

SODIUM BISULPHITE 19-43%**Code : 16012****SECTION 1. Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Chemical description : Sodium bisulphite , Sodium hydrogen sulphite , solution (19-43%).
Type of product : Pure product in solution .
Reach registration number : 01-2119524563-42

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

Identified use(s) : See table on the front page of the annex.
Use(s) advised against : This product is not recommended for any industrial, professional or consumer use other than identified in table on the front page of the annex.
Not for use in ornamental articles, in tricks and jokes and in games (in accordance with Annex XVII to Regulation (EC) No 1907/2006) (3. Liquid substances or mixtures, which are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: (a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F, (b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10, (c) hazard class 4.1, (d) hazard class 5.1).

1.3. Details of the supplier of the safety data sheet

Company identification : BRENNTAG N.V. - Nijverheidslaan 38 - BE-8540 DEERLIJK
TEL: +32(0)56/77.69.44 - FAX: +32(0)56/77/57/11
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BRENNTAG Nederland B.V. - Donker Duyvisweg 44 - NL-3316 BM DORDRECHT
TEL: +31(0)78/65.44.944 - FAX: +31(0)78/65.44.919
E-MAIL: info@brenntag.nl - Website: www.brenntag.nl

1.4. Emergency telephone number

Emergency phone number : Belgium : Antipoison Center - Brussels
TEL: +32(0)70/245.245

The Netherlands : National Poisoning Information Center - Bilthoven
TEL: +31(0)30/274.88.88 (Only for the purpose of informing medical personnel in cases of acute intoxications)

SECTION 2. Hazards identification**2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Acute toxicity, oral - Category 4 - Warning (Acute Tox. 4, oral; H302)
Contact with acids liberates toxic gas (Acute Tox.; EUH031)

2.2. Label elements**Label in accordance with Regulation (EC) No 1272/2008**

- Dangerous ingredient(s) : Sodium bisulphite ... %
- Hazard pictogram(s)



- Signal word : Warning
- Hazard statements : H302 - Harmful if swallowed. EUH031 - Contact with acids liberates toxic gas.
- Precautionary statements

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SECTION 2. Hazards identification (continued)

- Prevention : P264 - Wash skin thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- Response : P301+P312 - IF SWALLOWED: Call a POISON CENTER/doctor/... if you feel unwell. P330 - Rinse mouth.
- Disposal considerations : P501 - Dispose of contents and/or container in accordance with local/regional/national/international regulation.

2.3. Other hazards

- * Physical/chemical hazards : The substance decomposes, by evaporation, by heating above 150 °C, in formation of toxic and corrosive vapours.
During the corrosion test on aluminium, the ammonium bisulfite solution sample showed signs of moderate corrosion.
- * Hazards for the health : Evaporates practically not at 20 °C, upon the release of sulfur dioxide, a health dangerous concentration in the air will be reached very quickly.
Skin contact may cause an eczema-like skin disorder on the basis of an allergic reaction.
- Hazards for the environment : No significant danger.
This product is no substance or contains no PBT or vPvB (in accordance with Annex XIII).
- Hazards for the safety : No significant danger.

SECTION 3. Composition/information on ingredients

3.1. Substances

Name component(s)	Weight %	CAS nr	EINECS nr	Index nr	Reach nr	CLASSIFICATION
Sodium bisulphite ...%	: 19 -43 %	7631-90-5	231-548-0	016-064-00-8	01-2119524563-42	Acute Tox. 4 (oral); H302 EUH031

The full text of the (EU)H-statements is in section 16.

Note B (Regulation (EC) No 1272/2008) applies to the product or one or more of its components.

SECTION 4. First aid measures

4.1. Description of first aid measures

- General : In case of doubt or persistent symptoms, call a physician.
Never give anything by mouth to an unconscious person.
- First Aid Measures
- Inhalation : Remove victim into fresh air.
Allow the affected person to rest in semi-sitting position.
If not breathing, give artificial respiration.
Consult a doctor.
- Skin Contact : Remove contaminated clothing.
Rinse skin abundantly with water and soap. (shower if necessary).
Consult doctor if irritation develops.
- Eye Contact : Rinse immediately thoroughly and long (at least 15 min.) with plenty of water.
Remove contact lenses.
Consult doctor in case of irritation.
- Ingestion : DO NOT INDUCE VOMITING. Rinse mouth with water.
Call a POISON CENTER or doctor/physician if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

SODIUM BISULPHITE 19-43%**Code : 16012****SECTION 4. First aid measures (continued)**

See section 11.

4.3. Indication of any immediate medical attention and special treatment needed

For specialist advice doctors should contact the NVIC or the Belgian Poison center.

SECTION 5. Firefighting measures**5.1. Extinguishing media**

Extinguishing Media

- Suitable : Extinguishing powder , Foam , Carbon dioxide (CO2) , Water spray .
- Insuitable : None .

5.2. Special hazards arising from the substance or mixture

Special Exposure Hazards : Fire may liberate toxic and stinging vapours. (E.g. Sulfur dioxide)

5.3. Advice for firefighters

- Special Protective Equipment for Firefighters : Use self-contained breathing apparatus and wear protective clothes when in close proximity to fire.
- Special Procedures : Apply water spray or fog to cool nearby equipment. Avoid fire-fighting water to enter environment.

SECTION 6. Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**Personal Precautions : Evacuate all personnel immediately and ventilate area.
Avoid breathing vapour and contact with skin, eyes and clothing. Wear recommended personal protective equipment. (See section 8)**6.2. Environmental precautions**Environmental Precautions : Shut off leaks if without risks.
Dike in the spilled product as much as possible with inert material.
Prevent entry of product in public water, sewers or soil.
Notify authorities if product enters sewers or public waters.**6.3. Methods and material for containment and cleaning up**Methods for Cleaning Up : Collect the spilled liquid in closable, suitable disposal containers.
Clean up any spills as soon as possible, using an inert absorbent material.
Residue is to be washed down with plenty of water.**6.4. Reference to other sections**For personal protection, see section 8.
For the removal of the waste product, see section 13.**SECTION 7. Handling and storage****7.1. Precautions for safe handling**Handling : AVOID FOG TRANSFORMATION !
Avoid breathing vapour and contact with skin, eyes and clothing.
Wear recommended personal protective equipment. (See section 8)
Wash hands before and after working with the product.
When using, do not eat, drink or smoke.
Emergency eye wash fountains and showers should be available in the immediate vicinity of any potential exposure.

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SECTION 7. Handling and storage (continued)

7.2. Conditions for safe storage, including any incompatibilities

Storage : Keep only in the original, safely locked container in a dry, cool, dark, well ventilated place.
 All dangerous products should be placed on a drip tray or should be barreled.
 Keep away from : Acids , Oxidizing agents .
 Storage temperature: 20 - 27 °C

Packaging Material : Stainless steel , Polyethylene .

Insuitable Packaging Material : Several metals .

7.3. Specific end use(s)

For identified uses, see subsection 1.2 and/or exposure scenarios.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits : Sodium bisulphite ...% : Limit value (BE) : 5 mg/m³ (2014)

Biological limit values : • Sodium bisulphite ...% : Biological limit values : They will be included when available.

DNELs : • Sodium bisulphite ...% : Worker, long-term - systemic effects, inhalation : 246 mg/m³
 • Sodium bisulphite ...% : Consumer, long-term - systemic effects, inhalation : 73 mg/m³
 • Sodium bisulphite ...% : Consumer, long-term - systemic effects, oral : 9,5 mg/kg

* PNECs : • Sodium bisulphite ...% : Fresh water : 1,09 mg/l
 • Sodium bisulphite ...% : Marine water : 0,11 mg/l
 • Sodium bisulphite ...% : Sewage treatment plant : 10,71 mg/l

8.2. Exposure controls

Engineering Measures : Ventilation (If possible through the floor), Local exhaust .

Personal Protection Equipment

- Respiratory protection : CE-approved mask for inorganic gases/vapours (type B, grey).

- Skin protection : Suitable protective clothing .

- Hand protection : Suitable material for safety gloves (EN 374):
 The suitability of the gloves and the breakthrough time for a specific workplace should be discussed with the producers of the protective gloves.
 - material : Nitril rubber
 - thickness : 0,35 mm
 - breakthrough time : > 480'

- Eye/Face protection : Closed safety glasses or face shield.

Environmental exposure controls : See sections 6, 7, 12 and 13.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

See technical data sheet for detailed information.

Physical State (20°C) : Liquid .

Form/Colour : Colourless to light yellow.

Odour : Sulphur-like odour .

Odour threshold : Not applicable.

pH value : 3,5 - 5

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* Melting/Freezing point	: < 2 °C
* Boiling Point/Range (1013 hPa)	: app. 98 °C
Flash point	: Not applicable.
Evaporation rate	: Not applicable.
Explosion limits in air	: Not applicable.
Vapour pressure	: No data available.
Relative vapour density (air=1)	: No data available.
Relative density of saturated vapour/air mixture (air=1)	: No data available.
* Density (20°C)	: 1,36 kg/l (42% Aqueous solution)
* Solubility in water (20°C)	: 72,4 g/100 ml
* Log P Octanol/Water (20°C)	: Not applicable.
Auto-ignition temperature	: Not applicable.
Minimum ignition energy	: No data available.
Decomposition temperature	: No data available.
Viscosity (20°C)	: No data available.
Explosive properties	: No chemical groups associated with explosive properties .
Oxidizing properties	: No chemical groups associated with oxidizing properties .

SECTION 10. Stability and reactivity**10.1. Reactivity**

Reactivity : Reacts violently with oxidizing agents and strong acids.

10.2. Chemical stability

Stability : Stable at normal circumstances .

10.3. Possibility of hazardous reactions

Hazardous reactions : The substance decomposes, by evaporation, by heating above 150 °C, in formation of toxic and corrosive vapours.
Reacts violently with: Acids , Strong oxidizing agents => Creation of: Toxic vapours , Stinging vapours .

10.4. Conditions to avoid

Conditions to avoid : High temperatures , Direct sunlight .

10.5. Incompatible materials

Materials to avoid : Oxidizing agents , Strong acids .

10.6. Hazardous decomposition products

Hazardous Decomposition Products : Sulfur oxides .

SECTION 11. Toxicological information**11.1. Information on toxicological effects**

Acute toxicity

- * - Inhalation : By prolonged exposure: Inhalation of vapour may cause asthma. Symptoms include: Sore throat , Cough , Shortness of breath .
 - Water : LC50 (Rat, inhalation, 4 h) : No data available.
 - Sodium bisulphite ...% : LC50 (Rat, inhalation, 4 h) : > 5,5 mg/l (Aerosol; OECD Guideline 403)

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SECTION 11. Toxicological information (continued)

- * - Skin contact : Symptoms include: Redness , Pain .
• Sodium bisulphite ...% : LD50 (Rat, dermal) : > 2000 mg/kg (OECD Guideline 402)
- * - Ingestion : Symptoms include:
Harmful if swallowed. Abdominal pain , Diarrhea , Vomiting , Nausea .
• Sodium bisulphite ...% : LD50 (Rat, oral) : > 2610 mg/kg (OECD Guideline 401)
- * Skin corrosion/irritation : Not classified. OECD Guideline 404)
- * Serious eye damage/irritation : Not classified. OECD Guideline 405)
- Aspiration hazard : Not considered hazardous.
- * Respiratory or skin sensitisation : Not sensitive .
- Carcinogenicity : Not listed as carcinogenic .
- Mutagenicity : Not listed as mutagenic .
- Reproductive toxicity : Not listed for reproductive toxicity .
- Specific target organ toxicity - single exposure : To human : Listed not for organ toxicity .
For animals : No effects known.
- Specific target organ toxicity - repeated exposure : To human : Listed not for organ toxicity .
For animals : No effects known.

SECTION 12. Ecological information

12.1. Toxicity

- * Ecotoxicity : May biodegrade/deplete oxygen.
• Sodium bisulphite ...% : LC50 (Fish, 96 h) : 490 mg SO3/l (Brachydanio rerio) (Read across)
• Sodium bisulphite ...% : EC10 (Algae, 72 h) : 28,0 mgSO3/l (Desmodesmus subspicatus) Read across)
• Sodium bisulphite ...% : EC50 (Algae, 72 h) : 36,8 mg SO3/l (Desmodesmus subspicatus) (Read across)
• Sodium bisulphite ...% : EC50 (Daphnia magna, 48 h) : 74,9 mg SO3/l (Read across)
• Sodium bisulphite ...% : NOEC (Fish, 34 d) : 200,5 mg/l (Brachydanrio rerio) (Read across)
• Sodium bisulphite ...% : NOEC (Daphnia magna, 21 d) : 8,41 mg SO3/l (Read across)

12.2. Persistence and degradability

- * Persistence and degradability : • Sodium bisulphite ...% : Persistence and degradability : Inorganic .

12.3. Bioaccumulative potential

- * Bioaccumulation : • Sodium bisulphite ...% : Bioaccumulation : Potential no for bioaccumulation.

12.4. Mobility in soil

- * Mobility : • Sodium bisulphite ...% : Mobility : Adsorption to solid soil phase is not expected.

12.5. Results of PBT and vPvB assessment

- Evaluation : • Sodium bisulphite ...% : PBT/vPvB : No

12.6. Other adverse effects

- Photochemical ozone creation potential : No data available.
- Ozone depletion potential : No data available.
- Endocrine disrupting potential : No data available.
- Global warming potential : No data available.

SODIUM BISULPHITE 19-43%**Code : 16012****SECTION 13. Disposal considerations****13.1. Waste treatment methods**

- Waste from residues/Unused products : The product has to be destroyed according to national or local legislation, by a company specialised in handling hazardous waste products.
- European list of waste products : XXXXXX - European waste product code. This code is assigned on the basis of the most current applications and can not be representative for pollutions which are arisen at the effective use of the product. The producer of the waste has to evaluate its process himself and has to grant the appropriate waste coding. See Decision 2001/118/EC.
- Removal contaminated packaging : Packing is to be used exclusively for the packing of this product. After use, empty and close the packing very carefully.

SECTION 14. Transport information**14.1. UN number**

UN Number : -

14.2. UN proper shipping name

ADR/RID Name : -

ADN Name : -

IMDG Name : -

IATA Name : -

14.3. Transport hazard classe(s)

Class : -

14.4. Packing group

Packaging Group : -

14.5. Environmental hazards

Environmentally hazard : -

Marine pollutant : -

14.6. Special precautions for user

Danger number : -

Hazard Label(s) : -

EmS-N° : -

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Type ship : -

Pollution category : -

SECTION 15. Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

- Inventories : European inventory (EINECS): Listed in inventory.
- Relevant EU Rule(s) : Directive 96/82/EC of the Council of 9 December 1996 on the control of major-accident hazards involving dangerous substances
Directive 98/24/EC of the Council of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work
Decision 2001/118/EC of the Commission of 16 January 2001 amending Decision 2000/532/EC as regards the list of wastes
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and

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SECTION 15. Regulatory information (continued)

amending Regulation (EC) No 1907/2006
 Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (Reach)

National regulations

- Belgium
- Germany : WGK : 1
- Netherlands : Water damaging : B
 Decontamination exertion : 3

15.2. Chemical Safety Assessment

A chemical safety assessment has been carried out for the material.

SECTION 16. Other information

This safety data sheet has been drawn up in accordance with Regulation (EC) No 1907/2006 and the corresponding current changes.

This safety data sheet is exclusively made for industrial/professional use.

* Has changed compared to previous revision.

Changes

: General revision

* Sources of used key data

: The information contained herein is based on the present state of our knowledge (Producer(s) , Chemical cards)
 See also on the webaddress:
<http://apps.echa.europa.eu/registered/registered-sub.aspx#search>

(EU)H-statement(s)

: H302 - Harmful if swallowed.
 EUH031 - Contact with acids liberates toxic gas.

Classification procedure

: Acute Tox. 4, oral; H302 - Calculation method

List of abbreviations and acronyms

: Acute Tox. 4, oral : Acute toxicity, oral - Category 4
 ADN (Accord européen relatif au transport international des marchandises Dangereuses par voie de Navigation interieur) : European agreement concerning the international carriage of dangerous goods by inland waterways
 ADR (Accord européen relatif au transport international des marchandises Dangereuses par Route) : European agreement concerning the international carriage of dangerous goods by road
 CO : Carbon monoxide
 DNEL (Derived No Effect Level) : an estimated safe exposure level
 EC50 : median Effective Concentration
 EmS (Emergency Schedule) : the first code refers to the relevant fire schedule and the second code refers to the relevant spillage schedule
 IATA (International Air Transport Association) : provisions concerning the international carriage of dangerous goods by air
 IMDG (International Maritime Dangerous Goods code)
 LC50 : median Lethal Concentration
 LD50 : median Lethal Dose
 NFPA (National Fire Protection Association) or fire diamant
 NOEC (No Observed Effect Concentration)
 NVIC : National Poisoning Information Center
 OECD : Organisation for Economic Cooperation and Development
 PBT : persistent, bioaccumulative and toxic
 PNEC (Predicted No Effect Concentration) : concentration below which exposure to a substance is not expected to cause adverse effects
 RCP (Reciprocal Calculation Procedure)
 REACH : Registration, Evaluation, Authorisation and restriction of Chemicals
 RID (Règlement concernant le transport International ferroviaire des marchandises

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Dangereuses) : Regulation concerning the International carriage of Dangerous goods by rail

SCL (Specific Concentration Limits)

SOx : Sulphur oxides

TWA (Time-Weighted Average) : the average exposure over a specified period

WGK (Wassergefährdungsklasse) : a German classification of substances that indicate the environmental hazard for surface water

vPvB : very persistent and very bioaccumulative

This information is to our knowledge correct and complete on the date of issue of this safety data sheet. The information only concerns the product and does not give any guarantee for the quality and the completeness of the properties of the product, or in case of mixing or using in any other process. It remains the responsibility of the user to assure himself that the information is suitable and complete concerning the special use he makes of the product.

BRENNTAG denies all responsibility for loss or damage resulting from the use of these data.

End of document

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

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Version 1.0

Print Date 21.03.2013

Revision Date 21.03.2013

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environmental Release Category (ERC)	Article Category (AC)	Specified
1	Manufacture of substance	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19	1, 2, 4, 5, 6a, 6b, 6c, 6d, 7	NA	ES3200
2	Formulation & (re)packing of substances and mixtures	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19	2, 4, 5, 6a, 6b, 6c, 6d, 7	NA	ES3202
3	Professional use - liquid	22	NA	NA	2, 3, 4, 5, 8a, 8b, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20	8b, 8e, 9a, 9b	NA	ES3204
4	Use as ink eraser	21	NA	0	NA	8a, 8b	NA	ES3206
5	Wood impregnation/modification	3	NA	NA	4, 6, 8b, 21, 24	5, 6b	NA	ES11023
6	Wood impregnation/modification	22	NA	NA	21, 24	11a, 11b	NA	ES11025

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1. Short title of Exposure Scenario 1: Manufacture of substance

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Use in closed batch process (synthesis or formulation)</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</p> <p>PROC7: Industrial spraying</p> <p>PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC12: use of blowing agents in manufacture of foam</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC14: Production of preparations or articles by tableting, compression, extrusion, pelettisation</p> <p>PROC15: Use as laboratory reagent</p> <p>PROC16: Using material as fuel sources, limited exposure to unburned product to be expected</p> <p>PROC17: Lubrication at high energy conditions and in partly open process</p> <p>PROC18: Greasing at high energy conditions</p> <p>PROC19: Hand-mixing with intimate contact and only PPE available</p>
Environmental Release Categories	<p>ERC1: Manufacture of substances</p> <p>ERC2: Formulation of preparations</p> <p>ERC4: Industrial use of processing aids in processes and products, not becoming part of articles</p> <p>ERC5: Industrial use resulting in inclusion into or onto a matrix</p> <p>ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)</p> <p>ERC6b: Industrial use of reactive processing aids</p> <p>ERC6c: Industrial use of monomers for manufacture of thermoplastics</p> <p>ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers</p> <p>ERC7: Industrial use of substances in closed systems</p>

2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC2, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Amount used	Annual amount per site	28300 ton(s)/year

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Frequency and duration of use	Continuous exposure	300 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Other data. Other information	Local freshwater dilution factor:: 10
	Other data. Other information	Local marine water dilution factor:: 100
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Regular inspection/maintenance to ensure air tightness and prevent fugitive releases
	Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	99 %
	Type of Sewage Treatment Plant	On-site waste water treatment
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	99 %
Conditions and measures related to external treatment of waste for disposal	Waste treatment	Chemical oxidation.
	When treated in onsite and consequently in municipal treatment, there is no need to take oxidation during the industrial use into account	
Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC12, PROC13, PROC14, PROC15, PROC16, PROC17, PROC18, PROC19

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 40 %
	Physical Form (at time of use)	liquid
	Vapour pressure	27 hPa
Frequency and duration of use	Exposure duration per day	480 min
	Frequency of use	5 days/week

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Human factors not influenced by risk management	Breathing volume	10 m3/day
Other operational conditions affecting workers exposure	Indoor use.	
Technical conditions and measures to control dispersion from source towards the worker	Provide extract ventilation to points where emissions occur. (Efficiency: 78 %)(only PROC7)	
Organisational measures to prevent /limit releases, dispersion and exposure	Clean equipment and the work area every day. General occupational hygiene measures are required to ensure a safe handling of the substance Only properly trained and authorised personal shall handle the substance Substance-handling procedures shall be well documented and strictly supervised	
Conditions and measures related to personal protection, hygiene and health evaluation	Avoid frequent and direct contact with substance Wear chemically resistant gloves. Wear face protective shield. Use suitable eye protection. Personal measures have to be applied in case of potential exposure only.	

Risk Management Measures are based on qualitative risk characterisation.

3. Exposure estimation and reference to its source

Environment

Used EUSES model.

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4	worst-case	Fresh water	PEC	2,52mg/L	0,9
ERC4	worst-case	Marine water	PEC	0,57mg/L	0,2
ERC4	worst-case	STP (freshwater)	PEC	25,2mg/L	0,4
ERC4	worst-case	STP (marine)	PEC	57,06mg/L	0,9

Workers

MEASE

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1, PROC2, PROC12	---	Worker - inhalative, long-term - systemic	0,001mg/m ³	< 0,001
PROC3, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC16	---	Worker - inhalative, long-term - systemic	0,01mg/m ³	0,001

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PROC4, PROC5, PROC8a, PROC10, PROC19	---	Worker - inhalative, long-term - systemic	0,05mg/m ³	0,005
PROC17, PROC18	---	Worker - inhalative, long-term - systemic	0,1mg/m ³	0,01
PROC7	---	Worker - inhalative, long-term - systemic	4,4mg/m ³	0,44

Dermal exposure is not considered to be relevant.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

If a DU has OC/RMMs outside the OC/RMM specifications in the ES, then the DU can evaluate whether he works inside the boundaries set by the ES through scaling in EUSES.

The main driving parameters are:

- Local amount used (tonnage)
- Release factor prior to on-site treatment
- On-site wastewater treatment presence and efficiency
- Dilution factor

For scaling see: <http://www.arche-consulting.be/metal-CSA-toolbox/du-scaling-tool>

The DU works inside the boundaries set by the ES if either the proposed risk management measures as described above are met or the downstream user can demonstrate on his own that his operational conditions and implemented risk management measures are adequate. This has to be done by showing that they limit the inhalation and dermal exposure to a level below the respective DNEL (given that the processes and activities in question are covered by the PROCs listed above) as given below

If measured data are not available, the DU may make use of an appropriate scaling tool such as MEASE (www.ebrc.de/mease.html) to estimate the associated exposure

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

Take care for general good hygiene and housekeeping.

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1. Short title of Exposure Scenario 2: Formulation & (re)packing of substances and mixtures

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Use in closed batch process (synthesis or formulation)</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</p> <p>PROC7: Industrial spraying</p> <p>PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC12: use of blowing agents in manufacture of foam</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC14: Production of preparations or articles by tableting, compression, extrusion, pelettisation</p> <p>PROC15: Use as laboratory reagent</p> <p>PROC16: Using material as fuel sources, limited exposure to unburned product to be expected</p> <p>PROC17: Lubrication at high energy conditions and in partly open process</p> <p>PROC18: Greasing at high energy conditions</p> <p>PROC19: Hand-mixing with intimate contact and only PPE available</p>
Environmental Release Categories	<p>ERC2: Formulation of preparations</p> <p>ERC4: Industrial use of processing aids in processes and products, not becoming part of articles</p> <p>ERC5: Industrial use resulting in inclusion into or onto a matrix</p> <p>ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)</p> <p>ERC6b: Industrial use of reactive processing aids</p> <p>ERC6c: Industrial use of monomers for manufacture of thermoplastics</p> <p>ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers</p> <p>ERC7: Industrial use of substances in closed systems</p>

2.1 Contributing scenario controlling environmental exposure for: ERC2, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Amount used	Annual amount per site	28300 ton(s)/year
Frequency and duration of use	Continuous exposure	300 days/year

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Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Other data. Other information	Local freshwater dilution factor:: 10
	Other data. Other information	Local marine water dilution factor:: 100
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Regular inspection/maintenance to ensure air tightness and prevent fugitive releases
	Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	99 %
	Type of Sewage Treatment Plant	On-site waste water treatment
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	99 %
Conditions and measures related to external treatment of waste for disposal	Waste treatment	Chemical oxidation.
	When treated in onsite and consequently in municipal treatment, there is no need to take oxidation during the industrial use into account	
Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC12, PROC13, PROC14, PROC15, PROC16, PROC17, PROC18, PROC19

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 40 %
	Physical Form (at time of use)	liquid
	Vapour pressure	27 hPa
Frequency and duration of use	Exposure duration per day	480 min
	Frequency of use	5 days/week
	Frequency of use	230 days/year

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Human factors not influenced by risk management	Breathing volume	10 m3/day
Other operational conditions affecting workers exposure	Indoor use.	
Technical conditions and measures to control dispersion from source towards the worker	Provide extract ventilation to points where emissions occur. (Efficiency: 78 %)(only PROC7)	
Organisational measures to prevent /limit releases, dispersion and exposure	Clean equipment and the work area every day. General occupational hygiene measures are required to ensure a safe handling of the substance Only properly trained and authorised personal shall handle the substance Substance-handling procedures shall be well documented and strictly supervised	
Conditions and measures related to personal protection, hygiene and health evaluation	Avoid frequent and direct contact with substance Wear chemically resistant gloves. Wear face protective shield. Use suitable eye protection. Personal measures have to be applied in case of potential exposure only.	

Risk Management Measures are based on qualitative risk characterisation.

3. Exposure estimation and reference to its source

Environment

Used EUSES model.

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4	worst-case	Fresh water	PEC	2,52mg/L	0,9
ERC4	worst-case	Marine water	PEC	0,57mg/L	0,2
ERC4	worst-case	STP (freshwater)	PEC	25,2mg/L	0,4
ERC4	worst-case	STP (marine)	PEC	57,06mg/L	0,9

Workers

MEASE

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1, PROC2, PROC12	---	Worker - inhalative, long-term - systemic	0,001mg/m ³	< 0,001
PROC3, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC16	---	Worker - inhalative, long-term - systemic	0,01mg/m ³	0,001

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PROC4, PROC5, PROC8a, PROC10, PROC19	---	Worker - inhalative, long-term - systemic	0,05mg/m ³	0,005
PROC17, PROC18	---	Worker - inhalative, long-term - systemic	0,1mg/m ³	0,01
PROC7	---	Worker - inhalative, long-term - systemic	4,4mg/m ³	0,44

Dermal exposure is not considered to be relevant.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

If a DU has OC/RMMs outside the OC/RMM specifications in the ES, then the DU can evaluate whether he works inside the boundaries set by the ES through scaling in EUSES.

The main driving parameters are:

- Local amount used (tonnage)
- Release factor prior to on-site treatment
- On-site wastewater treatment presence and efficiency
- Dilution factor

For scaling see: [http://www.arche-consulting.be/metal-CSA-toolbox/du-scaling tool](http://www.arche-consulting.be/metal-CSA-toolbox/du-scaling%20tool)

The DU works inside the boundaries set by the ES if either the proposed risk management measures as described above are met or the downstream user can demonstrate on his own that his operational conditions and implemented risk management measures are adequate. This has to be done by showing that they limit the inhalation and dermal exposure to a level below the respective DNEL (given that the processes and activities in question are covered by the PROCs listed above) as given below

If measured data are not available, the DU may make use of an appropriate scaling tool such as MEASE (www.ebrc.de/mease.html) to estimate the associated exposure

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

Take care for general good hygiene and housekeeping.

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1. Short title of Exposure Scenario 3: Professional use - liquid

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Use in closed batch process (synthesis or formulation)</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</p> <p>PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC11: Non industrial spraying</p> <p>PROC12: use of blowing agents in manufacture of foam</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC14: Production of preparations or articles by tableting, compression, extrusion, pelettisation</p> <p>PROC15: Use as laboratory reagent</p> <p>PROC16: Using material as fuel sources, limited exposure to unburned product to be expected</p> <p>PROC17: Lubrication at high energy conditions and in partly open process</p> <p>PROC18: Greasing at high energy conditions</p> <p>PROC19: Hand-mixing with intimate contact and only PPE available</p> <p>PROC20: Heat and pressure transfer fluids in dispersive, professional use but closed systems</p>
Environmental Release Categories	<p>ERC8b: Wide dispersive indoor use of reactive substances in open systems</p> <p>ERC8e: Wide dispersive outdoor use of reactive substances in open systems</p> <p>ERC9a: Wide dispersive indoor use of substances in closed systems</p> <p>ERC9b: Wide dispersive outdoor use of substances in closed systems</p>

2.1 Contributing scenario controlling environmental exposure for: ERC8b, ERC8e, ERC9a, ERC9b

The used parameters represent a worst case scenario

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Amount used	Annual amount per site	28300 ton(s)/year
Frequency and duration of use	Continuous exposure	300 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Other data. Other information	Local freshwater dilution factor:: 10

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	Other data. Other information	Local marine water dilution factor:: 100
<p>Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site</p>	Water	The waste water has to be directed to a dedicated sewage treatment plant or treated by other suitable techniques, If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
	Soil	Floor should be impervious and resistant to liquid
Conditions and measures related to external treatment of waste for disposal	Waste treatment	Chemical oxidation.
Conditions and measures related to external recovery of waste	Recovery Methods	External recovery and recycling of waste should comply with applicable local and/or national regulations.
<p>2.2 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC12, PROC13, PROC14, PROC15, PROC16, PROC17, PROC18, PROC19, PROC20</p>		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 40 %
	Physical Form (at time of use)	liquid
	Vapour pressure	27 hPa
Frequency and duration of use	Exposure duration per day	480 min
	Frequency of use	5 days/week
	Frequency of use	230 days/year
Human factors not influenced by risk management	Breathing volume	10 m3/day
Other operational conditions affecting workers exposure	Indoor use.(except PROC16, PROC18)	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>Clean equipment and the work area every day. General occupational hygiene measures are required to ensure a safe handling of the substance Only properly trained and authorised personal shall handle the substance Substance-handling procedures shall be well documented and strictly supervised</p>	
	Ensure minimization of manual phases(PROC3, PROC15)	
Conditions and measures related to personal protection, hygiene and health evaluation	<p>Avoid frequent and direct contact with substance Wear chemically resistant gloves. Wear face protective shield. Use suitable eye protection. Personal measures have to be applied in case of potential exposure only.</p>	
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FFP1 mask(PROC11)

Risk Management Measures are based on qualitative risk characterisation.

3. Exposure estimation and reference to its source

Environment

Used EUSES model.

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4	worst-case	Fresh water	PEC	2,52mg/L	0,9
ERC4	worst-case	Marine water	PEC	0,57mg/L	0,2
ERC4	worst-case	STP (freshwater)	PEC	25,2mg/L	0,4
ERC4	worst-case	STP (marine)	PEC	57,06mg/L	0,9

Workers

MEASE

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC2, PROC12, PROC20	---	Worker - inhalative, long-term - systemic	0,001mg/m ³	< 0,001
PROC3, PROC15	---	Worker - inhalative, long-term - systemic	0,01mg/m ³	0,001
PROC4, PROC5, PROC14	---	Worker - inhalative, long-term - systemic	0,1mg/m ³	0,01
PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC19	---	Worker - inhalative, long-term - systemic	0,05mg/m ³	0,005
PROC17	---	Worker - inhalative, long-term - systemic	1mg/m ³	0,1
PROC16, PROC18	---	Worker - inhalative, long-term - systemic	0,5mg/m ³	0,05
PROC11	---	Worker - inhalative, long-term - systemic	5mg/m ³	0,5

Dermal exposure is not considered to be relevant.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

If a DU has OC/RMMs outside the OC/RMM specifications in the ES, then the DU can evaluate whether he works

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inside the boundaries set by the ES through scaling in EUSES.

The main driving parameters are:

- Local amount used (tonnage)
- Release factor prior to on-site treatment
- On-site wastewater treatment presence and efficiency
- Dilution factor

For scaling see: <http://www.arche-consulting.be/metal-CSA-toolbox/du-scaling-tool>

The DU works inside the boundaries set by the ES if either the proposed risk management measures as described above are met or the downstream user can demonstrate on his own that his operational conditions and implemented risk management measures are adequate. This has to be done by showing that they limit the inhalation and dermal exposure to a level below the respective DNEL (given that the processes and activities in question are covered by the PROCs listed above) as given below

If measured data are not available, the DU may make use of an appropriate scaling tool such as MEASE (www.ebrc.de/mease.html) to estimate the associated exposure

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

Take care for general good hygiene and housekeeping.

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1. Short title of Exposure Scenario 4: Use as ink eraser

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC0: Other products:
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b

Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
Amount used	Annual site tonnage (tons/year):	30,96 ton(s)/year
	Fraction of EU tonnage used in region:	10
	Amounts used in the EU (tonnes/year)	154782 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Other data.Other information	Local freshwater dilution factor:: 10
	Other data.Other information	Local marine water dilution factor:: 100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Water	100
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Percentage removed from waste water	99 %

2.2 Contributing scenario controlling consumer exposure for: PC0

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 40 %
	Physical Form (at time of use)	liquid
	Vapour pressure	27 hPa
Amount used	Amount used per event (oral exposure)	1 µL(Accidental leaching PC0)
	Further nibbling/mouthing being unlikely at the same event due to the taste(Accidental leaching PC0)	

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Frequency and duration of use	Covers daily exposure up to	15 min
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Body weight	20 kg(Child (6 years) PC0)
	Body weight	40 kg(Child (12 years) PC0)
	Exposed skin areas	Fingertips 10,6 cm ²
	Exposed skin areas	Palms of both hands 420 cm ² (Max PC0)
Other given operational conditions affecting consumers exposure	Indoor use.	
	Assumes activities are at ambient temperature.	

3. Exposure estimation and reference to its source

Environment

Used EUSES model.

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a, ERC8b	---	Fresh water	PEC	32,6mg/L	0,01
ERC8a, ERC8b	---	Marine water	PEC	3,26mg/L	< 0,01

Consumers

Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PC0	---	Consumer oral exposure	25µg/kg bw/day	0,026

Estimated dermal exposure value is regarded to be negligible. Inhalative exposure is regarded to be not relevant. PC0: Other: UCN B25000 has been used to described the product category. PC0: Other: UCN B25300 has been used to described the product category.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

The DU works inside the boundaries set by the ES if the concentration and the design of the product are such as described in the ES

The exposure estimate needs to be below the oral, local effects DNEL of the substance

For scaling see: [http://www.arche-consulting.be/metal-CSA-toolbox/du-scaling tool](http://www.arche-consulting.be/metal-CSA-toolbox/du-scaling%20tool)

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

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1. Short title of Exposure Scenario 5: Wood impregnation/modification

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC6: Calendering operations PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC21: Low energy manipulation of substances bound in materials and/or articles PROC24: High (mechanical) energy work-up of substances bound in materials and/or articles
Environmental Release Categories	ERC5: Industrial use resulting in inclusion into or onto a matrix ERC6b: Industrial use of reactive processing aids

2.1 Contributing scenario controlling environmental exposure for: ERC5, ERC6b

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Amount used	Daily amount per site	94333 kg
	Maximum daily site tonnage (kg/day):	104814 kg/day
Frequency and duration of use	Continuous exposure	300
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Soil	1 %
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 99 %)
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Percentage removed from waste water	99 %

2.2 Contributing scenario controlling worker exposure for: PROC6, PROC21, PROC24

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
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	Physical Form (at time of use)	solid
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Human factors not influenced by risk management	Breathing volume	10 m3/day
Organisational measures to prevent /limit releases, dispersion and exposure	Regular cleaning of equipment and work area	
Conditions and measures related to personal protection, hygiene and health evaluation	Do not inhale dust / smoke / mist When handling hot material, use heat resistant gloves.	

2.3 Contributing scenario controlling worker exposure for: PROC4, PROC8b

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	Aqueous solution
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Human factors not influenced by risk management	Breathing volume	10 m3/day
Organisational measures to prevent /limit releases, dispersion and exposure	Regular cleaning of equipment and work area	
Conditions and measures related to personal protection, hygiene and health evaluation	Do not inhale dust / smoke / mist When handling hot material, use heat resistant gloves.	

3. Exposure estimation and reference to its source

Environment

METALS EUSES IT tool

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4	worst-case	STP (freshwater)	PEC	0,01mg/L	0,4
ERC4	worst-case	STP (marine)	PEC	57,06mg/L	0,9
ERC4	worst-case	Fresh water	PEC	2,52mg/L	0,9
ERC4	worst-case	Marine water	PEC	0,57mg/L	0,2

Workers

PROC6, PROC21, PROC24 MEASE

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC6	---	Inhalation worker	5mg/m ³	0,5

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		exposure		
PROC21	---	Inhalation worker exposure	0,5mg/m ³	0,05
PROC24	---	Inhalation worker exposure	5,5mg/m ³	0,55
PROC4	---	Inhalation worker exposure	0,05mg/m ³	0,005
PROC8b	---	Inhalation worker exposure	0,01mg/m ³	0,001

Dermal exposure is not considered to be relevant.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

If measured data are not available, the DU may make use of an appropriate scaling tool such as MEASE (www.ebrc.de/mease.html) to estimate the associated exposure
 Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
 Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
 Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
 Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2
 Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

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1. Short title of Exposure Scenario 6: Wood impregnation/modification

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC21: Low energy manipulation of substances bound in materials and/or articles PROC24: High (mechanical) energy work-up of substances bound in materials and/or articles
Environmental Release Categories	ERC11a: Wide dispersive indoor use of long-life articles and materials with low release ERC11b: Wide dispersive indoor use of long-life articles and materials with high or intended release

2.1 Contributing scenario controlling environmental exposure for: ERC11a, ERC11b

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Amount used	Daily amount per site	94333 kg
	Maximum daily site tonnage (kg/day):	104814 kg
Frequency and duration of use	Continuous exposure	300
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Soil	1 %
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 99 %)
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Percentage removed from waste water	99 %

2.2 Contributing scenario controlling worker exposure for: PROC21, PROC24

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	solid

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

Sodium bisulphite ...%

Version 1.0

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Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Human factors not influenced by risk management	Breathing volume	10 m ³ /day
Organisational measures to prevent /limit releases, dispersion and exposure	Regular cleaning of equipment and work area	
Conditions and measures related to personal protection, hygiene and health evaluation	Do not inhale dust / smoke / mist	
	When handling hot material, use heat resistant gloves.	

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4	worst-case	STP (freshwater)	PEC	0,4mg/L	0,4
ERC4	worst-case	STP (marine)	PEC	57,06mg/L	0,9
ERC4	worst-case	Fresh water	PEC	2,52mg/L	0,9
ERC4	worst-case	Marine water	PEC	0,57mg/L	0,2

Workers

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC21	---	Inhalation worker exposure	0,5mg/m ³	0,05
PROC24	---	Inhalation worker exposure	5,5mg/m ³	0,55

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
 If measured data are not available, the DU may make use of an appropriate scaling tool such as MEASE (www.ebrc.de/mease.html) to estimate the associated exposure
 Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
 Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2
 Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

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ISO 22000	Yes	Yes
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OHSAS18001	-	Yes
ESAD	Yes	Yes
other	-	AEO