



SAFETY DATA SHEET COLATERIC CBS

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

1.1. Product identifier

Product name COLATERIC CBS

Product number 53859

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

Identified uses Surfactant

1.3. Details of the supplier of the safety data sheet

Supplier Univar Solutions UK Ltd
Aquarius House
6 Mid Point Business Park
Bradford
BD3 7AY
+44 1274 267300
+44 1274 267306
SDS.EMEA@univarsolutions.com

1.4. Emergency telephone number

Emergency telephone SGS - +32 (0)3 575 55 55 (24h)

Sds No. 53859

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Eye Dam. 1 - H318

Environmental hazards Aquatic Chronic 2 - H411

2.2. Label elements

Hazard pictograms



Signal word Danger

Hazard statements
H318 Causes serious eye damage.
H411 Toxic to aquatic life with long lasting effects.

COLATERIC CBS

Precautionary statements	P273 Avoid release to the environment.
	P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
	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/ doctor.
	P391 Collect spillage.
Contains	P501 Dispose of contents/ container in accordance with national regulations.
	1-PROPANAMINIUM, N-(3-AMINOPROPYL)-2-HYDROXY-N,NDIMETHYL- 3-SULFO-, N-(C12-18(EVEN NUMBERED) ACYL) DERIVS., HYDROXIDES, INNER SALTS

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

1-PROPANAMINIUM, N-(3-AMINOPROPYL)-2-HYDROXY-N,N-DIMETHYL- 3-SULFO-, N-(C12-18(EVEN NUMBERED) ACYL) DERIVS., HYDROXIDES, INNER SALTS			30 - 60%
CAS number: 68139-30-0	EC number: 939-457-4	REACH registration number: 01-2119970901-34-XXXX	
Classification Eye Dam. 1 - H318 Aquatic Chronic 2 - H411			
GLYCERINE			1 - 5%
CAS number: 56-81-5	EC number: 200-289-5		
Classification Not Classified			
SODIUM HYDROXIDE			< 0.1%
CAS number: 1310-73-2	EC number: 215-185-5	REACH registration number: 01-2119457892-27-XXXX	
Classification Met. Corr. 1 - H290 Skin Corr. 1A - H314 Eye Dam. 1 - H318			

The full text for all hazard statements is displayed in Section 16.

Composition comments The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	First aid personnel should wear appropriate protective equipment during any rescue. Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Show this Safety Data Sheet to the medical personnel.
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Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse nose and mouth with water. Loosen tight clothing such as collar, tie or belt. Get medical attention if symptoms are severe or persist.
Ingestion	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse mouth thoroughly with water. Do not induce vomiting unless under the direction of medical personnel. Get medical attention.
Skin contact	Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if symptoms are severe or persist after washing.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

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

Eye contact	Causes serious eye damage. May cause permanent damage if eye is not immediately irrigated.
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4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	No specific recommendations. Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	Toxic to aquatic life with long lasting effects. When heated, vapours/gases hazardous to health may be formed. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Containers can burst violently or explode when heated, due to excessive pressure build-up.
Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours. Acrid smoke or fumes.

5.3. Advice for firefighters

Protective actions during firefighting	No action shall be taken without appropriate training or involving any personal risk. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Contain and collect extinguishing water. Control run-off water by containing and keeping it out of sewers and watercourses.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	No action shall be taken without appropriate training or involving any personal risk. Follow precautions for safe handling described in this safety data sheet. Evacuate area. Keep unnecessary and unprotected personnel away from the spillage. Provide adequate ventilation. If ventilation is inadequate, suitable respiratory protection must be worn. Avoid inhalation of vapours and contact with skin and eyes. Do not touch or walk into spilled material.
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6.2. Environmental precautions

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Environmental precautions Toxic to aquatic life with long lasting effects. Avoid the spillage or runoff entering drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Toxic to aquatic life with long lasting effects. Approach the spillage from upwind. Stop leak if safe to do so. Provide adequate ventilation. Absorb spillage with inert, damp, non-combustible material. The contaminated absorbent may pose the same hazard as the spilled material. Collect and place in suitable waste disposal containers and seal securely. Clean contaminated objects and areas thoroughly, observing environmental regulations.

6.4. Reference to other sections

Reference to other sections Wear protective clothing as described in Section 8 of this safety data sheet. Collect and dispose of spillage as indicated in Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Handle all packages and containers carefully to minimise spills. Wear protective clothing as described in Section 8 of this safety data sheet. Provide adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Container must be kept tightly closed when not in use. Avoid inhalation of vapours and contact with skin and eyes. Avoid the formation of mists.

Advice on general occupational hygiene Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Provide eyewash station and safety shower.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place. Container must be kept tightly closed when not in use. Avoid excessive heat for prolonged periods of time. Keep away from food, drink and animal feeding stuffs. Use appropriate containment to avoid environmental contamination.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

GLYCERINE

Long-term exposure limit (8-hour TWA): WEL 10 mg/m³ mist

SODIUM HYDROXIDE

Short-term exposure limit (15-minute): WEL 2 mg/m³

WEL = Workplace Exposure Limit.

GLYCERINE (CAS: 56-81-5)

Ingredient comments	WEL = Workplace Exposure Limits
DNEL	Industry - Inhalation; Long term local effects: 56 mg/m ³ General population - Inhalation; Long term local effects: 33 mg/m ³ General population - Oral; Long term systemic effects: 229 mg/kg/day

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PNEC

- Fresh water; 0.885 mg/l
- marine water; 0.0885 mg/l
- Intermittent release; 8.85 mg/l
- STP; 1000 mg/l
- Soil; 0.141 mg/kg
- Sediment (Freshwater); 3.3 mg/kg
- Sediment (Marinewater); 0.33 mg/kg

SODIUM HYDROXIDE (CAS: 1310-73-2)

DNEL

- Consumer - Inhalation; Long term local effects: 1 mg/m³
 Workers - Dermal; Short term local effects: 2 mg/kg/day
 Workers - Inhalation; Short term local effects: 2 mg/m³
 Workers - Inhalation; Long term local effects: 1 mg/m³

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Avoid inhalation of vapours and contact with skin and eyes. Provide eyewash station and safety shower.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Chemical splash goggles or face shield.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Frequent changes are recommended.

Other skin and body protection

Wear appropriate clothing to prevent repeated or prolonged skin contact.

Hygiene measures

Wash at the end of each work shift and before eating, smoking and using the toilet. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Care should be taken to avoid contact with contaminants when removing contaminated clothing. Wash contaminated clothing before reuse. Provide eyewash station and safety shower.

Respiratory protection

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. If ventilation is inadequate, suitable respiratory protection must be worn.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Liquid.

Colour

Yellow.

COLATERIC CBS

Odour	Characteristic.
Odour threshold	No information available.
pH	pH (diluted solution): 7.5 - 8.5 @ 10% aq
Melting point	-15°C
Initial boiling point and range	105°C @ 760 mm Hg
Flash point	No information available.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapour pressure	No information available.
Vapour density	No information available.
Relative density	No information available.
Bulk density	No information available.
Solubility(ies)	Soluble in water.
Partition coefficient	No information available.
Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.
Viscosity	189 cP @ 25°C
Explosive properties	Not considered to be explosive.
Explosive under the influence of a flame	No information available.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information	No information available.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	See the other subsections of this section for further details.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Under normal conditions of storage and use, no hazardous reactions will occur.
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10.4. Conditions to avoid

Conditions to avoid	There are no known conditions that are likely to result in a hazardous situation.
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10.5. Incompatible materials

Materials to avoid No specific material or group of materials is likely to react with the product to produce a hazardous situation.

10.6. Hazardous decomposition products

Hazardous decomposition products Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours. Acrid smoke or fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Skin corrosion/irritation Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye damage.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Genotoxicity - in vivo Based on available data the classification criteria are not met.

Carcinogenicity

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

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity - development Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

Inhalation Gas or vapour in high concentrations may irritate the respiratory system.

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Ingestion	May cause discomfort if swallowed.
Skin contact	Skin irritation should not occur when used as recommended.
Eye contact	Causes serious eye damage. May cause permanent damage if eye is not immediately irrigated.

Toxicological information on ingredients.

1-PROPANAMINIUM, N-(3-AMINOPROPYL)-2-HYDROXY-N,N-DIMETHYL- 3-SULFO-, N-(C12-18(EVEN NUMBERED) ACYL) DERIVS., HYDROXIDES, INNER SALTS

Serious eye damage/irritation

Serious eye damage/irritation	Causes serious eye damage.
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GLYCERINE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg)	27,200.0
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Species	Rat
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Notes (oral LD₅₀)	LD ₅₀ 27200 mg/kg, Oral, Rat
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ATE oral (mg/kg)	27,200.0
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Acute toxicity - dermal

Notes (dermal LD₅₀)	LD ₅₀ 56750 mg/kg, Dermal, Guinea pig
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Acute toxicity - inhalation

Notes (inhalation LC₅₀)	LC ₅₀ > 2.75 mg/l, Inhalation, Dust/Mist, Rat (sat. atm. 0 Death.)
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Skin corrosion/irritation

Animal data	Based on available data the classification criteria are not met.
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Serious eye damage/irritation

Serious eye damage/irritation	Based on available data the classification criteria are not met.
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Respiratory sensitisation

Respiratory sensitisation	Based on available data the classification criteria are not met.
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Skin sensitisation

Skin sensitisation	Based on available data the classification criteria are not met.
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Germ cell mutagenicity

Genotoxicity - in vitro	Based on available data the classification criteria are not met.
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Carcinogenicity

Carcinogenicity	Based on available data the classification criteria are not met.
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Reproductive toxicity

Reproductive toxicity - fertility	Based on available data the classification criteria are not met.
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Specific target organ toxicity - single exposure

COLATERIC CBS

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

Inhalation Gas or vapour in high concentrations may irritate the respiratory system.

Ingestion May cause discomfort if swallowed.

Skin contact Slightly irritating.

Eye contact May cause temporary eye irritation.

SODIUM HYDROXIDE

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ >500 mg/kg, Oral, Rabbit

Acute toxicity - dermal

Notes (dermal LD₅₀) No specific test data are available.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) No specific test data are available.

Skin corrosion/irritation

Skin corrosion/irritation Causes severe burns.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye damage.

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation No information available.

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

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Aspiration hazard

Aspiration hazard No information available.

Inhalation

Dust is severely irritating to the upper respiratory system. Symptoms following overexposure may include the following: Coughing. Wheezing/breathing difficulties. May cause an asthma-like shortness of breath. Sore throat. Burning sensation in mouth. Upper respiratory irritation. Tracheobronchitis, pulmonary oedema.

Ingestion

Causes severe burns. May cause burns in mucous membranes, throat, oesophagus and stomach. Symptoms following overexposure may include the following: Chemical burns. Burning sensation in mouth. Nausea, vomiting. Vomiting of blood. Swallowing concentrated chemical may cause severe internal injury.

Skin contact

Causes severe burns. Blistering may occur. May cause serious chemical burns to the skin. Prolonged contact causes serious tissue damage.

Eye contact

Causes serious eye damage. May cause chemical eye burns. Symptoms following overexposure may include the following: Severe irritation, burning and tearing. Corneal damage. May cause permanent damage if eye is not immediately irrigated.

SECTION 12: Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Ecological information on ingredients.

1-PROPANAMINIUM, N-(3-AMINOPROPYL)-2-HYDROXY-N,N-DIMETHYL- 3-SULFO-, N-(C12-18(EVEN NUMBERED) ACYL) DERIVS., HYDROXIDES, INNER SALTS

Ecotoxicity Toxic to aquatic life with long lasting effects.

GLYCERINE

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

SODIUM HYDROXIDE

Ecotoxicity The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.

12.1. Toxicity

Toxicity Toxic to aquatic life with long lasting effects.

Ecological information on ingredients.

1-PROPANAMINIUM, N-(3-AMINOPROPYL)-2-HYDROXY-N,N-DIMETHYL- 3-SULFO-, N-(C12-18(EVEN NUMBERED) ACYL) DERIVS., HYDROXIDES, INNER SALTS

Toxicity Toxic to aquatic life with long lasting effects.

GLYCERINE

Toxicity Not considered toxic to fish.

Acute aquatic toxicity

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Acute toxicity - fish	LC ₅₀ , 96 hours: 54000 mg/l, Oncorhynchus mykiss (Rainbow trout) LC ₅₀ , 96 hour: >= 885 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 24 hours: > 10000 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: > 2900 mg/l, Freshwater algae
Acute toxicity - microorganisms	EC ₅₀ , 3 hour: > 1000 mg/l, Activated sludge

SODIUM HYDROXIDE

Toxicity	The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.
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Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 33-189 mg/l mg/l, Fish LC ₅₀ , 96 hour: 45.5 mg/l, Oncorhynchus mykiss (Rainbow trout) LC ₅₀ , 96 hour: 125 mg/l, Freshwater fish Gambusia affinis (Mosquito fish)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 40-240 mg/l mg/l, Daphnia magna

12.2. Persistence and degradability

Persistence and degradability	The product is readily biodegradable. The surfactant(s) contained in this product complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them at their direct request, or at the request of a detergent manufacturer.
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Ecological information on ingredients.

GLYCERINE

Persistence and degradability	The product is readily biodegradable.
Biodegradation	- Degradation 82%: 20 days OECD 301D - Degradation 63%: 28 day OECD 301C
Biological oxygen demand	0.87 g O ₂ /g substance

SODIUM HYDROXIDE

Persistence and degradability	The product contains only inorganic substances which are not biodegradable.
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12.3. Bioaccumulative potential

Bioaccumulative potential	No data available on bioaccumulation.
Partition coefficient	No information available.

Ecological information on ingredients.

COLATERIC CBS

GLYCERINE

Bioaccumulative potential The product is not bioaccumulating.

Partition coefficient log Pow: -1.76

SODIUM HYDROXIDE

Bioaccumulative potential The product is not bioaccumulating.

Partition coefficient No information available.

12.4. Mobility in soil

Mobility No information available.

Ecological information on ingredients.

GLYCERINE

Mobility The product is soluble in water.

SODIUM HYDROXIDE

Mobility The product is water-soluble and may spread in water systems.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

Ecological information on ingredients.

GLYCERINE

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

SODIUM HYDROXIDE

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects No information available.

Ecological information on ingredients.

GLYCERINE

Other adverse effects No information available.

SODIUM HYDROXIDE

Other adverse effects Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

COLATERIC CBS

General information

Waste is classified as hazardous waste. Do not puncture or incinerate, even when empty. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous. Avoid discharge into drains or watercourses or onto the ground.

Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Disposal methods

Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)	3082
UN No. (IMDG)	3082
UN No. (ICAO)	3082
UN No. (ADN)	3082

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS 1-PROPANAMINIUM, N-(3-AMINOPROPYL)-2-HYDROXY-N,N-DIMETHYL- 3-SULFO-, N-(C12-18(EVEN NUMBERED) ACYL) DERIVS., HYDROXIDES, INNER SALTS)
Proper shipping name (IMDG)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS 1-PROPANAMINIUM, N-(3-AMINOPROPYL)-2-HYDROXY-N,N-DIMETHYL- 3-SULFO-, N-(C12-18(EVEN NUMBERED) ACYL) DERIVS., HYDROXIDES, INNER SALTS)
Proper shipping name (ICAO)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS 1-PROPANAMINIUM, N-(3-AMINOPROPYL)-2-HYDROXY-N,N-DIMETHYL- 3-SULFO-, N-(C12-18(EVEN NUMBERED) ACYL) DERIVS., HYDROXIDES, INNER SALTS)
Proper shipping name (ADN)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS 1-PROPANAMINIUM, N-(3-AMINOPROPYL)-2-HYDROXY-N,N-DIMETHYL- 3-SULFO-, N-(C12-18(EVEN NUMBERED) ACYL) DERIVS., HYDROXIDES, INNER SALTS)

14.3. Transport hazard class(es)

ADR/RID class	9
ADR/RID classification code	M6
ADR/RID label	9
IMDG class	9
ICAO class/division	9
ADN class	9

Transport labels



14.4. Packing group

COLATERIC CBS

ADR/RID packing group	III
IMDG packing group	III
ICAO packing group	III
ADN packing group	III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



14.6. Special precautions for user

EmS	F-A, S-F
ADR transport category	3
Emergency Action Code	•3Z
Hazard Identification Number (ADR/RID)	90
Tunnel restriction code	(-)

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

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78
and the IBC Code

SECTION 15: Regulatory information

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

EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). 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 (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015. This product may impact SEVESO storage regulations.
Health and environmental listings	The surfactant(s) contained in this preparation complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.
Restrictions (Annex XVII Regulation 1907/2006)	CAUTION - Chemical may be subject to REACH RESTRICTIONS - see Annex XVII. This product is/contains a substance that is included in REGULATION (EC) No 1907/2006 (REACH) ANNEX XVII - RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES. Entry number: 3
Seveso Directive - Control of major accident hazards	E2

15.2. Chemical safety assessment

COLATERIC CBS

Not applicable.

Inventories

Canada - DSL/NDSL

All the ingredients are listed or exempt.
DSL

US - TSCA

All the ingredients are listed or exempt.

Australia - AICS

All the ingredients are listed or exempt.

China - IECSC

All the ingredients are listed or exempt.

Philippines – PICCS

All the ingredients are listed or exempt.

New Zealand - NZIOC

All the ingredients are listed or exempt.

Taiwan - TCSI

All the ingredients are listed or exempt.

SECTION 16: Other information

COLATERIC CBS

Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
 CAS: Chemical Abstracts Service.
 DNEL: Derived No Effect Level.
 IATA: International Air Transport Association.
 IMDG: International Maritime Dangerous Goods.
 Kow: Octanol-water partition coefficient.
 LC₅₀: Lethal Concentration to 50 % of a test population.
 LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
 PBT: Persistent, Bioaccumulative and Toxic substance.
 PNEC: Predicted No Effect Concentration.
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
 RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
 vPvB: Very Persistent and Very Bioaccumulative.
 IARC: International Agency for Research on Cancer.
 MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
 cATpE: Converted Acute Toxicity Point Estimate.
 BCF: Bioconcentration Factor.
 BOD: Biochemical Oxygen Demand.
 EC₅₀: 50% of maximal Effective Concentration.
 LOAEC: Lowest Observed Adverse Effect Concentration.
 LOAEL: Lowest Observed Adverse Effect Level.
 NOAEC: No Observed Adverse Effect Concentration.
 NOAEL: No Observed Adverse Effect Level.
 NOEC: No Observed Effect Concentration.
 LOEC: Lowest Observed Effect Concentration.
 DMEL: Derived Minimal Effect Level.
 EL50: Exposure Limit 50
 hPa: Hectopascal
 LL50: Lethal Loading fifty
 OECD: Organisation for Economic Co-operation and Development
 POW: Octanol-water partition coefficient
 SCBA: self-contained breathing apparatus
 STP: Sewage Treatment Plant
 VOC: Volatile Organic Compounds

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
 Aquatic Acute = Hazardous to the aquatic environment (acute)
 Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Key literature references and sources for data

Supplier's information.

Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date

18/08/2020

Version number

2.000

Supersedes date

24/02/2018

SDS number

53859

COLATERIC CBS

SDS status

Approved.

Hazard statements in full

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H411 Toxic to aquatic life with long lasting effects.

Signature

Jacq Pattinson



Exposure scenario Industrial Use of Caustic Soda

Identification

Product name	Sodium Hydroxide
REACH registration number	01-2119457892-27-XXXX
CAS number	1310-73-2
EC number	215-185-5
EU index number	011-002-00-6
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Industrial Use of Caustic Soda
Product category	PC2 Adsorbents. PC14 Metal surface treatment products PC15 Non-metal-surface treatment products. PC19 Intermediate. PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents PC21 Laboratory chemicals. PC27 Plant protection products. PC35 Washing and cleaning products PC36 Water softeners. PC37 Water treatment chemicals. PC40 Extraction agents.
Main sector	SU3 Industrial uses

Environment

Industrial Use of Caustic Soda

Environmental release category

ERC1 Manufacture of the substance
 ERC2 Formulation into mixture
 ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
 ERC6a Use of intermediate
 ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)
 ERC7 Use of functional fluid at industrial site
 ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
 ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor)
 ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
 ERC9a Widespread use of functional fluid (indoor)

Worker

Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
 PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
 PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
 PROC4 Chemical production where opportunity for exposure arises
 PROC5 Mixing or blending in batch processes
 PROC7 Industrial spraying
 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
 PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
 PROC10 Roller application or brushing
 PROC13 Treatment of articles by dipping and pouring.
 PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state Liquid , or: Solid, low dustiness

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Continuous release.

Risk management measures

Technical measures

Consider technical advances and process upgrades (including automation) for the elimination of releases. minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenario; clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. Prevent environmental discharge consistent with regulatory requirements.

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Industrial Use of Caustic Soda

Water Maximise waste water reuse.

Conditions and measures related to external treatment of waste for disposal

Waste treatment Pre-treatment of waste water by neutralization

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid , or: Solid, low dustiness

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or:
Local exhaust ventilation

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

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Ensure operatives are trained to minimise exposures. Automate activity where possible. Avoid splashing.

Risk management measures

Wear suitable coveralls to prevent exposure to the skin.

Use suitable eye protection and gloves.

Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

Use suitable respiratory protection if ventilation is inadequate.

3. Exposure estimation (Environment 1)

Substance will dissociate upon contact with water, the only effect is the pH effect, therefore, after passing through the STP, exposure is considered negligible and with no risk.

4. Guidance to check compliance with the exposure scenario (Environment 1)

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

3. Exposure estimation (Health 1)

Assessment method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated Worst case assumption

Industrial Use of Caustic Soda

Exposure

Liquid

Worker - inhalation: Exposure 0.17 mg/m³, DNEL 1 mg/m³, RCR 0.17

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Solid

Worker - inhalation: Exposure 0.01 mg/m³, DNEL 1 mg/m³, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC15 Use as laboratory reagent.

Solid

Worker - inhalation: Exposure 0.1 mg/m³, DNEL 1 mg/m³, RCR 0.1

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC14 Tableting, compression, extrusion, pelletisation, granulation

Solid

With local exhaust ventilation

Worker - inhalation: Exposure 0.2 mg/m³, DNEL 1 mg/m³, RCR 0.2

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

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

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC10 Roller application or brushing

PROC13 Treatment of articles by dipping and pouring.

PROC19 Manual activities involving hand contact

Solid

Worker - inhalation: Exposure 0.5 mg/m³, DNEL 1 mg/m³, RCR 0.5

PROC23 Open processing and transfer operations at substantially elevated temperature

Solid

With local exhaust ventilation

Wear a respirator providing a minimum efficiency of (%): 90

Worker - inhalation: Exposure 0.4 mg/m³, DNEL 1 mg/m³, RCR 0.4

PROC24 High (mechanical) energy work-up of substances bound in/on materials and/or articles

Solid

With local exhaust ventilation

Wear a respirator providing a minimum efficiency of (%): 90

Worker - inhalation: Exposure 0.5 mg/m³, DNEL 1 mg/m³, RCR 0.5

Dermal Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.



Exposure scenario Consumer Use of Caustic Soda

Identification

Product name	Sodium Hydroxide
REACH registration number	01-2119457892-27-XXXX
CAS number	1310-73-2
EC number	215-185-5
EU index number	011-002-00-6
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Consumer Use of Caustic Soda
Process scope	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products. Consumer uses e.g. as a carrier in cosmetics/personal care products, perfumes and fragrances. Note: for cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation.
Product category	PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents PC35 Washing and cleaning products PC39 Cosmetics, personal care. PC3 Air care products. PC8 Biocidal products PC27 Plant protection products. PC28 Perfumes, fragrances. PC31 Polishes and wax blends.
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) ERC9a Widespread use of functional fluid (indoor)

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Consumer Use of Caustic Soda

Product characteristics

Physical state	Solid, low dustiness , or: Liquid
Concentration details	Covers concentrations up to 100 %.

Conditions and measures related to external treatment of waste for disposal

Disposal method	This material and its container must be disposed of in a safe manner. Household solid waste (e.g. product packaging) is treated at municipal waste disposal sites.
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2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Solid, low dustiness , or: Liquid
Concentration details	Covers concentrations up to 100 %.

Other given operational conditions affecting Non-industrial exposure

Consumer information	Keep out of the reach of children. Concentration of substance in product: >2% Avoid using without gloves. If risk of splashing, wear safety goggles or face shield. If dust is generated: , or: Opportunity for aerosol exposure Use respiratory equipment with particle filter, type P2.
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3. Exposure estimation (Environment 1)

Substance will dissociate upon contact with water, the only effect is the pH effect, therefore, after passing through the STP, exposure is considered negligible and with no risk.

4. Guidance to check compliance with the exposure scenario (Environment 1)

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

3. Exposure estimation (Health 1)

Assessment method	The Consexpo model has been used to estimate consumer exposures, unless otherwise indicated.
Exposure	Consumer - inhalation, short-term - local: Exposure 0.3 - 1.6 mg/m ³ , DNEL 2 mg/m ³ , RCR <1

4. Guidance to check compliance with the exposure scenario (Health 1)

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.



Exposure scenario

Professional Use of Caustic Soda

Identification

Product name	Sodium Hydroxide
REACH registration number	01-2119457892-27-XXXX
CAS number	1310-73-2
EC number	215-185-5
EU index number	011-002-00-6
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Professional Use of Caustic Soda
Product category	PC2 Adsorbents. PC14 Metal surface treatment products PC15 Non-metal-surface treatment products. PC19 Intermediate. PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents PC21 Laboratory chemicals. PC27 Plant protection products. PC35 Washing and cleaning products PC36 Water softeners. PC37 Water treatment chemicals. PC40 Extraction agents.
Main sector	SU22 Professional uses

Environment

Professional Use of Caustic Soda

Environmental release category

ERC1 Manufacture of the substance
 ERC2 Formulation into mixture
 ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
 ERC6a Use of intermediate
 ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)
 ERC7 Use of functional fluid at industrial site
 ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
 ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor)
 ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
 ERC9a Widespread use of functional fluid (indoor)

Worker

Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
 PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
 PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
 PROC4 Chemical production where opportunity for exposure arises
 PROC5 Mixing or blending in batch processes
 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
 PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
 PROC10 Roller application or brushing
 PROC11 Non industrial spraying
 PROC13 Treatment of articles by dipping and pouring.
 PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state Liquid , or: Solid, low dustiness

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Continuous release.

Risk management measures

Technical measures

Consider technical advances and process upgrades (including automation) for the elimination of releases. minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenario; clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. Prevent environmental discharge consistent with regulatory requirements.

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Professional Use of Caustic Soda

Water Maximise waste water reuse.

Conditions and measures related to external treatment of waste for disposal

Waste treatment Pre-treatment of waste water by neutralization

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid , or: Solid, low dustiness

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or:
Local exhaust ventilation

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

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Ensure operatives are trained to minimise exposures. Automate activity where possible. Avoid splashing.

Risk management measures

Wear suitable coveralls to prevent exposure to the skin.

Use suitable eye protection and gloves.

Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

Use suitable respiratory protection if ventilation is inadequate.

3. Exposure estimation (Environment 1)

Substance will dissociate upon contact with water, the only effect is the pH effect, therefore, after passing through the STP, exposure is considered negligible and with no risk.

4. Guidance to check compliance with the exposure scenario (Environment 1)

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

3. Exposure estimation (Health 1)

Assessment method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated Worst case assumption

Professional Use of Caustic Soda

Exposure

Liquid

Worker - inhalation: Exposure 0.17 mg/m³, DNEL 1 mg/m³, RCR 0.17

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Solid.

Worker - inhalation: Exposure 0.01 mg/m³, DNEL 1 mg/m³, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC15 Use as laboratory reagent.

Solid.

Worker - inhalation: Exposure 0.1 mg/m³, DNEL 1 mg/m³, RCR 0.1

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC14 Tableting, compression, extrusion, pelletisation, granulation

Solid.

With local exhaust ventilation

Worker - inhalation: Exposure 0.2 mg/m³, DNEL 1 mg/m³, RCR 0.2

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

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

PROC10 Roller application or brushing

PROC13 Treatment of articles by dipping and pouring.

PROC19 Manual activities involving hand contact

Solid.

Worker - inhalation: Exposure 0.5 mg/m³, DNEL 1 mg/m³, RCR 0.5

PROC23 Open processing and transfer operations at substantially elevated temperature

Solid.

With local exhaust ventilation

Wear a respirator providing a minimum efficiency of (%): 90

Worker - inhalation: Exposure 0.4 mg/m³, DNEL 1 mg/m³, RCR 0.4

PROC24 High (mechanical) energy work-up of substances bound in/on materials and/or articles

Solid.

With local exhaust ventilation

Wear a respirator providing a minimum efficiency of (%): 90

Worker - inhalation: Exposure 0.5 mg/m³, DNEL 1 mg/m³, RCR 0.5

Dermal Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.