m³	0,607	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,2 mg/m³	0,733	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC13:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,43 mg/m³	0,307	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,7 mg/m³	0,567	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC19:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,85 mg/m³	0,607	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,2 mg/m³	0,733	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC19:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,43 mg/m³	0,307	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,7 mg/m³	0,567	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC28:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,21 mg/m³	0,15	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,85 mg/m³	0,283	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario V.

Exposure scenario worker

1.Use in metal finishing or electronic industry

List of use descriptors	
Life Cycle Stage	Use at industrial sites
Sector(s) of use	SU3: Industrial uses: Uses of substances as such or in preparations at indu SU14: Manufacture of basic metals, including alloys SU15: Manufacture of fabricated metal products, except machinery and equipme SU16: Manufacture of computer, electronic and optical products, electrical e SU17: General manufacturing, e.g. machinery, equipment, vehicles, other tran
Product categories [PC]:	PC14: Metal surface treatment products PC15: Non-metal surface treatment products PC25: Metal working fluids PC33: Semiconductors

Name of contributing environmental scenario and corresponding ERC	Use in metal finishing or electronic industry: ERC6b: Industrial use of reactive processing aids

List of names of contributing worker scenarios and corresponding PROCs	Use in metal finishing or electronic industry: PROC1: Use in closed process, no likelihood of exposure Use in metal finishing or electronic industry: PROC2: Use in closed, continuous process with occasional controlled exposure Use in metal finishing or electronic industry: PROC3: Use in closed batch process (synthesis or formulation) Use in metal finishing or electronic industry: PROC4: Use in batch and other process (synthesis) where opportunity for expos Use in metal finishing or electronic industry: PROC7: Industrial spraying Use in metal finishing or electronic industry: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve Use in metal finishing or electronic industry:

	PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve Use in metal finishing or electronic industry: PROC9: Transfer of substance or mixture into small containers (dedicated fill Use in metal finishing or electronic industry: PROC13: Treatment of articles by dipping and pouring Use in metal finishing or electronic industry: PROC13: Treatment of articles by dipping and pouring Use in metal finishing or electronic industry: PROC15: Use as laboratory reagent Use in metal finishing or electronic industry: PROC22: Manufacturing and processing of minerals and/or metals at substantiall Use in metal finishing or electronic industry: PROC23: Open processing and transfer operations with minerals/metals at elevat Use in metal finishing or electronic industry: PROC28: Manual maintenance (cleaning and repair) of machinery

2.1.Contributing exposure scenario controlling environmental exposure for: Use in metal finishing or electronic industry

Environmental Release Category (ERC)	ERC6b: Industrial use of reactive processing aids

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount per site	3,3 tonnes/day
Annual amount per site	1010 t(onnes)/year

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	18.000 m3/d
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant
Flow rate of receiving surface water.:	

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0,1 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	0,5 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to air: 3,3 kg/day Release rate applicable to water: 16,5 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	2.000 m3/d
Treatment effectiveness:	99,3 %
Sludge treatment technique:	sludge to soil
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Use in metal finishing or electronic industry

Process Categories:	PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	**Frequency of use:**	**Remarks**
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	**Room size:**	**Temperature:**	**Ventilation rate**	**Remarks**
Indoor use			3	

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	**Route of Exposure**	**Protective Measures**	**Effectiveness**	**Remarks**
Use in closed process, no likelihood of exposure:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	eye exposure	Use suitable eye protection.		

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Use in metal finishing or electronic industry

Process Categories:	PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: Use in metal finishing or electronic industry

Process Categories:	PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C

Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.5. Contributing exposure scenario controlling worker exposure for: Use in metal finishing or electronic industry

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for expos

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.6. Contributing exposure scenario controlling worker exposure for: Use in metal finishing or electronic industry

Process Categories:	PROC7: Industrial spraying

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial spraying:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	95 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial spraying:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	95 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.7. Contributing exposure scenario controlling worker exposure for: Use in metal finishing or electronic industry

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV)	90 %	
	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.8. Contributing exposure scenario controlling worker exposure for: Use in metal finishing or electronic industry

Process Categories:	PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	95 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.9. Contributing exposure scenario controlling worker exposure for: Use in metal finishing or electronic industry

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.10. Contributing exposure scenario controlling worker exposure for: Use in metal finishing or electronic industry

Process Categories:	PROC13: Treatment of articles by dipping and pouring

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.11. Contributing exposure scenario controlling worker exposure for: Use in metal finishing or electronic industry

Process Categories:	PROC13: Treatment of articles by dipping and pouring

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	80 %	
	Inhalation exposure	Use respiratory protection.	95 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.12. Contributing exposure scenario controlling worker exposure for: Use in metal finishing or electronic industry

Process Categories:	PROC15: Use as laboratory reagent

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use as laboratory reagent:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use as laboratory reagent:	eye exposure	Use suitable eye protection.		
		Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.13. Contributing exposure scenario controlling worker exposure for: Use in metal finishing or electronic industry

Process Categories:	PROC22: Manufacturing and processing of minerals and/or metals at substantiall

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	150 °C

Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
PROC22:	Inhalation exposure	Use closed systems.	99 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
PROC22:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.14. Contributing exposure scenario controlling worker exposure for: Use in metal finishing or electronic industry

Process Categories:	PROC23: Open processing and transfer operations with minerals/metals at elevat

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	150 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Open processing and transfer operations with minerals/metals at elevat:	Inhalation exposure	Local exhaust ventilation (LEV)	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Open processing and transfer operations with minerals/metals at elevat:	eye exposure	Use suitable eye protection.		
		Use respiratory protection.	95 %	
		Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.15. Contributing exposure scenario controlling worker exposure for: Use in metal finishing or electronic industry

Process Categories:	PROC28: Manual maintenance (cleaning and repair) of machinery

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Manual maintenance (cleaning and repair) of machinery:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Manual maintenance (cleaning and repair) of machinery:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Use in metal finishing or electronic industry:

ERC6b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,035 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00919 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000897 mg/L	0,345	EUSES v2.1.2	none
Marine sediments	0,00373 mg/kg dry weight	0,345	EUSES v2.1.2	none
agricultural soil	0,000321 mg/kg dry weight	0,748	EUSES v2.1.2	none
Sewage treatment plant	0,058 mg/L	0,18	EUSES v2.1.2	none
Humans via the environment	0,000788 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Use in metal finishing or electronic industry:

PROC1:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,013 mg/m³	< 0,01	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,05 mg/m³	0,017	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in metal finishing or electronic industry:

PROC2:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,128 mg/m³	0,091	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,51 mg/m³	0,17	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in metal finishing or electronic industry:

PROC3:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,38 mg/m³	0,271	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,53 mg/m³	0,51	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in metal finishing or electronic industry:

PROC4:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,64 mg/m³	0,457	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in metal finishing or electronic industry:

PROC7:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1 mg/m³	0,227	Used ART model.	none
Worker - inhalative, short-term - local		1 mg/m³	0,425	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in metal finishing or electronic industry:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,28 mg/m³	0,914	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2 mg/m³	0,667	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in metal finishing or electronic industry:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,32 mg/m³	0,229	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,28 mg/m³	0,427	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in metal finishing or electronic industry:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,638 mg/m³	0,456	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in metal finishing or electronic industry:

PROC13:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,28 mg/m³	0,914	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2 mg/m³	0,667	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in metal finishing or electronic industry:

PROC13:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,63 mg/m³	0,45	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in metal finishing or electronic industry:

PROC15:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,64 mg/m³	0,457	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in metal finishing or electronic industry:

PROC22:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,68 mg/m³	0,486	Used ART model.	none
Worker - inhalative, short-term - local		0,68 mg/m³	0,227	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in metal finishing or electronic industry:

PROC23:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,15 mg/m³	0,821	Used ART model.	none
Worker - inhalative, short-term - local		1,15 mg/m³	0,383	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in metal finishing or electronic industry:

PROC28:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,32 mg/m³	0,229	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,28 mg/m³	0,427	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario VI.

Exposure scenario worker

1.Production of chemically modified foodstuff

List of use descriptors	
Life Cycle Stage	Use at industrial sites
Sector(s) of use	SU3: Industrial uses: Uses of substances as such or in preparations at indu SU4: Manufacture of food products
Product categories [PC]:	

Name of contributing environmental scenario and corresponding ERC	Production of chemically modified foodstuff: ERC6b: Industrial use of reactive processing aids

List of names of contributing worker scenarios and corresponding PROCs	Production of chemically modified foodstuff: PROC1: Use in closed process, no likelihood of exposure Production of chemically modified foodstuff: PROC2: Use in closed, continuous process with occasional controlled exposure Production of chemically modified foodstuff: PROC3: Use in closed batch process (synthesis or formulation) Production of chemically modified foodstuff: PROC4: Use in batch and other process (synthesis) where opportunity for expos Production of chemically modified foodstuff: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve Production of chemically modified foodstuff: PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Production of chemically modified foodstuff: PROC9: Transfer of substance or mixture into small containers (dedicated fill Production of chemically modified foodstuff: PROC15: Use as laboratory reagent Production of chemically modified foodstuff: PROC28: Manual maintenance (cleaning and repair) of machinery

2.1.Contributing exposure scenario controlling environmental exposure for: Production of chemically modified foodstuff

Environmental Release Category (ERC)	ERC6b: Industrial use of reactive processing aids

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount per site	3,3 tonnes/day
Annual amount per site	1010 t(onnes)/year

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	18.000 m3/d
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant
Flow rate of receiving surface water.:	

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0,1 %	-	Percentage released into the soil by the process (release rate according to RMM)

		-	-	0,5 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to air: 3,3 kg/day Release rate applicable to water: 16,5 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	2.000 m3/d
Treatment effectiveness:	99,3 %
Sludge treatment technique:	sludge to soil
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Production of chemically modified foodstuff

Process Categories:	PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use			3	

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	eye exposure	Use suitable eye protection.		

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Production of chemically modified foodstuff

Process Categories:	PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: Production of chemically modified foodstuff

Process Categories:	PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.5. Contributing exposure scenario controlling worker exposure for: Production of chemically modified foodstuff

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for expos

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.6. Contributing exposure scenario controlling worker exposure for: Production of chemically modified foodstuff

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV)	90 %	
	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.7. Contributing exposure scenario controlling worker exposure for: Production of chemically modified foodstuff

Process Categories:	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	95 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.8. Contributing exposure scenario controlling worker exposure for: Production of chemically modified foodstuff

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.9. Contributing exposure scenario controlling worker exposure for: Production of chemically modified foodstuff

Process Categories:	PROC15: Use as laboratory reagent

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use as laboratory reagent:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use as laboratory reagent:	eye exposure	Use suitable eye protection.		
		Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.10. Contributing exposure scenario controlling worker exposure for: Production of chemically modified foodstuff

Process Categories:	PROC28: Manual maintenance (cleaning and repair) of machinery

Product characteristics

Concentration of the substance in a mixture:	90 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Manual maintenance (cleaning and repair) of machinery:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Manual maintenance (cleaning and repair) of machinery:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Production of chemically modified foodstuff:

ERC6b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,035 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00919 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000897 mg/L	0,345	EUSES v2.1.2	none
Marine sediments	0,00373 mg/kg dry weight	0,345	EUSES v2.1.2	none
agricultural soil	0,000321 mg/kg dry weight	0,748	EUSES v2.1.2	none

Sewage treatment plant	0,058 mg/L	0,18	EUSES v2.1.2	none
Humans via the environment	0,000788 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Production of chemically modified foodstuff:

PROC1:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,013 mg/m³	< 0,01	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,05 mg/m³	0,017	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Production of chemically modified foodstuff:

PROC2:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,128 mg/m³	0,091	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,51 mg/m³	0,17	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Production of chemically modified foodstuff:

PROC3:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,38 mg/m³	0,271	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,53 mg/m³	0,51	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Production of chemically modified foodstuff:

PROC4:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,64 mg/m³	0,457	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Production of chemically modified foodstuff:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,28 mg/m³	0,914	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2 mg/m³	0,667	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Production of chemically modified foodstuff:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,32 mg/m³	0,229	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,28 mg/m³	0,427	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Production of chemically modified foodstuff:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,638 mg/m³	0,456	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Production of chemically modified foodstuff:

PROC15:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,64 mg/m³	0,457	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,55 mg/m³	0,85	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Production of chemically modified foodstuff:

PROC28:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,32 mg/m³	0,229	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,28 mg/m³	0,427	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario VII.

Exposure scenario worker

1.Industrial use of water treatment products

List of use descriptors	
Life Cycle Stage	Use at industrial sites
Sector(s) of use	SU3: Industrial uses: Uses of substances as such or in preparations at indu SU2a: Mining (without offshore industries) SU8: Manufacture of bulk, large scale chemicals (including petroleum produc SU23: Recycling
Product categories [PC]:	PC20: Processing aids such as pH-regulators, flocculants, precipitants, neut PC37: Use in water treatment agents

Name of contributing environmental	Industrial use of water treatment products:

scenario and corresponding ERC	ERC6b: Industrial use of reactive processing aids

List of names of contributing worker scenarios and corresponding PROCs	Industrial use of water treatment products: PROC1: Use in closed process, no likelihood of exposure Industrial use of water treatment products: PROC2: Use in closed, continuous process with occasional controlled exposure Industrial use of water treatment products: PROC3: Use in closed batch process (synthesis or formulation) Industrial use of water treatment products: PROC4: Use in batch and other process (synthesis) where opportunity for expos Industrial use of water treatment products: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve Industrial use of water treatment products: PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve Industrial use of water treatment products: PROC9: Transfer of substance or mixture into small containers (dedicated fill Industrial use of water treatment products: PROC28: Manual maintenance (cleaning and repair) of machinery Industrial use of water treatment products: PROC2: Use in closed, continuous process with occasional controlled exposure Industrial use of water treatment products: PROC3: Use in closed batch process (synthesis or formulation) Industrial use of water treatment products: PROC4: Use in batch and other process (synthesis) where opportunity for expos Industrial use of water treatment products: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve Industrial use of water treatment products: PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve Industrial use of water treatment products:

	PROC9: Transfer of substance or mixture into small containers (dedicated fill

2.1.Contributing exposure scenario controlling environmental exposure for: Industrial use of water treatment products

Environmental Release Category (ERC)	ERC6b: Industrial use of reactive processing aids

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount per site	0,33 tonnes/day
Annual amount per site	5 t(onnes)/year

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m³/d):	18.000 m3/d
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant
Flow rate of receiving surface water.:	

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)

		-	0,025 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	5 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to air: 0,33 kg/day Release rate applicable to water: 16,5 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	2.000 m3/d
Treatment effectiveness:	99,3 %
Sludge treatment technique:	sludge to soil
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Industrial use of water treatment products

Process Categories:	PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use			3	

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	eye exposure	Use suitable eye protection.		

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Industrial use of water treatment products

Process Categories:	PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: Industrial use of water treatment products

Process Categories:	PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.5. Contributing exposure scenario controlling worker exposure for: Industrial use of water treatment products

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for expos

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.6. Contributing exposure scenario controlling worker exposure for: Industrial use of water treatment products

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.7. Contributing exposure scenario controlling worker exposure for: Industrial use of water treatment products

Process Categories:	PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	95 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.8. Contributing exposure scenario controlling worker exposure for: Industrial use of water treatment products

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.9. Contributing exposure scenario controlling worker exposure for: Industrial use of water treatment products

Process Categories:	PROC28: Manual maintenance (cleaning and repair) of machinery

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Manual maintenance (cleaning and repair) of machinery:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Manual maintenance (cleaning and repair) of machinery:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.10. Contributing exposure scenario controlling worker exposure for: Industrial use of water treatment products

Process Categories:	PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

This information is not available.

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.11. Contributing exposure scenario controlling worker exposure for: Industrial use of water treatment products

Process Categories:	PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa

Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
		Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.12. Contributing exposure scenario controlling worker exposure for: Industrial use of water treatment products

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for expos

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

This information is not available.

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.13. Contributing exposure scenario controlling worker exposure for: Industrial use of water treatment products

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid

Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

This information is not available.

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Inhalation exposure	Use respiratory protection.	90 %	
	Dermal	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.14. Contributing exposure scenario controlling worker exposure for: Industrial use of water treatment products

Process Categories:	PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	not relevant
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

This information is not available.

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.15. Contributing exposure scenario controlling worker exposure for: Industrial use of water treatment products

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid

Vapour pressure:	299 Pa
Process temperature:	not relevant
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

This information is not available.

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Industrial use of water treatment products:

ERC6b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,035 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00919 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000897 mg/L	0,345	EUSES v2.1.2	none
Marine sediments	0,00373 mg/kg dry weight	0,345	EUSES v2.1.2	none
agricultural soil	0,00021 mg/kg dry weight	0,489	EUSES v2.1.2	none
Sewage treatment plant	0,058 mg/L	0,18	EUSES v2.1.2	none

Humans via the environment	0,000022 7 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Industrial use of water treatment products:

PROC1:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,007 mg/m³	< 0,01	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,028 mg/m³	< 0,01	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Industrial use of water treatment products:

PROC2:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,14 mg/m³	0,1	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,83 mg/m³	0,943	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Industrial use of water treatment products:

PROC3:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,043 mg/m³	0,03	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,85 mg/m³	0,283	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Industrial use of water treatment products:

PROC4:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,071 mg/m³	0,051	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,42 mg/m³	0,473	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Industrial use of water treatment products:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,14 mg/m³	0,1	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2 mg/m³	0,667	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Industrial use of water treatment products:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,036 mg/m³	0,026	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,71 mg/m³	0,237	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Industrial use of water treatment products:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,071 mg/m³	0,051	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,42 mg/m³	0,473	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Industrial use of water treatment products:

PROC28:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,036 mg/m³	0,026	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,71 mg/m³	0,237	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Industrial use of water treatment products:

PROC2:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,099 mg/m³	0,071	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Industrial use of water treatment products:

PROC2:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,03 mg/m³	0,021	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,59 mg/m³	0,197	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Industrial use of water treatment products:

PROC4:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,049 mg/m³	0,035	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,99 mg/m³	0,33	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Industrial use of water treatment products:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,099 mg/m³	0,071	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Industrial use of water treatment products:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,049 mg/m³	0,035	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,99 mg/m³	0,33	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Industrial use of water treatment products:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,049 mg/m³	0,035	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,99 mg/m³	0,33	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario VIII.

Exposure scenario worker

1.Use as a fuel

List of use descriptors	
Life Cycle Stage	Use at industrial sites
Sector(s) of use	SU3: Industrial uses: Uses of substances as such or in preparations at indu : aerospace industry
Product categories [PC]:	PC13: Fuels

Name of contributing environmental scenario and corresponding ERC	Use as a fuel: ERC6b: Industrial use of reactive processing aids

List of names of contributing worker scenarios and corresponding PROCs	Use as a fuel: PROC1: Use in closed process, no likelihood of exposure Use as a fuel: PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve Use as a fuel: PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use as a fuel: PROC1: Use in closed process, no likelihood of exposure Use as a fuel: PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities

2.1.Contributing exposure scenario controlling environmental exposure for: Use as a fuel

Environmental Release Category (ERC)	ERC6b: Industrial use of reactive processing aids

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.

Dynamic viscosity:	This information is not available.

Amounts used

Daily amount per site	10 tonnes/day
Annual amount per site	1000 t(onnes)/year

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m³/d):	18.000 m3/d
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant
Flow rate of receiving surface water.:	

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0,025 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	5 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to air: 10 kg/day Release rate applicable to water: 500 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	2.000 m3/d
Treatment effectiveness:	100 %
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Use as a fuel

Process Categories:	PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the substance in a mixture:	100 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use			3	

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	eye exposure	Use suitable eye protection.		

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Use as a fuel

Process Categories:	PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	100 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	95 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: Use as a fuel

Process Categories:	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities

Product characteristics

Concentration of the substance in a mixture:	100 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Inhalation exposure	Use respiratory protection.	90 %	
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.5. Contributing exposure scenario controlling worker exposure for: Use as a fuel

Process Categories:	PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the substance in a mixture:	100 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

This information is not available.

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	eye exposure	Use suitable eye protection.		
	Dermal exposure	If opportunity for skin contact occurs, wear gloves (EN 374) for protection. Change gloves, if contamination occurs or duration of activity exceeds break through time.		

Additional good practice advice beyond the REACH CSA

This information is not available.

2.6. Contributing exposure scenario controlling worker exposure for: Use as a fuel

Process Categories:	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities

Product characteristics

Concentration of the substance in a mixture:	100 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

This information is not available.

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Use as a fuel:

ERC6b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00341 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000319 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,00032 mg/kg dry weight	0,745	EUSES v2.1.2	none
Sewage treatment plant	0 mg/L	< 0,01	EUSES v2.1.2	none

Humans via the environment	0,000781 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Use as a fuel:

PROC1:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,014 mg/m³	0,01	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,057 mg/m³	0,019	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use as a fuel:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,354 mg/m³	0,253	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,417 mg/m³	0,472	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use as a fuel:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,709 mg/m³	0,506	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,835 mg/m³	0,945	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use as a fuel:

PROC1:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,00992 mg/m³	< 0,01	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,04 mg/m³	0,013	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use as a fuel:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,496 mg/m³	0,354	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,984 mg/m³	0,661	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario IX.

Exposure scenario worker

1.Use as chemical reagent in glow sticks

List of use descriptors	
Life Cycle Stage	Use at industrial sites
Sector(s) of use	SU3: Industrial uses: Uses of substances as such or in preparations at indu
Product categories [PC]:	

Name of contributing environmental scenario and corresponding ERC	Use as chemical reagent in glow sticks: ERC5: Industrial use resulting in inclusion into or onto a matrix

List of names of contributing worker scenarios and corresponding PROCs	Use as chemical reagent in glow sticks: PROC1: Use in closed process, no likelihood of exposure Use as chemical reagent in glow sticks: PROC5: Mixing or blending in batch processes

	Use as chemical reagent in glow sticks: PROC9: Transfer of substance or mixture into small containers (dedicated fill

2.1.Contributing exposure scenario controlling environmental exposure for: Use as chemical reagent in glow sticks

Environmental Release Category (ERC)	ERC5: Industrial use resulting in inclusion into or onto a matrix

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount per site	5 tonnes/day
Annual amount per site	100 t(onnes)/year

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	18.000 m3/d
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant
Flow rate of receiving surface water.:	

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	

		0 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	0 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to air: 0 kg/day Release rate applicable to water: 0 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	2.000 m3/d
Treatment effectiveness:	99,3 %
Sludge treatment technique:	sludge to soil
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Use as chemical reagent in glow sticks

Process Categories:	PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the substance in a mixture:	100 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use			3	

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	eye exposure	Use suitable eye protection.		

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Use as chemical reagent in glow sticks

Process Categories:	PROC5: Mixing or blending in batch processes

Product characteristics

Concentration of the substance in a mixture:	100 %

Physical form of the product:	liquid

Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Mixing or blending in batch processes:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Mixing or blending in batch processes:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: Use as chemical reagent in glow sticks

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	100 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Use as chemical reagent in glow sticks:

ERC5:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00341 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000319 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Use as chemical reagent in glow sticks:

PROC1:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,014 mg/m³	0,01	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,057 mg/m³	0,019	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use as chemical reagent in glow sticks:

PROC5:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,709 mg/m³	0,506	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,835 mg/m³	0,945	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use as chemical reagent in glow sticks:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,709 mg/m³	0,506	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,835 mg/m³	0,945	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario X.

Exposure scenario worker

1.Bleaching agent

List of use descriptors	
Life Cycle Stage	Widespread use by professional workers
Sector(s) of use	SU22: Professional uses: Public domain (administration, education, entertain SU5: Manufacture of textiles, leather, fur SU6a: Manufacture of wood and wood products SU6b: Manufacture of pulp, paper and paper products
Product categories [PC]:	PC23: Leather treatment products PC34: Textile dyes and impregnating products

Name of contributing environmental scenario and corresponding ERC	Bleaching agent: ERC8b: Wide dispersive indoor use of reactive substances in open systems

List of names of contributing worker scenarios and corresponding PROCs	Bleaching agent: PROC1: Use in closed process, no likelihood of exposure Bleaching agent: PROC2: Use in closed, continuous process with occasional controlled exposure Bleaching agent: PROC3: Use in closed batch process (synthesis or formulation) Bleaching agent: PROC4: Use in batch and other process (synthesis) where opportunity for expos Bleaching agent: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve Bleaching agent: PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve Bleaching agent: PROC9: Transfer of substance or mixture into small containers (dedicated fill Bleaching agent: PROC13: Treatment of articles by dipping and pouring Bleaching agent: PROC19: Hand-mixing with intimate contact and only PPE available

2.1.Contributing exposure scenario controlling environmental exposure for: Bleaching agent

Environmental Release Category (ERC)	ERC8b: Wide dispersive indoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,0011 tonnes/day

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0,01 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	0,9 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to air: 0,1 % Release rate applicable to water: 0,01 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	99,3 %
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use			3	

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	Dermal exposure	If opportunity for skin contact occurs, wear gloves (EN 374) for protection. Change gloves, if contamination occurs or duration of activity exceeds break through time.		

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	80 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	80 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.5. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for expos

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
		Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.6. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C

Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	95 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.7. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.8. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
		Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.9. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC13: Treatment of articles by dipping and pouring

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.10. Contributing exposure scenario controlling worker exposure for: Bleaching agent

Process Categories:	PROC19: Hand-mixing with intimate contact and only PPE available

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Hand-mixing with intimate contact and only PPE available:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Hand-mixing with intimate contact and only PPE available:	eye exposure	Use suitable eye protection.		
		Use respiratory protection.	95 %	
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Bleaching agent:

ERC8b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,00032 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,0000351 mg/L	< 0,01	EUSES v2.1.2	none

Humans via the environment	0,000018 9 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Bleaching agent:

PROC1:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,0049 mg/m³	< 0,01	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,02 mg/m³	< 0,01	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC2:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,496 mg/m³	0,354	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC2:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,297 mg/m³	0,212	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,19 mg/m³	0,397	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC4:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,496 mg/m³	0,354	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,62 mg/m³	0,443	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,48 mg/m³	0,827	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,496 mg/m³	0,354	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,496 mg/m³	0,354	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC13:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,496 mg/m³	0,354	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Bleaching agent:

PROC19:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,62 mg/m³	0,443	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,48 mg/m³	0,827	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario XI.

Exposure scenario worker

1.Soil remediation products

List of use descriptors	
Life Cycle Stage	Widespread use by professional workers
Sector(s) of use	SU22: Professional uses: Public domain (administration, education, entertain
Product categories [PC]:	

Name of contributing environmental scenario and corresponding ERC	Soil remediation products: ERC8e: Wide dispersive outdoor use of reactive substances in open systems

List of names of contributing worker scenarios and corresponding PROCs	Soil remediation products: PROC2: Use in closed, continuous process with occasional controlled exposure Soil remediation products:

	PROC3: Use in closed batch process (synthesis or formulation) Soil remediation products: PROC4: Use in batch and other process (synthesis) where opportunity for expos Soil remediation products: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve Soil remediation products: PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve Soil remediation products: PROC9: Transfer of substance or mixture into small containers (dedicated fill

2.1.Contributing exposure scenario controlling environmental exposure for: Soil remediation products

Environmental Release Category (ERC)	ERC8e: Wide dispersive outdoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,00136 tonnes/day

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m³/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	80 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,027 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	99,3 %
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

This information is not available.

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Soil remediation products

Process Categories:	PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
		Wear respiratory protection	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Soil remediation products

Process Categories:	PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: Soil remediation products

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for expos

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	**Frequency of use:**	**Remarks**
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	**Room size:**	**Temperature:**	**Ventilation rate**	**Remarks**
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	**Route of Exposure**	**Protective Measures**	**Effectiveness**	**Remarks**
Use in batch and other process (synthesis) where opportunity for expos:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.5. Contributing exposure scenario controlling worker exposure for: Soil remediation products

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

This information is not available.

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Inhalation exposure	Use respiratory protection.	95 %	
	Dermal	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.6. Contributing exposure scenario controlling worker exposure for: Soil remediation products

Process Categories:	PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	not relevant
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

This information is not available.

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.7. Contributing exposure scenario controlling worker exposure for: Soil remediation products

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

This information is not available.

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Soil remediation products:

ERC8e:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,00032 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,0000949 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Soil remediation products:

PROC2:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,049 mg/m³	0,035	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,99 mg/m³	0,33	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Soil remediation products:

PROC3:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,03 mg/m³	0,021	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,59 mg/m³	0,179	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Soil remediation products:

PROC4:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,099 mg/m³	0,071	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,984 mg/m³	0,661	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Soil remediation products:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,124 mg/m³	0,089	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,48 mg/m³	0,827	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Soil remediation products:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,099 mg/m³	0,071	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,984 mg/m³	0,661	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Soil remediation products:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,099 mg/m³	0,071	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,984 mg/m³	0,661	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario XII.

Exposure scenario worker

1.for use as an agricultural chemical

List of use descriptors	
Life Cycle Stage	Widespread use by professional workers
Sector(s) of use	SU22: Professional uses: Public domain (administration, education, entertain SU1: Agriculture, forestry, fishery
Product categories [PC]:	PC12: Fertilizers PC20: Processing aids such as pH-regulators, flocculants, precipitants, neut PC35: Washing and cleaning products PC37: Use in water treatment agents

Name of contributing environmental scenario and corresponding ERC	for use as an agricultural chemical: ERC8b: Wide dispersive indoor use of reactive substances in open systems for use as an agricultural chemical: ERC8e: Wide dispersive outdoor use of reactive substances in open systems

List of names of contributing worker scenarios and corresponding PROCs	for use as an agricultural chemical: PROC2: Use in closed, continuous process with occasional controlled exposure for use as an agricultural chemical: PROC4: Use in batch and other process (synthesis) where opportunity for expos for use as an agricultural chemical: PROC5: Mixing or blending in batch processes for use as an agricultural chemical: PROC5: Mixing or blending in batch processes for use as an agricultural chemical: PROC9: Transfer of substance or mixture into small containers (dedicated fill for use as an agricultural chemical: PROC10: Roller application or brushing for use as an agricultural chemical: PROC10: Roller application or brushing for use as an agricultural chemical:

	PROC11: Non industrial spraying for use as an agricultural chemical: PROC11: Non industrial spraying for use as an agricultural chemical: PROC13: Treatment of articles by dipping and pouring for use as an agricultural chemical: PROC13: Treatment of articles by dipping and pouring for use as an agricultural chemical: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve for use as an agricultural chemical: PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve

2.1.Contributing exposure scenario controlling environmental exposure for: for use as an agricultural chemical

Environmental Release Category (ERC)	ERC8b: Wide dispersive indoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,00136 tonnes/day

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m³/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	80 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,027 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	99,3 %
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

This information is not available.

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.1.Contributing exposure scenario controlling environmental exposure for: for use as an agricultural chemical

Environmental Release Category (ERC)	ERC8e: Wide dispersive outdoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,00136 tonnes/day

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m³/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	80 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,027 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	99,3 %
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

This information is not available.

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: for use as an agricultural chemical

Process Categories:	PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	80 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: for use as an agricultural chemical

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for expos

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	**Frequency of use:**	**Remarks**
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	**Route of Exposure**	**Protective Measures**	**Effectiveness**	**Remarks**
Use in batch and other process (synthesis) where opportunity for expos:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
		Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: for use as an agricultural chemical

Process Categories:	PROC5: Mixing or blending in batch processes

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Inhalation exposure	Use respiratory protection.	95 %	
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.5. Contributing exposure scenario controlling worker exposure for: for use as an agricultural chemical

Process Categories:	PROC5: Mixing or blending in batch processes

Further explanations:	
Other Process or activity:	Outdoor

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.6. Contributing exposure scenario controlling worker exposure for: for use as an agricultural chemical

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
		Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.7. Contributing exposure scenario controlling worker exposure for: for use as an agricultural chemical

Process Categories:	PROC10: Roller application or brushing

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.8. Contributing exposure scenario controlling worker exposure for: for use as an agricultural chemical

Process Categories:	PROC10: Roller application or brushing

Further explanations:	
Other Process or activity:	Outdoor

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Mixing or blending in batch processes:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Mixing or blending in batch processes:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.9. Contributing exposure scenario controlling worker exposure for: for use as an agricultural chemical

Process Categories:	PROC11: Non industrial spraying

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Roller application or brushing:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Roller application or brushing:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	95 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.10. Contributing exposure scenario controlling worker exposure for: for use as an agricultural chemical

Process Categories:	PROC11: Non industrial spraying

Further explanations:	
Other Process or activity:	Outdoor

Product characteristics

Concentration of the substance in a mixture:	1 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Non industrial spraying:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Non industrial spraying:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	95 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.11. Contributing exposure scenario controlling worker exposure for: for use as an agricultural chemical

Process Categories:	PROC13: Treatment of articles by dipping and pouring

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

This information is not available.

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Mixing or blending in batch processes:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.12. Contributing exposure scenario controlling worker exposure for: for use as an agricultural chemical

Process Categories:	PROC13: Treatment of articles by dipping and pouring

Further explanations:	
Other Process or activity:	Outdoor

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Roller application or brushing:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Roller application or brushing:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	95 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.13. Contributing exposure scenario controlling worker exposure for: for use as an agricultural chemical

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	1 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Non industrial spraying:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Non industrial spraying:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	95 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.14. Contributing exposure scenario controlling worker exposure for: for use as an agricultural chemical

Process Categories:	PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

for use as an agricultural chemical:

ERC8b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,00032 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,0000949 mg/L	< 0,01	EUSES v2.1.2	none

Humans via the environment	0,000018 9 mg/m³	< 0,01	EUSES v2.1.2	none

for use as an agricultural chemical:

ERC8e:

Compartment	**Predicted environmental concentration (PEC)**	**Risk characterisation ratio (RCR)**	**Method**	**Remarks**
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,00032 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,000094 9 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,000018 9 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

for use as an agricultural chemical:

PROC2:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,496 mg/m³	0,354	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

for use as an agricultural chemical:

PROC4:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,496 mg/m³	0,354	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

for use as an agricultural chemical:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,37 mg/m³	0,264	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,48 mg/m³	0,827	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

for use as an agricultural chemical:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,297 mg/m³	0,212	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

for use as an agricultural chemical:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,297 mg/m³	0,212	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

for use as an agricultural chemical:

PROC13:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,297 mg/m³	0,212	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

for use as an agricultural chemical:

PROC5:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,297 mg/m³	0,212	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

for use as an agricultural chemical:

PROC10:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,37 mg/m³	0,264	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,48 mg/m³	0,827	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

for use as an agricultural chemical:

PROC11:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,425 mg/m³	0,304	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,835 mg/m³	0,945	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

for use as an agricultural chemical:

PROC5:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,208 mg/m³	0,149	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,398 mg/m³	0,463	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

for use as an agricultural chemical:

PROC10:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,26 mg/m³	0,186	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,736 mg/m³	0,579	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

for use as an agricultural chemical:

PROC11:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,298 mg/m³	0,213	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,69 mg/m³	0,661	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

for use as an agricultural chemical:

PROC13:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,208 mg/m³	0,149	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,398 mg/m³	0,463	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario XIII.

Exposure scenario worker

1.Laboratory use

List of use descriptors	
Life Cycle Stage	Widespread use by professional workers
Sector(s) of use	SU22: Professional uses: Public domain (administration, education, entertain SU8: Manufacture of bulk, large scale chemicals (including petroleum produc SU9: Manufacture of fine chemicals
Product categories [PC]:	PC21: Laboratory chemicals

Name of contributing environmental scenario and corresponding ERC	Laboratory use: ERC8b: Wide dispersive indoor use of reactive substances in open systems

List of names of contributing worker scenarios and corresponding PROCs	Laboratory use: PROC15: Use as laboratory reagent

2.1.Contributing exposure scenario controlling environmental exposure for: Laboratory use

Environmental Release Category (ERC)	ERC8b: Wide dispersive indoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount for wide disperse uses	0 tonnes/day

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)

		-	0 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m^3/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	99,3 %
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Laboratory use

Process Categories:	PROC15: Use as laboratory reagent

Product characteristics

Concentration of the substance in a mixture:	35 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use as laboratory reagent:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	80 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use as laboratory reagent:	eye exposure	Use suitable eye protection.		
		Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Laboratory use:

ERC8b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none

Fresh water	0,00341 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000319 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Laboratory use:

PROC15:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,495 mg/m³	0,354	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario XIV.

Exposure scenario worker

1.Use in water treatment agents

List of use descriptors	
Life Cycle Stage	Widespread use by professional workers
Sector(s) of use	SU22: Professional uses: Public domain (administration, education, entertain SU2a: Mining (without offshore industries) SU8: Manufacture of bulk, large scale chemicals (including petroleum produc SU23: Electricity, steam, gas water supply and sewage treatment
Product categories [PC]:	PC20: Processing aids such as pH-regulators, flocculants, precipitants, neut PC37: Use in water treatment agents

Name of contributing environmental scenario and corresponding ERC	Use in water treatment agents: ERC8b: Wide dispersive indoor use of reactive substances in open systems Use in water treatment agents: ERC8e: Wide dispersive outdoor use of reactive substances in open systems

List of names of contributing worker scenarios and corresponding PROCs	Use in water treatment agents: PROC1: Use in closed process, no likelihood of exposure Use in water treatment agents: PROC2: Use in closed, continuous process with occasional controlled exposure Use in water treatment agents: PROC3: Use in closed batch process (synthesis or formulation) Use in water treatment agents: PROC4: Use in batch and other process (synthesis) where opportunity for expos Use in water treatment agents: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve Use in water treatment agents: PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use in water treatment agents:

	PROC9: Transfer of substance or mixture into small containers (dedicated fill

2.1.Contributing exposure scenario controlling environmental exposure for: Use in water treatment agents

Environmental Release Category (ERC)	ERC8b: Wide dispersive indoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,00136 tonnes/day

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)

		-	0 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,027 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	99,3 %
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

This information is not available.

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.1.Contributing exposure scenario controlling environmental exposure for: Use in water treatment agents

Environmental Release Category (ERC)	ERC8e: Wide dispersive outdoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,00136 tonnes/day

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)

		-	1 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,027 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	99,3 %
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

This information is not available.

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Use in water treatment agents

Process Categories:	PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use			3	

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	eye exposure	Use suitable eye protection.		

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Use in water treatment agents

Process Categories:	PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	80 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed, continuous process with occasional controlled exposure:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: Use in water treatment agents

Process Categories:	PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	80 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.5. Contributing exposure scenario controlling worker exposure for: Use in water treatment agents

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for expos

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.6. Contributing exposure scenario controlling worker exposure for: Use in water treatment agents

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	95 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.7. Contributing exposure scenario controlling worker exposure for: Use in water treatment agents

Process Categories:	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Local exhaust ventilation (LEV), Provide a basic standard of general ventilation (1 to 3 air changes per hour).	90 %	

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.8. Contributing exposure scenario controlling worker exposure for: Use in water treatment agents

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C

Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Inhalation exposure	Use respiratory protection.	90 %	
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Use in water treatment agents:

ERC8b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,00032 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,0000949 mg/L	< 0,01	EUSES v2.1.2	none

Humans via the environment	0,000018 9 mg/m³	< 0,01	EUSES v2.1.2	none

Use in water treatment agents:

ERC8e:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,00032 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,000094 9 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,000018 9 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Use in water treatment agents:

PROC1:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,007 mg/m³	< 0,01	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,029 mg/m³	< 0,01	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in water treatment agents:

PROC2:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,142 mg/m³	0,101	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,83 mg/m³	0,943	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in water treatment agents:

PROC3:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,085 mg/m³	0,061	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,7 mg/m³	0,567	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in water treatment agents:

PROC4:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,14 mg/m³	0,1	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,83 mg/m³	0,943	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in water treatment agents:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,177 mg/m³	0,126	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,45 mg/m³	0,483	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in water treatment agents:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,14 mg/m³	0,1	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,83 mg/m³	0,943	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in water treatment agents:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,14 mg/m³	0,1	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,83 mg/m³	0,943	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario XV.

Exposure scenario worker

1.Use in cleaning agents

List of use descriptors	
Life Cycle Stage	Widespread use by professional workers
Sector(s) of use	SU22: Professional uses: Public domain (administration, education, entertain
Product categories [PC]:	PC35: Washing and cleaning products

Name of contributing environmental scenario and corresponding ERC	Use in cleaning agents: ERC8b: Wide dispersive indoor use of reactive substances in open systems Use in cleaning agents: ERC8e: Wide dispersive outdoor use of reactive substances in open systems

List of names of contributing worker	Use in cleaning agents:

scenarios and corresponding PROCs	PROC4: Use in batch and other process (synthesis) where opportunity for expos Use in cleaning agents: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve Use in cleaning agents: PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve Use in cleaning agents: PROC9: Transfer of substance or mixture into small containers (dedicated fill Use in cleaning agents: PROC10: Roller application or brushing Use in cleaning agents: PROC11: Non industrial spraying Use in cleaning agents: PROC13: Treatment of articles by dipping and pouring Use in cleaning agents: PROC19: Hand-mixing with intimate contact and only PPE available

2.1.Contributing exposure scenario controlling environmental exposure for: Use in cleaning agents

Environmental Release Category (ERC)	ERC8b: Wide dispersive indoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,000341 tonnes/day

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m³/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,00682 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	99,3 %
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.1.Contributing exposure scenario controlling environmental exposure for: Use in cleaning agents

Environmental Release Category (ERC)	ERC8e: Wide dispersive outdoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,000341 tonnes/day

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	1 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,00682 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges	
Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	99,3 %
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

This information is not available.

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Use in cleaning agents

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for expos

Product characteristics

Concentration of the substance in a mixture:	12 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C

Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in batch and other process (synthesis) where opportunity for expos:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Use in cleaning agents

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	12 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: Use in cleaning agents

Process Categories:	PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	12 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.5. Contributing exposure scenario controlling worker exposure for: Use in cleaning agents

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	12 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.6. Contributing exposure scenario controlling worker exposure for: Use in cleaning agents

Process Categories:	PROC10: Roller application or brushing

Product characteristics

Concentration of the substance in a mixture:	12 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Roller application or brushing:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Roller application or brushing:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.7. Contributing exposure scenario controlling worker exposure for: Use in cleaning agents

Process Categories:	PROC11: Non industrial spraying

Product characteristics

Concentration of the substance in a mixture:	12 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Non industrial spraying:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Non industrial spraying:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.8. Contributing exposure scenario controlling worker exposure for: Use in cleaning agents

Process Categories:	PROC13: Treatment of articles by dipping and pouring

Product characteristics

Concentration of the substance in a mixture:	12 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Treatment of articles by dipping and pouring:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.9. Contributing exposure scenario controlling worker exposure for: Use in cleaning agents

Process Categories:	PROC19: Hand-mixing with intimate contact and only PPE available

Product characteristics

Concentration of the substance in a mixture:	12 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Hand-mixing with intimate contact and only PPE available:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Hand-mixing with intimate contact and only PPE available:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Use in cleaning agents:

ERC8b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000319 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,0000239 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Use in cleaning agents:

ERC8e:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none

Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000319 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,0000239 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Use in cleaning agents:

PROC4:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,16 mg/m³	0,829	Consexpo v4.1	none
Worker - inhalative, short-term - local		1,16 mg/m³	0,387	Consexpo v4.1	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in cleaning agents:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,16 mg/m³	0,829	Consexpo v4.1	none
Worker - inhalative, short-term - local		1,16 mg/m³	0,387	Consexpo v4.1	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in cleaning agents:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,16 mg/m³	0,829	Consexpo v4.1	none
Worker - inhalative, short-term - local		1,16 mg/m³	0,387	Consexpo v4.1	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in cleaning agents:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,16 mg/m³	0,829	Consexpo v4.1	none
Worker - inhalative, short-term - local		1,16 mg/m³	0,387	Consexpo v4.1	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in cleaning agents:

PROC10:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,07 mg/m³	0,764	Consexpo v4.1	none
Worker - inhalative, short-term - local		1,07 mg/m³	0,357	Consexpo v4.1	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in cleaning agents:

PROC11:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,002 mg/m³	< 0,01	Consexpo v4.1	none
Worker - inhalative, short-term - local		0,002 mg/m³	< 0,01	Consexpo v4.1	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in cleaning agents:

PROC13:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,16 mg/m³	0,829	Consexpo v4.1	none
Worker - inhalative, short-term - local		1,16 mg/m³	0,387	Consexpo v4.1	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in cleaning agents:

PROC19:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,16 mg/m³	0,829	Consexpo v4.1	none
Worker - inhalative, short-term - local		1,16 mg/m³	0,387	Consexpo v4.1	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario XVI.

Exposure scenario worker

1.Uses in cosmetics/personal care products, perfumes and fragrances

List of use descriptors	
Life Cycle Stage	Widespread use by professional workers
Sector(s) of use	SU22: Professional uses: Public domain (administration, education, entertain SU20: Health services
Product categories [PC]:	PC39: Cosmetics, personal care products

Name of contributing environmental scenario and corresponding ERC	Uses in cosmetics/personal care products, perfumes and fragrances: ERC8b: Wide dispersive indoor use of reactive substances in open systems

List of names of contributing worker scenarios and corresponding PROCs	

2.1.Contributing exposure scenario controlling environmental exposure for: Uses in cosmetics/personal care products, perfumes and fragrances

Environmental Release Category (ERC)	ERC8b: Wide dispersive indoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,000341 tonnes/day

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0 %	-	Percentage released into the soil by the process (release rate according to RMM)

		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,00682 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m^3/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	99,3 %
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Uses in cosmetics/personal care products, perfumes and fragrances:

ERC8b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000319 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,0000239 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario XVII.

Exposure scenario worker

1.Use in water treatment agents

List of use descriptors	
Life Cycle Stage	Widespread use by professional workers
Sector(s) of use	SU22: Professional uses: Public domain (administration, education, entertain
Product categories [PC]:	

Name of contributing environmental scenario and corresponding ERC	Use in water treatment agents: ERC8e: Wide dispersive outdoor use of reactive substances in open systems Use in water treatment agents: ERC8b: Wide dispersive indoor use of reactive substances in open systems

List of names of contributing worker scenarios and corresponding PROCs	Use in water treatment agents: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve Use in water treatment agents: PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve Use in water treatment agents: PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve Use in water treatment agents: PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve Use in water treatment agents: PROC9: Transfer of substance or mixture into small containers (dedicated fill Use in water treatment agents: PROC9: Transfer of substance or mixture into small containers (dedicated fill

2.1.Contributing exposure scenario controlling environmental exposure for: Use in water treatment agents

Environmental Release Category (ERC)	ERC8e: Wide dispersive outdoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,0011 tonnes/day

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	1 %	-	Percentage released into the soil by the process (release rate according to RMM)

		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,022 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m^3/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	99,3 %
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste
This information is not available.

Additional good practice advice beyond the REACH CSA
This information is not available.

2.1.Contributing exposure scenario controlling environmental exposure for: Use in water treatment agents

Environmental Release Category (ERC)	ERC8b: Wide dispersive indoor use of reactive substances in open systems

Product characteristics	
Concentration of the substance in a mixture:	
Physical state	
Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used	
Daily amount for wide disperse uses	0,0011 tonnes/day

Frequency and duration of use	
Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management	
Flow rate of receiving surface water (m³/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	**Emission days**	**Emission factors**			**Remarks**
		Air	**Soil**	**Water**	

		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,022 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	99,3 %
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Use in water treatment agents

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	80 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Use in water treatment agents

Process Categories:	PROC8a: Transfer of substance or preparation (charging/discharging) from/to ve

Further explanations:	
Other Process or activity:	Outdoor

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	**Frequency of use:**	**Remarks**
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	**Room size:**	**Temperature:**	**Ventilation rate**	**Remarks**
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	**Route of Exposure**	**Protective Measures**	**Effectiveness**	**Remarks**
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	80 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.4. Contributing exposure scenario controlling worker exposure for: Use in water treatment agents

Process Categories:	PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Inhalation exposure	Use respiratory protection.	90 %	
	Dermal exposure	Wear suitable gloves.	80 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.5. Contributing exposure scenario controlling worker exposure for: Use in water treatment agents

Process Categories:	PROC8b: Transfer of substance or preparation (charging/discharging) from/to ve

Further explanations:	
Other Process or activity:	Outdoor

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	**Frequency of use:**	**Remarks**
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	**Room size:**	**Temperature:**	**Ventilation rate**	**Remarks**
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

This information is not available.

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or preparation (charging/discharging) from/to ve:	eye exposure	Use suitable eye protection.		
	Inhalation exposure	Use respiratory protection.	90 %	
	Dermal exposure	Wear suitable gloves.	80 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.6. Contributing exposure scenario controlling worker exposure for: Use in water treatment agents

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Inhalation exposure	Use respiratory protection.	90 %	
	Dermal exposure	Wear suitable gloves.	80 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

2.7. Contributing exposure scenario controlling worker exposure for: Use in water treatment agents

Process Categories:	PROC9: Transfer of substance or mixture into small containers (dedicated fill

Further explanations:	
Other Process or activity:	Outdoor

Product characteristics

Concentration of the substance in a mixture:	50 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	**Frequency of use:**	**Remarks**
Duration	240 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	**Room size:**	**Temperature:**	**Ventilation rate**	**Remarks**
Outdoor use				

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

This information is not available.

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Transfer of substance or mixture into small containers (dedicated fill:	eye exposure	Use suitable eye protection.		
	Inhalation exposure	Use respiratory protection.	90 %	
	Dermal exposure	Wear suitable gloves.	80 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Use in water treatment agents:

ERC8e:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,00032 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none

agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,000077 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Use in water treatment agents:

ERC8b:

Compartment	**Predicted environmental concentration (PEC)**	**Risk characterisation ratio (RCR)**	**Method**	**Remarks**
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,00032 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,000077 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Use in water treatment agents:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		1,063 mg/m³	0,759	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,9 mg/m³	0,967	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in water treatment agents:

PROC8a:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,744 mg/m³	0,531	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,3 mg/m³	0,767	Used ART model.	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in water treatment agents:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,425 mg/m³	0,304	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,83 mg/m³	0,943	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in water treatment agents:

PROC8b:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,298 mg/m³	0,213	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in water treatment agents:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,425 mg/m³	0,304	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		2,83 mg/m³	0,943	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Use in water treatment agents:

PROC9:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,298 mg/m³	0,213	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,98 mg/m³	0,66	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario XVIII.

Exposure scenario worker

1.Sterilisation of medical equipment

List of use descriptors	
Life Cycle Stage	Widespread use by professional workers
Sector(s) of use	SU22: Professional uses: Public domain (administration, education, entertain
Product categories [PC]:	

Name of contributing environmental scenario and corresponding ERC	Sterilisation of medical equipment: ERC8b: Wide dispersive indoor use of reactive substances in open systems

List of names of contributing worker scenarios and corresponding PROCs	Sterilisation of medical equipment: PROC1: Use in closed process, no likelihood of exposure Sterilisation of medical equipment: PROC3: Use in closed batch process (synthesis or formulation)

2.1.Contributing exposure scenario controlling environmental exposure for: Sterilisation of medical equipment

Environmental Release Category (ERC)	ERC8b: Wide dispersive indoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,000275 tonnes/day

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m³/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,0055 kg/day

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 8 of the safety data sheet (Environmental exposure control

Technical onsite conditions and measures to reduce or limit discharges

Air	not relevant
Soil	not relevant
Water	not relevant
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	99,3 %
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for dis

This information is not available.

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Sterilisation of medical equipment

Process Categories:	PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the substance in a mixture:	100 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use			3	

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed process, no likelihood of exposure:	eye exposure	Use suitable eye protection.		
	Dermal exposure	If opportunity for skin contact occurs, wear gloves (EN 374) for protection. Change gloves, if contamination occurs or duration of activity exceeds break through time.		

Additional good practice advice beyond the REACH CSA

This information is not available.

2.3. Contributing exposure scenario controlling worker exposure for: Sterilisation of medical equipment

Process Categories:	PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the substance in a mixture:	100 %

Physical form of the product:	liquid
Vapour pressure:	299 Pa
Process temperature:	40 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Duration	480 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting workers exposure

Other relevant operational conditions:	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source to

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	Inhalation exposure	Provide a basic standard of general ventilation (1 to 3 air changes per hour).		

Organisational measures to prevent/limit releases, dispersion and expo

This information is not available.

Conditions and measures related to personal protection, hygiene and he

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Use in closed batch process (synthesis or formulation):	eye exposure	Use suitable eye protection.		
	Dermal exposure	Wear suitable gloves.	90 %	
	Inhalation exposure	Use respiratory protection.	90 %	

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Sterilisation of medical equipment:

ERC8b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000319 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,0000192 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Sterilisation of medical equipment:

PROC1:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,014 mg/m³	< 0,01	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		0,057 mg/m³	0,019	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

Sterilisation of medical equipment:

PROC3:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Worker - inhalative, long-term - local		0,452 mg/m³	0,304	ECETOC TRA worker v3	none
Worker - inhalative, short-term - local		1,701 mg/m³	0,567	ECETOC TRA worker v3	none
Worker - dermal, short-term - local			< 1	Qualitative approach used to conclude safe use.	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario XIX.

Exposure scenario consumer

1.Bleaching agent:

List of use descriptors	
Life Cycle Stage	Consumer use
Sector(s) of use	SU21: Consumer uses: Private households (= general public = consumers)
Product Categories:	:

Name of contributing environmental scenario and corresponding ERC	Bleaching agent: ERC8b: Wide dispersive indoor use of reactive substances in open systems

List of names of contributing worker scenarios and corresponding PROCs	Bleaching agent: : Bleaching agent: :

2.1.Contributing exposure scenario controlling environmental exposure for: Bleaching agent

Environmental Release Category (ERC)	ERC8b: Wide dispersive indoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity	
Kinematic viscosity	This information is not available.
Dynamic viscosity	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,00111 tonnes/day

Frequency and duration of use

Batch process	not relevant
Continuous process	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m³/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0,01 %	-	Percentage released into the soil by the process (release rate according to RMM)
		-	-	0,9 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,01 kg/day

Risk management measures (RMM)

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m³/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	sewage treatment plant
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

none

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling consumer exposure for: Bleaching agent

Product Categories:	PC34: Textile dyes and impregnating products

Product characteristics

Concentration of the substance in a mixture:	12 %

Physical form of the product:	liquid
Vapour pressure:	not relevant
Process temperature:	not relevant
Remarks	not relevant
Application:	not relevant

Amounts used

Amount per use	0,1 kg

Frequency and duration of use

	Use duration (h/d):	Frequency of use:	Remarks
Application		0,16h/event	
Application		1event / day	

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting consumers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use				

Other relevant operational conditions	not relevant

Risk management measures (RMM)

This information is not available.

Additional good practice advice beyond the REACH CSA

not relevant

2.3. Contributing exposure scenario controlling consumer exposure for: Bleaching agent

Product Categories:	PC23: Leather treatment products

Product characteristics

Concentration of the substance in a mixture:	12 %

Physical form of the product:	liquid
Vapour pressure:	not relevant
Process temperature:	not relevant
Remarks	not relevant
Application:	not relevant

Amounts used

Amount per use	0,1 kg

Frequency and duration of use

	Use duration (h/d):	Frequency of use:	Remarks
Application		0,16h/event	
Application		1event / day	

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting consumers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use				

Other relevant operational conditions	not relevant

Risk management measures (RMM)

This information is not available.

Additional good practice advice beyond the REACH CSA

not relevant

3. Exposure estimation and reference to its source

Environment:

Bleaching agent:

ERC8b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,00032 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,0000351 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Bleaching agent:

PC34:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Consumer - inhalative, long-term - local		0,02 mg/m³	0,095	EU RAR	none
Consumer - inhalative, short-term - local		0,13 mg/m³	0,067	EU RAR	none

Bleaching agent:

PC23:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Consumer - inhalative, long-term - local		0,02 mg/m³	0,095	EU RAR	none
Consumer - inhalative, short-term - local		0,13 mg/m³	0,067	EU RAR	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario XX.

Exposure scenario consumer

1.Use in water treatment agents:

List of use descriptors	
Life Cycle Stage	Consumer use
Sector(s) of use	SU21: Consumer uses: Private households (= general public = consumers)
Product Categories:	:

Name of contributing environmental scenario and corresponding ERC	Water treatment chemicals: ERC8b: Wide dispersive indoor use of reactive substances in open systems Water treatment chemicals: ERC8e: Wide dispersive outdoor use of reactive substances in open systems

List of names of contributing worker scenarios and corresponding PROCs	Water treatment chemicals: :

2.1.Contributing exposure scenario controlling environmental exposure for: Water treatment chemicals

Environmental Release Category (ERC)	ERC8b: Wide dispersive indoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity	
Kinematic viscosity	This information is not available.
Dynamic viscosity	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,00136 tonnes/day

Frequency and duration of use

Batch process	not relevant
Continuous process	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0 %	-	Percentage released into the soil by the process (release rate according to RMM)

		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,027 kg/day

Risk management measures (RMM)

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m^3/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	sewage treatment plant
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

none

Additional good practice advice beyond the REACH CSA

This information is not available.

2.1.Contributing exposure scenario controlling environmental exposure for: Water treatment chemicals

Environmental Release Category (ERC)	ERC8e: Wide dispersive outdoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity	
Kinematic viscosity	This information is not available.
Dynamic viscosity	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,00136 tonnes/day

Frequency and duration of use

Batch process	not relevant
Continuous process	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	1 %	-	Percentage released into the soil by the process (release rate according to RMM)

		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,027 kg/day

Risk management measures (RMM)

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m^3/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	sewage treatment plant
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

none

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling consumer exposure for: Water treatment chemicals

Product Categories:	:

Product characteristics

Concentration of the substance in a mixture:	12 %

Physical form of the product:	liquid
Vapour pressure:	not relevant
Process temperature:	not relevant
Remarks	not relevant
Application:	not relevant

Amounts used

Amount per use	2500 g/event

Frequency and duration of use

	Use duration (h/d):	**Frequency of use:**	**Remarks**
Application		9,6min/event	
Application		1event / day	
Exposure duration	45 s		
Application duration	18 s		

Human factors not influenced by risk management

bodyweight:	65 kg
Breathing volume:	34,7 m³/day

Other given operational conditions affecting consumers exposure

Area of use	**Room size:**	**Temperature:**	**Ventilation rate**	**Remarks**
Indoor use	1 m3		0,5	

Other relevant operational conditions	Mass transfer rate: 0,404 m/min

Risk management measures (RMM)

This information is not available.

Additional good practice advice beyond the REACH CSA

not relevant

3. Exposure estimation and reference to its source

Environment:

Water treatment chemicals:

ERC8b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,00032 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,0000949 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Water treatment chemicals:

ERC8e:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,00032 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,0000949 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Water treatment chemicals:

PC37:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Consumer - inhalative, long-term - local	Technical ventilation of workplace	0,065 mg/m³	0,308	ConsExpo v4.1	none
Consumer - inhalative, short-term - local	Technical ventilation of workplace	0,065 mg/m³	0,034	Consexpo v4.1	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.

Exposure Scenario XXI.

Exposure scenario consumer

1.Use in cleaning agents:

List of use descriptors	
Life Cycle Stage	Consumer use
Sector(s) of use	SU21: Consumer uses: Private households (= general public = consumers)
Product Categories:	:

Name of contributing environmental scenario and corresponding ERC	Use in cleaning agents: ERC8b: Wide dispersive indoor use of reactive substances in open systems Use in cleaning agents: ERC8e: Wide dispersive outdoor use of reactive substances in open systems

List of names of contributing worker scenarios and corresponding PROCs	Use in cleaning agents: : Use in cleaning agents: : Use in cleaning agents: :

2.1.Contributing exposure scenario controlling environmental exposure for: Use in cleaning agents

Environmental Release Category (ERC)	ERC8b: Wide dispersive indoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity	
Kinematic viscosity	This information is not available.
Dynamic viscosity	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,000341 tonnes/day

Frequency and duration of use

Batch process	not relevant
Continuous process	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	0 %	-	Percentage released into the soil by the process (release rate according to RMM)

		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,00682 kg/day

Risk management measures (RMM)

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m^3/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	sewage treatment plant
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

none

Additional good practice advice beyond the REACH CSA

This information is not available.

2.1.Contributing exposure scenario controlling environmental exposure for: Use in cleaning agents

Environmental Release Category (ERC)	ERC8e: Wide dispersive outdoor use of reactive substances in open systems

Product characteristics

Concentration of the substance in a mixture:	

Physical state	

Viscosity	
Kinematic viscosity	This information is not available.
Dynamic viscosity	This information is not available.

Amounts used

Daily amount for wide disperse uses	0,000341 tonnes/day

Frequency and duration of use

Batch process	not relevant
Continuous process	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m³/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
		0,1 %	-	-	Release fraction to air from process (initial release prior to RMM): Percentage released into the air by the process (release rate according to RMM)
		-	1 %	-	Percentage released into the soil by the process (release rate according to RMM)

		-	-	2 %	Release fraction to wastewater from process (initial release prior to RMM): Percentage released into the water by the process (release rate according to RMM)

Other relevant operational conditions	Release rate applicable to water: 0,00682 kg/day

Risk management measures (RMM)

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m^3/d):	
type:	sewage treatment plant
Discharge rate:	not relevant
Treatment effectiveness:	sewage treatment plant
Sludge treatment technique:	not relevant
Measures to limit air emissions:	not relevant
Remarks	not relevant

Conditions and measures related to external treatment of waste for dis

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Dispose of waste product or used containers according to local regulations.		

Conditions and measures related to external recovery of waste

none

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling consumer exposure for: Use in cleaning agents

Product Categories:	PC35: Washing and cleaning products

Product characteristics

Concentration of the substance in a mixture:	7 %

Physical form of the product:	liquid
Vapour pressure:	not relevant
Process temperature:	not relevant
Remarks	not relevant
Application:	not relevant

Amounts used

This information is not available.

Frequency and duration of use

	Use duration (h/d):	**Frequency of use:**	**Remarks**
Application		0,16h/event	
Application		1event / day	
Application duration	25 s		
Exposure duration	10 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting consumers exposure

Area of use	**Room size:**	**Temperature:**	**Ventilation rate**	**Remarks**
Indoor use	15 m3		1,5	

Other relevant operational conditions	airborne fraction: 0,2

Risk management measures (RMM)

This information is not available.

Additional good practice advice beyond the REACH CSA

not relevant

2.3. Contributing exposure scenario controlling consumer exposure for: Use in cleaning agents

Product Categories:	PC35: Washing and cleaning products

Product characteristics

Concentration of the substance in a mixture:	7 %

Physical form of the product:	liquid
Vapour pressure:	not relevant
Process temperature:	not relevant
Remarks	not relevant
Application:	not relevant

Amounts used

Amount per use	0,4 kg

Frequency and duration of use

	Use duration (h/d):	**Frequency of use:**	**Remarks**
Application		1event / day	
Application duration	45 min		
Exposure duration	60 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting consumers exposure

Area of use	**Room size:**	**Temperature:**	**Ventilation rate**	**Remarks**
Indoor use	58 m3		1	

Other relevant operational conditions	Mass transfer rate: 0,404 m/min

Risk management measures (RMM)

This information is not available.

Additional good practice advice beyond the REACH CSA
not relevant

2.4. Contributing exposure scenario controlling consumer exposure for: Use in cleaning agents

Product Categories:	PC35: Washing and cleaning products

Product characteristics

Concentration of the substance in a mixture:	12 %

Physical form of the product:	liquid
Vapour pressure:	not relevant
Process temperature:	not relevant
Remarks	not relevant
Application:	not relevant

Amounts used

Amounts used	0,2 kg

Frequency and duration of use

	Use duration (h/d):	**Frequency of use:**	**Remarks**
Application		1event / day	
Application duration	2 min		
Exposure duration	5 min		

Human factors not influenced by risk management

This information is not available.

Other given operational conditions affecting consumers exposure

Area of use	**Room size:**	**Temperature:**	**Ventilation rate**	**Remarks**
Indoor use	2,5 m3		2	

Other relevant operational conditions	Mass transfer rate: 0,404 m/min

Risk management measures (RMM)

This information is not available.

Additional good practice advice beyond the REACH CSA

not relevant

3. Exposure estimation and reference to its source

Environment:

Use in cleaning agents:

ERC8b:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000319 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,0000239 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Use in cleaning agents:

ERC8e:

Compartment	Predicted environmental concentration (PEC)	Risk characterisation ratio (RCR)	Method	Remarks
freshwater sediment	0,013 mg/kg dry weight	< 1	Qualitative approach used to conclude safe use.	none
Fresh water	0,00342 mg/L	< 1	Qualitative approach used to conclude safe use.	none
marine water	0,000319 mg/L	0,123	EUSES v2.1.2	none
Marine sediments	0,0012 mg/kg dry weight	0,123	EUSES v2.1.2	none
agricultural soil	0,000209 mg/kg dry weight	0,488	EUSES v2.1.2	none
Sewage treatment plant	0,0000239 mg/L	< 0,01	EUSES v2.1.2	none
Humans via the environment	0,0000189 mg/m³	< 0,01	EUSES v2.1.2	none

Health:

Use in cleaning agents:

PC35:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Consumer - inhalative, long-term - local	Technical ventilation of workplace	0 mg/m³	< 0,01	ConsExpo v4.1	none
Consumer - inhalative, short-term - local	Technical ventilation of workplace	0,002 mg/m³	< 0,01	Consexpo v4.1	none

Use in cleaning agents:

PC35:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Consumer - inhalative, long-term - local	Technical ventilation of workplace	0,2 mg/m³	0,952	ConsExpo v4.1	none
Consumer - inhalative, short-term - local	Technical ventilation of workplace	1,07 mg/m³	0,554	Consexpo v4.1	none

Use in cleaning agents:

PC35:

Route of Exposure	Specific condition	Exposure level	Risk characterisation ratio (RCR)	Method	Remarks
Consumer - inhalative, long-term - local	Technical ventilation of workplace	0,2 mg/m³	0,952	ConsExpo v4.1	none
Consumer - inhalative, short-term - local	Technical ventilation of workplace	1,16 mg/m³	0,601	Consexpo v4.1	none

4. Guidance to Downstream User to evaluate whether he works inside the bo

This information is not available.