


Form 34 - COSHH Assessment Form

Substance Name:		Diesel
a. Skin Contact		<ul style="list-style-type: none"> Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.
b. Eye Contact		<ul style="list-style-type: none"> Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention
c. Inhalation		<ul style="list-style-type: none"> Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
d. Ingestion		<ul style="list-style-type: none"> If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing. Give nothing by mouth.
9	a. Storage General	Store in well ventilated area
	b. Storage Specific	<ul style="list-style-type: none"> Drum and small container storage: Drums should be stacked to a maximum of 3 high. Ensure adequate bunds in the event of damage Store away from sunlight Use properly labelled and closeable containers. Tank storage: Tanks must be specifically designed for use with this product. Bulk storage tanks should be bunded Locate away from heat and other sources of ignition.
10	Spillage	<ul style="list-style-type: none"> Evacuate the area of all nonessential personnel. Ventilate contaminated area thoroughly. Take precautionary measures against static discharges. Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate
11	Disposal	<ul style="list-style-type: none"> Treat as hazardous waste Use licensed waste contractors
12	Additional Site Specific Information	N/A

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Substance Name:		Renolin B 10 VG 32 Oil				
REACH Registration Number:	01-2119490822-33	Last Review:	13/01/2017			
Assessed By:	Colin Barton	Review Due:	12/01/2022			
Name of Site:	Waste Water	Reference No:	CA-WW-032 v1			
1	Physical Description	Pale yellow liquid				
2	Usage - General	Used to lubricated the hydraulic pumps on site				
	a. Risk from Chemical	Medium				
	b. Specific Use	The substance is used to lubricated the hydraulic pumps on site				
	c. Process Description	The chemical is added to the pumps by adding litres (qty does vary) into hyro-pack, in order to allow for the pumps to run in their normal application				
	d. Exposure Times	<30 minutes				
	e. Substitution	None				
3	Staff / Persons at Risk	Operators	Maintenance	Office Based	Contractors	Visitors
	Staff Numbers Exposed	1-5				
	Final Risk Ratings	M				
4	Hazards Identification					
	a. Pictograms					
	b. Hazard Statements As per EC 1272/2008	H35 Causes skin irritation H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.				
5	Tasks	A) Adding to pumps:				
	a. Controls	<ul style="list-style-type: none"> Area is restricted to persons performing the task. Task is performed under SWP Item to be stored in line with MSDS Deliveries made in bunded area. Wear PPE as listed. Remove contaminated clothes immediately and wash before further use				
	b. PPE	<ul style="list-style-type: none"> Hard hat (in date) Safety Goggles/face shield are recommended. Hi vis jacket or vest. Standard issue safety footwear (steel toe capped) Chemical resistant safety gloves - Nitri Foam Grip or equivalent Lightweight chemical resistant coveralls If handling large quantities, full chemical body suit & boots Other Protection - Chemical resistant apron 				
	c. Documents	Material Safety Data Sheet Task Specific Risk Assessment.				
6	Exposure Limits	None of the components have assigned exposure limits.				
	a. Estimation of Risk	Although the substance is contained, and PPE provides protection for residual risk, it has nonetheless been decided that residual risk should be rated as Medium due to the severity of potential consequences.				
7	Health Surveillance Required	No				
	Health Surveillance Details	No applicable				
8	First Aid	If first aid applied or ill health experienced, inform line manager and ensure incident reported in accordance with YW Accident Reporting Procedure. Where medical intervention is required, ensure this document and the Safety Data Sheet (SDS) is shown.				
	a. Skin Contact	Wash off immediately with soap and plenty of water. The product is not skin irritating.				
	b. Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Consult an eye specialist immediately. Go to an ophthalmic hospital if possible.				
	c. Inhalation	None Hazardous. .				
	d. Ingestion	Clean mouth with water and drink afterwards plenty of water.				

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Substance Name:		Renolin B 10 VG 32 Oil
9	a. Storage General	The substance is stored within PTP building or Gallery, and sat on a bunded area. The substance is stored alone with no contact / contamination with other chemicals, with the lids on the bottles tightly closed.
	b. Storage Specific	The chemical should be used in a well-ventilated area.
10	Spillage	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders sawdust). Keep in suitable, closed containers for disposal.
11	Disposal	Container to be segregated on site and disposed on as hazardous waste
12	Additional Site Specific Information	The product may not be released into the environment without control.

COSHH Assessment Form

Substance Name:		Sodium Bicarbonate Powder					
REACH Registration Number:	01-2119457606-32-xxxx	Last Review:	26/07/22				
Assessed By:	Helen Darby	Review Due:	26/07/23				
Name of Site:	Various	Reference No:	CA-WW-074 (Version 1)				
1	Physical Description	White crystalline powder.					
2	Usage - General	pH control.					
	a. Risk from Chemical	Low.					
	b. Specific Use	Control of pH, alkalinity and the purification process in water treatment facilities.					
	c. Process Description	Substance is delivered and offloaded by the supplier and stored on delivery pallets in 25 kg bags.					
	d. Exposure Times	< 15 minutes.					
	e. Substitution	Not possible.					
3	Staff / Persons at Risk	Operators	Driver				
	Staff Numbers Exposed	1 - 2	1				
	Final Risk Ratings	L		L			
4	Hazards Identification						
	a. Pictograms	Product is not classified as dangerous according to Regulation (EC) No. 1272/2008.					
	b. Hazard Statements As per EC 1272/2008	None.					
5	Tasks	A) Delivery:					
	a. Controls	<ul style="list-style-type: none"> Delivered by the supplier directly adjacent to the dosing point. Suitable signage in place. Driver checks delivery prior to offloading. Delivery driver controls offloading. Supplier delivery is undertaken in accordance with their own delivery procedures. Spill kit, emergency shower and eye wash facilities are available on site. 					
	b. PPE	Yorkshire Water 5 points of PPE.					
	c. Documents	Safety data sheet.					
		B) Dosing of powder					
	a. Controls	<ul style="list-style-type: none"> Do not dose in high winds or at exposed locations (to avoid dust exposure). Product can become slippery when wet – Any dosing area spillages must be cleaned up. Spill kit, emergency shower and eye wash facilities are available on site. 					
	b. PPE	5 points of PPE including: <ul style="list-style-type: none"> Safety goggles (EN 166). Nitrile gloves (EN 374). FFP3 dust mask (EN 149). 					
	c. Documents	<ul style="list-style-type: none"> Safety data sheet. Point of work risk assessment (PoWRA). 					
6	Exposure Limits	Contains no substances with occupational exposure limit values.					
	a. Estimation of Risk	Low.					
7	Health Surveillance Required	None.					
	Health Surveillance Details	N/A.					
8	First Aid	General – No specific precautions required.					
	a. Skin Contact	Wash off with soap and water. If skin irritation persists, seek medical attention.					
	b. Eye Contact	Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists, seek medical attention					
	c. Inhalation	Remove to fresh air. If symptoms persist, seek medical attention.					
	d. Ingestion	Rinse mouth with water. Never give anything by mouth to an unconscious person. Do not induce vomiting. If symptoms persist, seek medical attention.					

COSHH Assessment Form

Substance Name:		Sodium Bicarbonate Powder
9	a. Storage General	Store in original packaging away from other chemicals. Avoid moisture contamination.
	b. Storage Specific	Place on hardstanding protected by contained site drainage.
10	Spillage	<ul style="list-style-type: none"> • Do not flush into surface water or sanitary sewer system. • Avoid subsoil penetration. • Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders) or use spill kit booms and mats. • Keep spillage waste suitable, closed containers for disposal through a YW approved waste contractor.
11	Disposal	Dispose of any waste from through a YW approved waste contractor.
12	Additional Site Specific Information	Sites may have ferric sulphate dosing facilities and sodium bicarbonate is incompatible with ferric sulphate as reaction between the two chemicals is exothermic and produces carbon dioxide. The chemicals must be segregated and simultaneous deliveries of both chemicals prohibited. Clear signage must be in place. Avoid exposing sodium bicarbonate to > 50°C as decomposition may occur, also producing carbon dioxide.

SAFETY DATA SHEET

According to Regulations (EC) No 2015/830 and (EC) No 1907/2006

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

1.1. Product identifier

Product name: **FLOPAM™ EM 640 TBD**

Type of product: Mixture.

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

Identified uses: Processing aid for industrial applications.

Uses advised against: None.

1.3. Details of the supplier of the safety data sheet

Company: SNF (UK) Limited
Solutions House, Ripley Close
Normanton WF6 1TB
United Kingdom

Telephone: 01924-311000

Telefax: 01924-311099

E-mail address: sds@snf.fr

1.4. Emergency telephone number

24-hour emergency number: +33 477 36 87 25

National Poison Information Service: NHS Direct: 0845 4647 or 111 (24/24, 7/7); Scotland: NHS 24 - 08454 24 24 24 (24/24, 7/7)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008:

Not classified.

2.2. Label elements

Labelling according to Regulation (EC) 1272/2008:

Hazard pictogram(s): None.

Signal word: None.

Hazard statement(s):	None.
Precautionary statement(s):	None.
Additional elements:	EUH210 - Safety data sheet available on request

2.3. Other hazards

Spills produce extremely slippery surfaces.

PBT and vPvB assessment:

Does not fulfill the criteria according to Annex XIII of REACH.

For explanation of abbreviations see Section 16.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable, this product is not a substance.

3.2 Mixtures

Hazardous components

Hydrocarbons, C12-C15, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Concentration/ -range:	20 - 30%
ECHA List Number: (Assigned to substances without a CAS N° or other numerical identifier.)	920-107-4
REACH Registration Number:	01-2119453414-43-XXXX
Classification according to Regulation (EC) No.1272/2008:	Asp. Tox. 1;H304

Notes

Does not result in classification of the mixture if the kinematic viscosity is greater than 20.5 mm²/s measured at 40°C.

Isotridecanol, ethoxylated

Concentration/ -range:	< 5%
EC-No.:	Polymer
REACH Registration Number:	Not applicable (polymer).
Classification according to Regulation (EC) No.1272/2008:	Acute Tox. 4;H302, Eye Dam. 1;H318

For explanation of abbreviations see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Move to fresh air. No hazards which require special first aid measures.

Skin contact:

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. In case of persistent skin irritation, consult a physician.

Eye contact:

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately.

Ingestion:

Rinse mouth with water. Do NOT induce vomiting. Call a physician or poison control centre immediately.

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

None under normal use.

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

None reasonably foreseeable.

Other information:

None.

SECTION 5: Fire-fighting measures*5.1. Extinguishing media**Suitable extinguishing media:*

Water. Water spray. Foam. Carbon dioxide (CO₂). Dry powder.

Unsuitable extinguishing media:

None.

*5.2. Special hazards arising from the substance or mixture**Hazardous decomposition products:*

Ammonia. Carbon oxides (CO_x). Nitrogen oxides (NO_x). Hydrogen chloride. Hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

*5.3. Advice for fire-fighters**Protective measures:*

Wear self-contained breathing apparatus and protective suit.

Other information:

Spills produce extremely slippery surfaces.

SECTION 6: Accidental release measures*6.1. Personal precautions, protective equipment and emergency procedures**Personal precautions:*

Do not touch or walk through spilled material. Spills produce extremely slippery surfaces.

Protective equipment:

Wear adequate personal protective equipment (see Section 8 Exposure Controls/Personal Protection).

Emergency procedures:

Keep people away from spill/leak.

6.2. Environmental precautions

Do not contaminate water.

*6.3. Methods and material for containment and cleaning up**Small spills:*

Do not flush with water. Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal.

Large spills:

Do not flush with water. Dam up. Clean up promptly by scoop or vacuum.

Residues:

Soak up with inert absorbent material. After cleaning, flush away traces with water.

6.4. Reference to other sections

SECTION 7: Handling and storage; SECTION 8: Exposure controls/personal protection; SECTION 13: Disposal considerations;

SECTION 7: Handling and storage*7.1. Precautions for safe handling*

Avoid contact with skin and eyes. Renders surfaces extremely slippery when spilled. When using, do not eat, drink or smoke.

7.2. Conditions for safe storage, including any incompatibilities.

Keep away from heat and sources of ignition. Freezing will affect the physical condition and may damage the material. Incompatible with oxidizing agents.

7.3. Specific end use(s)

None.

SECTION 8. Exposure controls/personal protection*8.1. Control parameters**National occupational exposure limits:*

None.

Derived No and Minimum Effect Levels (DNELs/DMELs)

None known.

*Hydrocarbons, C12-C15, n-alkanes, isoalkanes, cyclics, < 2% aromatics**Isotridecanol, ethoxylated*

Predicted no-effect concentrations (PNECs)

None known.

8.2. Exposure controls

Appropriate engineering controls:

Ensure adequate ventilation, especially in confined areas. Use local exhaust if misting occurs. Natural ventilation is adequate in absence of mists.

Individual protection measures, such as personal protective equipment:*a) Eye/face protection:*

Safety glasses with side-shields.

b) Skin protection:

Wear coveralls and/or chemical apron and rubber footwear where physical contact can occur.

i) Hand protection:

PVC or other plastic material gloves.

c) Respiratory protection:

No personal respiratory protective equipment normally required.

d) Additional advice:

Wash hands and face before breaks and immediately after handling the product. Wash hands before breaks and at the end of workday.

Environmental exposure controls:

Do not allow uncontrolled discharge of product into the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<i>a) Appearance:</i>	Viscous liquid, Milky.
<i>b) Odour:</i>	Aliphatic.
<i>c) Odour Threshold:</i>	No data available.
<i>d) pH:</i>	4 - 6 @ 5 g/L
<i>e) Melting point/freezing point:</i>	< 5°C
<i>f) Initial boiling point and boiling range:</i>	> 100°C
<i>g) Flash point:</i>	Does not flash.
<i>h) Evaporation rate:</i>	No data available.
<i>i) Flammability (solid, gas):</i>	Not applicable.
<i>j) Upper/lower flammability or explosive limits:</i>	Not expected to create explosive atmospheres.
<i>k) Vapour pressure:</i>	2.3 kPa @ 20°C

<i>l) Vapour density:</i>	0.804 g/litre @ 20°C
<i>m) Relative density:</i>	1.0 - 1.1
<i>n) Solubility(ies):</i>	Completely miscible.
<i>o) Partition coefficient:</i>	Not applicable.
<i>p) Autoignition temperature:</i>	Not applicable.
<i>q) Decomposition temperature:</i>	> 150°C
<i>r) Viscosity:</i>	> 20.5 mm ² /s @ 40°C
<i>s) Explosive properties:</i>	Not expected to be explosive based on the chemical structure.
<i>t) Oxidizing properties:</i>	Not expected to be oxidising based on the chemical structure.

9.2. Other information

None.

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under recommended storage conditions.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Oxidizing agents may cause exothermic reactions.

10.4. Conditions to avoid

Protect from frost, heat and sunlight.

10.5. Incompatible materials

Oxidizing agents.

10.6. Hazardous decomposition products

Thermal decomposition may produce: hydrogen chloride gas, nitrogen oxides (NO_x), carbon oxides (CO_x). Ammonia. Hydrogen cyanide (hydrocyanic acid).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on the product as supplied:

Acute oral toxicity: LD50/oral/rat > 5000 mg/kg.

Acute dermal toxicity:	LD50/dermal/rat > 5000 mg/kg
Acute inhalation toxicity:	The product is not expected to be toxic by inhalation.
Skin corrosion/irritation:	Non-irritating to skin.
Serious eye damage/eye irritation:	Not irritating. (OECD 437)
Respiratory/skin sensitisation:	Not sensitizing.
Mutagenicity:	Not mutagenic.
Carcinogenicity:	Not carcinogenic.
Reproductive toxicity:	Not toxic for reproduction.
STOT - single exposure:	No known effects.
STOT - repeated exposure:	No known effects.
Aspiration hazard:	Due to the viscosity, this product does not present an aspiration hazard.

Relevant information on the hazardous components:

Hydrocarbons, C12-C15, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Acute oral toxicity:	LD50/oral/rat > 5000 mg/kg. (OECD 401)
Acute dermal toxicity:	LD50/dermal/rabbit > 5000 mg/kg (OECD 402)
Acute inhalation toxicity:	LC50/inhalation/4 h/rat = 4951 mg/m ³ . (OECD 403)
Skin corrosion/irritation:	Not irritating. (OECD 404) Repeated exposure may cause skin dryness or cracking.
Serious eye damage/eye irritation:	Not irritating. (OECD 405)
Respiratory/skin sensitisation:	By analogy with similar products, this product is not expected to be sensitizing. (OECD 406)
Mutagenicity:	Not mutagenic. (OECD 471, 473, 474, 476, 478, 479)
Carcinogenicity:	Carcinogenicity study in rats (OECD 451): Negative.
Reproductive toxicity:	By analogy with similar substances, this substance is not expected to be toxic for reproduction. NOAEL/rat = 300 ppm. (OECD 421)
STOT - single exposure:	No known effects.
STOT - repeated exposure:	NOAEL/oral/rat/90 days >= 3000 mg/kg/day (OECD 408) (Based on results obtained from tests on analogous products).
Aspiration hazard:	May be fatal if swallowed and enters airways.

Isotridecanol, ethoxylated

Acute oral toxicity:	LD50/oral/rat = 500 - 2000 mg/kg.
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<i>Acute dermal toxicity:</i>	LD50/dermal/rabbit > 2000 mg/kg
<i>Acute inhalation toxicity:</i>	No data available.
<i>Skin corrosion/irritation:</i>	Not irritating. (OECD 404)
<i>Serious eye damage/eye irritation:</i>	Causes serious eye irritation. (OECD 405)
<i>Respiratory/skin sensitisation:</i>	The results of testing on guinea pigs showed this material to be non-sensitizing.
<i>Mutagenicity:</i>	Not mutagenic.
<i>Carcinogenicity:</i>	Not carcinogenic.
<i>Reproductive toxicity:</i>	Two-Generation Reproduction Toxicity (OECD 416) NOAEL/rat > 250 mg/kg/day Prenatal Development Toxicity Study (OECD 414) NOAEL/Maternal toxicity/rat > 50 mg/kg/day NOAEL/Developmental toxicity/rat > 50 mg/kg/day
<i>STOT - single exposure:</i>	No known effects.
<i>STOT - repeated exposure:</i>	NOAEL/oral/rat/600 days = 50 mg/kg/day
<i>Aspiration hazard:</i>	No known effects.

SECTION 12: Ecological information

12.1. Toxicity

Information on the product as supplied:

<i>Acute toxicity to fish:</i>	LC50/Fish/96 hours = 10 - 100 mg/L (Estimated)
<i>Acute toxicity to invertebrates:</i>	EC50/Daphnia/48 hours = 10 - 100 mg/L (Estimated)
<i>Acute toxicity to algae:</i>	Algal inhibition tests are not appropriate. The flocculation characteristics of the product interfere directly in the test medium preventing homogenous distribution which invalidates the test.
<i>Chronic toxicity to fish:</i>	No data available.
<i>Chronic toxicity to invertebrates:</i>	No data available.
<i>Toxicity to microorganisms:</i>	No data available.
<i>Effects on terrestrial organisms:</i>	No data available. Readily biodegradable, exposure to soil is unlikely.
<i>Sediment toxicity:</i>	No data available. Readily biodegradable, exposure to sediment is unlikely.

Relevant information on the hazardous components:

Hydrocarbons, C12-C15, n-alkanes, isoalkanes, cyclics, < 2% aromatics

<i>Acute toxicity to fish:</i>	LC0/Oncorhynchus mykiss/96 hours > 1000 mg/L. (OECD 203)
<i>Acute toxicity to invertebrates:</i>	EC0/Daphnia magna/48 hours > 1000 mg/L. (OECD 202)

Acute toxicity to algae:	IC0/Pseudokirchneriella subcapitata/72 hours > 1000 mg/L. (OECD 201)
Chronic toxicity to fish:	NOEC/Oncorhynchus mykiss/28 days > 1000 mg/L.
Chronic toxicity to invertebrates:	NOEC/Daphnia magna/21 days > 1000 mg/L.
Toxicity to microorganisms:	EC50/Tetrahymena pyriformis/ 48h > 1000 mg/L.
Effects on terrestrial organisms:	No data available.
Sediment toxicity:	No data available. Readily biodegradable, exposure to sediment is unlikely.

Isotridecanol, ethoxylated

Acute toxicity to fish:	LC50/Cyprinus carpio/96 hours = 1 - 10 mg/L (OECD 203)
Acute toxicity to invertebrates:	EC50/Daphnia/48 hours = 1 - 10 mg/L (OECD 202)
Acute toxicity to algae:	IC50/Desmodesmus subspicatus/72 hours = 1 - 10 mg/L (OECD 201)
Chronic toxicity to fish:	No data available.
Chronic toxicity to invertebrates:	No data available.
Toxicity to microorganisms:	EC10/activated sludge/17 hours > 10000 mg/L (DIN 38412-8)
Effects on terrestrial organisms:	No data available.
Sediment toxicity:	No data available.

12.2. Persistence and degradability

Information on the product as supplied:

Degradation:	Readily biodegradable.
Hydrolysis:	At natural pHs (>6) the polymer degrades due to hydrolysis to more than 70% in 28 days. The hydrolysis products are not harmful to aquatic organisms.
Photolysis:	No data available.

Relevant information on the hazardous components:Hydrocarbons, C12-C15, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Degradation:	Readily biodegradable.
Hydrolysis:	Does not hydrolyse.
Photolysis:	No data available.

Isotridecanol, ethoxylated

Degradation:	Readily biodegradable. > 60% / 28 days (OECD 301 B)
Hydrolysis:	Does not hydrolyse.

Photolysis: No data available.

12.3. Bioaccumulative potential

Information on the product as supplied:

The product is not expected to bioaccumulate.

Partition co-efficient (Log Pow): Not applicable.

Bioconcentration factor (BCF): No data available.

Relevant information on the hazardous components:

Hydrocarbons, C12-C15, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Partition co-efficient (Log Pow): 3 - 6

Bioconcentration factor (BCF): No data available.

Isotridecanol, ethoxylated

Partition co-efficient (Log Pow): > 3

Bioconcentration factor (BCF): No data available.

12.4. Mobility in soil

Information on the product as supplied:

No data available.

Relevant information on the hazardous components:

Hydrocarbons, C12-C15, n-alkanes, isoalkanes, cyclics, < 2% aromatics

K_{oc}: No data available.

Isotridecanol, ethoxylated

K_{oc}: > 5000

12.5. Results of PBT and vPvB assessment

PBT assessment:

Does not fulfill the criteria according to Annex XIII of REACH.

vPvB assessment:

Does not fulfill the criteria according to Annex XIII of REACH.

12.6. Other adverse effects

None.

SECTION 13: Disposal considerations*13.1. Waste treatment methods*Waste from residues/unused products:

Dispose in accordance with local and national regulations.

Contaminated packaging:

Rinse empty containers with water and use the rinse-water to prepare the working solution. If recycling is not practicable, dispose of in compliance with local regulations.

Recycling:

Store containers and offer for recycling of material when in accordance with the local regulations.

SECTION 14: Transport information

Land transport (ADR/RID)

Not classified.

Sea transport (IMDG)

Not classified.

Air transport (IATA)

Not classified.

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

All components of this product have been registered or pre-registered with the European Chemicals Agency or are exempt from registration.

15.2. Chemical safety assessment

A Chemical Safety Assessment for this product has been carried out by the person responsible for producing this Safety Data Sheet. All relevant information used to conduct this assessment are included in this Safety Data Sheet as well any as any resulting Risk Reduction Measures.

SECTION 16: Other information

This data sheet contains changes from the previous version in section(s):

SECTION 3. Composition/information on ingredients, SECTION 16. Other Information.

Key or legend to abbreviations and acronyms used in the safety data sheet:Abbreviations

Asp. Tox. 1 = Aspiration hazard Category Code 1

Acute Tox. 4 = Acute toxicity Category Code 4

Eye Dam 1 = Serious eye damage/eye irritation Category Code 1

H-Phrases

H302 - Harmful if swallowed

H304 - May be fatal if swallowed and enters airways

H318 - Causes serious eye damage

This SDS was prepared in accordance with the following:

Regulation (EU) No. 2015/830

Regulation (EC) No. 1272/2008

Regulation (EC) No. 1907/2006

Version: 16.01.b

ENCC046

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

ANNEX(ES)

This product is not hazardous as supplied and does not contain:

- hazardous components which require REACH registration; or,
- demonstrate relevant effects which would require a chemical safety assessment; or,
- are present at concentrations above their cut-off value.

Therefore, according to Regulation (EC) No 1907/2006, Article 31, paragraph 7, an Exposure Scenario is not required as an annex to the Safety Data Sheet.

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 and its amendments

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

1.1. Product identifier

Product name: **FLOPAM™ FO 4490**

Type of product: Mixture.

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

Identified uses: Processing aid for industrial applications.

Uses advised against: None.

1.3. Details of the supplier of the safety data sheet

Company: SNF (UK) Limited
Solutions House, Ripley Close
Normanton WF6 1TB
United Kingdom

Telephone: 01924-311000

Telefax: 01924-311099

E-mail address: sds@snf.fr

1.4. Emergency telephone number

24-hour emergency number: +33 477 36 87 25

National Poison Information Service: NHS Direct: 0845 4647 or 111 (24/24, 7/7); Scotland: NHS 24 - 08454 24 24 24 (24/24, 7/7)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Not classified.

2.2. Label elements

Labelling according to Regulation (EC) 1272/2008:

Hazard pictogram(s): None.

Signal word: None.

Hazard statement(s): None.
Precautionary statement(s): None.
Additional elements: EUH210 - Safety data sheet available on request

2.3. Other hazards

Aqueous solutions or powders that become wet render surfaces extremely slippery.

PBT and vPvB assessment:

Does not fulfill the criteria according to Annex XIII of REACH.

For explanation of abbreviations see Section 16.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable, this product is a mixture.

3.2. Mixtures

Hazardous components

Adipic acid

Concentration/ -range: <= 2.5%
EC-No.: 204-673-3
REACH Registration Number: 01-2119457561-38-XXXX
Classification according to Regulation (EC) No.1272/2008: Eye Irrit. 2;H319

Sulphamidic acid

Concentration/ -range: <= 2.5%
EC-No.: 226-218-8
REACH Registration Number: 01-2119982121-44-0000 /
01-2119488633-28-XXXX
Classification according to Regulation (EC) No.1272/2008: Skin Irrit. 2;H315, Eye Irrit. 2;H319, Aquatic Chronic 3;H412

For explanation of abbreviations see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Move to fresh air. Get medical attention if symptoms occur.

Skin contact:

Wash off with soap and plenty of water. Get medical attention if irritation develops and persists.

Eye contact:

Rinse immediately with plenty of water, also under the eyelids. Get medical attention.

Ingestion:

Rinse mouth. If conscious, give the victim plenty of water to drink. Induce vomiting, but only if victim is fully conscious.

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

Powder can cause localised skin irritation in folds of the skin or under tight clothing. Contact with dust can cause mechanical irritation or drying of the skin.

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

None.

Other information:

No information available.

SECTION 5: Fire-fighting measures*5.1. Extinguishing media**Suitable extinguishing media:*

Water. Water spray. Foam. Carbon dioxide (CO₂). Dry powder.

Warning! Aqueous solutions or powders that become wet render surfaces extremely slippery.

Unsuitable extinguishing media:

none.

*5.2. Special hazards arising from the substance or mixture**Hazardous decomposition products:*

Thermal decomposition may produce: hydrogen chloride gas, nitrogen oxides (NO_x), carbon oxides (CO_x). Hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

*5.3. Advice for fire-fighters**Protective measures:*

Wear self contained breathing apparatus for fire fighting if necessary.

Other information:

Aqueous solutions or powders that become wet render surfaces extremely slippery.

SECTION 6: Accidental release measures*6.1. Personal precautions, protective equipment and emergency procedures**Personal precautions:*

Aqueous solutions or powders that become wet render surfaces extremely slippery.

Protective equipment:

Wear adequate personal protective equipment (see Section 8 Exposure Controls/Personal Protection).

Emergency procedures:

Keep people away from spill/leak. Prevent further leakage or spillage if safe to do so.

6.2. Environmental precautions

As with all chemical products, do not flush into surface water.

*6.3. Methods and material for containment and cleaning up**Small spills:*

Do not flush with water. Clean up promptly by sweeping or vacuum.

Large spills:

Do not flush with water. Prevent unauthorized access. Sweep up and shovel into suitable containers for disposal.

Residues:

Sweep up to prevent slip hazard. After cleaning, flush away traces with water.

6.4. Reference to other sections

SECTION 7: Handling and storage; SECTION 8: Exposure controls/personal protection; SECTION 13: Disposal considerations;

SECTION 7: Handling and storage*7.1. Precautions for safe handling*

Avoid contact with skin and eyes. Avoid dust formation. Avoid breathing dust. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Keep in a dry place. Incompatible with oxidizing agents.

7.3. Specific end use(s)

Processing aid for industrial applications.

SECTION 8. Exposure controls/personal protection*8.1. Control parameters**National occupational exposure limits:*

None.

*Derived No and Minimum Effect Levels (DNELs/DMELs)**Adipic acid**Workers**Acute systemic effects:*

Skin contact 38 mg/kg/day

Inhalation 264 mg/m³

Acute local effects:

Inhalation 5 mg/m³

Long-term systemic effects:

Skin contact 38 mg/kg/day

Inhalation 264 mg/m³

Long-term local effects:

Inhalation 5 mg/m³

Consumer:

Acute systemic effects:

Ingestion 19 mg/kg/day

Skin contact 19 mg/kg/day

Inhalation 65 mg/m³

Long-term systemic effects:

Ingestion 19 mg/kg/day

Skin contact 19 mg/kg/day

Inhalation 65 mg/m³

Sulphamidic acid

Workers

Long-term systemic effects:

Skin contact 10 mg/kg/day

Consumer:

Long-term systemic effects:

Ingestion 5 mg/kg/day

Skin contact 5 mg/kg/day

*Predicted no-effect concentrations (PNECs)**Adipic acid*

Freshwater: 0.126 mg/L

Marine water: 0.0126 mg/L

Intermittent release: 0.46 mg/L

Sewage treatment plant: 59.1 mg/L

Sediment (freshwater): 0.484 mg/kg

Sediment (marine water): 0.0484 mg/kg

Soil: 0.0228 mg/kg

Sulphamidic acid

Freshwater: 0.048 mg/L

Marine water: 0.0048 mg/L

Intermittent release: 0.48 mg/L

Sewage treatment plant: 2 mg/L

Sediment (freshwater): 0.173 mg/kg

Sediment (marine water): 0.0173 mg/kg

Soil: 0.00638 mg/kg

Oral (secondary poisoning): The product is not expected to bioaccumulate.

8.2. Exposure controls

Appropriate engineering controls:

Use local exhaust if dusting occurs. Natural ventilation is adequate in absence of dusts.

Individual protection measures, such as personal protective equipment:

a) Eye/face protection:

Safety glasses with side-shields. Do not wear contact lenses where this product is used.

b) Skin protection:

Chemical resistant apron or protective suit if splashing or repeated contact with solution is likely.

i) Hand protection:

PVC or other plastic material gloves.

c) Respiratory protection:

Dust safety masks recommended where working powder concentration is more than 10 mg/m³.

d) Additional advice:

Wash hands before breaks and at the end of workday. Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls:

Do not allow uncontrolled discharge of product into the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

a) Appearance:	Granular solid, white.
b) Odour:	None.
c) Odour Threshold:	Not applicable.
d) pH:	2.5 - 4.5 @ 5g/L
e) Melting point/freezing point:	> 100°C
f) Initial boiling point and boiling range:	Not applicable.
g) Flash point:	Not applicable.
h) Evaporation rate:	Not applicable.
i) Flammability (solid, gas):	Not combustible.
j) Upper/lower flammability or explosive limits:	Not expected to create explosive atmospheres.
k) Vapour pressure:	Not applicable.
l) Vapour density:	Not applicable.
m) Relative density:	0.6 - 0.9
n) Solubility(ies):	Soluble in water.

<i>o) Partition coefficient:</i>	< 0
<i>p) Autoignition temperature:</i>	Not applicable.
<i>q) Decomposition temperature:</i>	> 200°C
<i>r) Viscosity:</i>	See Technical Bulletin.
<i>s) Explosive properties:</i>	Not expected to be explosive based on the chemical structure.
<i>t) Oxidizing properties:</i>	Not expected to be oxidising based on the chemical structure.

9.2. Other information

None.

SECTION 10: Stability and reactivity

10.1. Reactivity

Hazardous polymerisation does not occur.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Oxidizing agents may cause exothermic reactions.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Oxidizing agents.

10.6. Hazardous decomposition products

Thermal decomposition may produce: hydrogen chloride gas, nitrogen oxides (NO_x), carbon oxides (CO_x). Hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on the product as supplied:

<i>Acute oral toxicity:</i>	LD50/oral/rat > 5000 mg/kg.
<i>Acute dermal toxicity:</i>	LD50/dermal/rat > 5000 mg/kg
<i>Acute inhalation toxicity:</i>	The product is not expected to be toxic by inhalation.
<i>Skin corrosion/irritation:</i>	Not irritating.

<i>Serious eye damage/eye irritation:</i>	Testing conducted according to the Draize technique showed the material produces no corneal or iridial effects and only slight transitory conjunctival effects similar to those which all granular materials have on conjunctivae.
<i>Respiratory/skin sensitisation:</i>	The results of testing on guinea pigs showed this material to be non-sensitizing.
<i>Mutagenicity:</i>	Not mutagenic.
<i>Carcinogenicity:</i>	Not carcinogenic.
<i>Reproductive toxicity:</i>	Not toxic for reproduction.
<i>STOT - single exposure:</i>	No known effects.
<i>STOT - repeated exposure:</i>	No known effect.
<i>Aspiration hazard:</i>	No hazards resulting from the material as supplied.

Relevant information on the hazardous components:

Adipic acid

<i>Acute oral toxicity:</i>	LD50/oral/rat > 2000 mg/kg.
<i>Acute dermal toxicity:</i>	LD50/dermal/rabbit > 2000 mg/kg
<i>Acute inhalation toxicity:</i>	LC0/inhalation/4 hours/rat > 7.7 mg/L
<i>Skin corrosion/irritation:</i>	Slightly irritating.
<i>Serious eye damage/eye irritation:</i>	Not irritating. (OECD 405) (SNF)
<i>Respiratory/skin sensitisation:</i>	Not sensitizing.
<i>Mutagenicity:</i>	Negative in the In vitro Mammalian Cell Gene Mutation Test (OECD 476).
<i>Carcinogenicity:</i>	Not carcinogenic.
<i>Reproductive toxicity:</i>	Not toxic for reproduction.
<i>STOT - single exposure:</i>	No known effects.
<i>STOT - repeated exposure:</i>	No known effect.
<i>Aspiration hazard:</i>	No known effects.

Sulphamidic acid

<i>Acute oral toxicity:</i>	LD50/oral/rat > 2000 mg/kg.
-----------------------------	-----------------------------

<i>Acute dermal toxicity:</i>	NOAEL/dermal/rat = 2000 mg/kg (OECD 402)
<i>Acute inhalation toxicity:</i>	The product is not expected to be toxic by inhalation.
<i>Skin corrosion/irritation:</i>	Not irritating. (OECD 404) (SNF)
<i>Serious eye damage/eye irritation:</i>	Moderately irritating to the eyes. (EPA OPPTS 870.2400)
<i>Respiratory/skin sensitisation:</i>	The product is not expected to be sensitizing.
<i>Mutagenicity:</i>	Negative in the Ames Test (OECD 471) Negative in the In vitro Mammalian Cell Gene Mutation Test (OECD 476). Not mutagenic. (OECD 472, 487)
<i>Carcinogenicity:</i>	Based on the absence of mutagenicity, it is unlikely that the substance is carcinogenic.
<i>Reproductive toxicity:</i>	No data available.
<i>STOT - single exposure:</i>	No known effects.
<i>STOT - repeated exposure:</i>	No known effect.
<i>Aspiration hazard:</i>	No known effects.

SECTION 12: Ecological information

12.1. Toxicity

Information on the product as supplied:

<i>Acute toxicity to fish:</i>	LC50/Danio rerio/96 hours = 5 - 10 mg/L (OECD 203)
<i>Acute toxicity to invertebrates:</i>	EC50/Daphnia magna/48 hours = 20 - 50 mg/L. (OECD 202)
<i>Acute toxicity to algae:</i>	Algal inhibition tests are not appropriate. The flocculation characteristics of the product interfere directly in the test medium preventing homogenous distribution which invalidates the test.
<i>Chronic toxicity to fish:</i>	No data available.
<i>Chronic toxicity to invertebrates:</i>	No data available.
<i>Toxicity to microorganisms:</i>	No data available.
<i>Effects on terrestrial organisms:</i>	No data available. Readily biodegradable, exposure to soil is unlikely.
<i>Sediment toxicity:</i>	No data available. Readily biodegradable, exposure to sediment is unlikely.

Relevant information on the hazardous components:

Adipic acid

<i>Acute toxicity to fish:</i>	LC0/Danio rerio/96 hours \geq 1000 mg/L
<i>Acute toxicity to invertebrates:</i>	EC50/Daphnia magna/48 hours = 46 mg/L. (OECD 202)
<i>Acute toxicity to algae:</i>	IC50/Selenastrum capricornutum/72 hours = 59 mg/L (OECD 201)
<i>Chronic toxicity to fish:</i>	No data available.
<i>Chronic toxicity to invertebrates:</i>	NOEC/Daphnia magna/21 days = 6.3 mg/L (OECD 211)
<i>Toxicity to microorganisms:</i>	EC50/activated sludge/3 hours = 4747 mg/L (OECD 209)
<i>Effects on terrestrial organisms:</i>	No data available.
<i>Sediment toxicity:</i>	No data available.

Sulphamidic acid

<i>Acute toxicity to fish:</i>	LC50/Pimephales promelas/96 hours = 70.3 mg/L (OECD 203)
<i>Acute toxicity to invertebrates:</i>	EC50/Daphnia magna/48 hours = 71.6 mg/L. (OECD 202)
<i>Acute toxicity to algae:</i>	IC50/Scenedesmus subspicatus/72 hours = 48 mg/L (OECD 201)
<i>Chronic toxicity to fish:</i>	No data available.
<i>Chronic toxicity to invertebrates:</i>	No data available.
<i>Toxicity to microorganisms:</i>	EC50/activated sludge/3 hours $>$ 200 mg/L (OECD 209)
<i>Effects on terrestrial organisms:</i>	No data available.
<i>Sediment toxicity:</i>	No data available.

12.2. Persistence and degradability

Information on the product as supplied:

<i>Degradation:</i>	Readily biodegradable.
<i>Hydrolysis:</i>	At natural pHs ($>$ 6) the polymer degrades due to hydrolysis to more than 70% in 28 days. The hydrolysis products are not harmful to aquatic organisms.
<i>Photolysis:</i>	No data available.

Relevant information on the hazardous components:

Adipic acid

Degradation: Readily biodegradable. > 70% / 28 days (OECD 301 D)

Hydrolysis: Does not hydrolyse.

Photolysis: Half-life (indirect photolysis): = 2.9 days

Sulphamidic acid

Degradation: Not relevant (inorganic).

Hydrolysis: Does not hydrolyse.

Photolysis: No data available.

12.3. Bioaccumulative potential

Information on the product as supplied:

The product is not expected to bioaccumulate.

Partition co-efficient (Log Pow): < 0

Bioconcentration factor (BCF): No data available.

Relevant information on the hazardous components:Adipic acid

Partition co-efficient (Log Pow): 0.093 @ 25°C, pH 3.3

Bioconcentration factor (BCF): No data available.

Sulphamidic acid

Partition co-efficient (Log Pow): -4.34 @ 20°C

Bioconcentration factor (BCF): No data available.

12.4. Mobility in soil

Information on the product as supplied:

No data available.

Relevant information on the hazardous components:

Adipic acid

Koc: No data available.

Sulphamidic acid

Koc: No data available.

*12.5. Results of PBT and vPvB assessment**PBT assessment:*

Does not fulfill the criteria according to Annex XIII of REACH.

vPvB assessment:

Does not fulfill the criteria according to Annex XIII of REACH.

12.6. Other adverse effects

None known.

SECTION 13: Disposal considerations*13.1. Waste treatment methods*Waste from residues/unused products:

Dispose in accordance with local and national regulations. Can be landfilled or incinerated, when in compliance with local regulations.

Contaminated packaging:

Rinse empty containers with water and use the rinse-water to prepare the working solution. If recycling is not practicable, dispose of in compliance with local regulations. Can be landfilled or incinerated, when in compliance with local regulations.

Recycling:

In accordance with local and national regulations.

SECTION 14: Transport information

Land transport (ADR/RID)

Not classified.

Sea transport (IMDG)

Not classified.

Air transport (IATA)

Not classified.

SECTION 15: Regulatory information

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

All components of this product have been registered or pre-registered with the European Chemicals Agency or are exempt from registration.

15.2. Chemical safety assessment

A Chemical Safety Assessment for this product has been carried out by the person responsible for producing this Safety Data Sheet. All relevant information used to conduct this assessment are included in this Safety Data Sheet as well any as any resulting Risk Reduction Measures.

SECTION 16: Other information

This data sheet contains changes from the previous version in section(s):

SECTION 13. Disposal considerations, SECTION 16. Other Information.

Key or legend to abbreviations and acronyms used in the safety data sheet:

Abbreviations

Eye Irrit. 2 = Serious eye damage/eye irritation Category Code 2

Skin Irrit. 2 = Skin corrosion/irritation Category Code 2

Aquatic Chronic 3 = Hazardous to the aquatic environment Chronic Category Code 3

H-Phrases

H319 - Causes serious eye irritation

H315 - Causes skin irritation

H412 - Harmful to aquatic life with long lasting effects

This SDS was prepared in accordance with the following:

Regulation (EC) N°1907/2006, as amended

Regulation (EC) N°1272/2008, as amended

Version: 17.01.a

PRCC003

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

ANNEX(ES)

This product is not hazardous as supplied and/or does not contain hazardous components:

- which require REACH registration; or,
- which demonstrate relevant effects which would require a chemical safety assessment; or,
- which are present at concentrations above their cut-off value.

Therefore, according to Regulation (EC) No 1907/2006, Article 31, paragraph 7, an Exposure Scenario is not required as an annex to the Safety Data Sheet.

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

Product Name: FLOFOAM 139F

Supplier: SNF (UK) LIMITED
Solutions House, Ripley Close,
Normanton Industrial Estate
Normanton, WF6 1TB.

Telephone Number: +44 (0) 1924 311000

Fax: +44 (0) 1924 311099

Product Use: Process aid for industrial applications.

2. HAZARDS IDENTIFICATION

This product is not hazardous to health according to EC criteria.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components presenting hazards : Blend of hydrocarbons, fatty acid esters and surfactants.

Hazardous Component	CAS No	Concentration	R Phrase	Classification
Kerosene	064742-81-0	<55%	R65	Xn

4. FIRST AID MEASURES

Product in eyes : Wash thoroughly with water. If irritation persists, seek medical advice.

Product on skin : Remove all contaminated clothing and footwear. Wash with soap and water. In case of persistent skin irritation, consult a physician.

Product inhaled : No hazard anticipated.

Product ingested : Do not induce vomiting. Give milk to drink. Seek medical advice.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : WATER SPRAY, FOAM, CARBON DIOXIDE (CO₂), POWDERS, AQUEOUS FILM FORMING FOAM (AFFF).

Unsuitable extinguishing media : Strong water jet.

Specific hazards : NOT classified as flammable according to EC criteria, but may present a risk in the event of a fire.
Combustible liquid. However, it does not catch fire easily.

Product Name: FLOFOAM 139F

6. ACCIDENTAL RELEASE MEASURES

Wash small spillages away with cold water. Absorb large spillages with sand or earth.
Dispose in accordance with national and local regulations.

7. HANDLING AND STORAGE

Store between 5°C and 30°C. Extremes of temperature may adversely affect viscosity and stability.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures : No specific measures are required provided the product is handled in accordance with the general rules of occupational hygiene and safety.

Personal protective equipment :

Hand protection : Protective gloves.

Eye Protection : Goggles or visor.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear amber liquid.

S.G.: Approx 0.88.

10. STABILITY AND REACTIVITY

No known hazardous reactions.

11. TOXICOLOGICAL INFORMATION

Product in eyes : This product is mildly irritating to the eyes.

Product on skin : Moderately irritant to the skin, prolonged contact may cause dermatitis.

Product inhaled : No hazard anticipated.

Product ingested : This product has low systemic toxicity. If aspiration occurs (e.g. during vomiting) this can lead to intense irritation of the lung tissue, and chemically induced pneumonia.

Product Name: FLOFOAM 139F

12. ECOLOGICAL INFORMATION

OECD 301D Biodegradability test. 14 days >80% Biodegradation.

13. DISPOSAL CONSIDERATIONS

Incineration under approved conditions.

14. TRANSPORT INFORMATION

This product is not classified as dangerous.

15. REGULATORY INFORMATION

EC Labelling

- Symbol (s)	None.
- R Phrase (s)	None.
- S Phrase (s)	None.

16. OTHER INFORMATION

Further information:

This MSDS was prepared in accordance with the following:

Council Directive 92/32/EEC of 30 April 1992 amending for the seventh time Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances and all subsequent adaptations to technical progress.

Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations.

Commission Directive 2001/58/EC of 27 July 2001 amending for the second time Directive 91/155/EEC defining and laying down the detailed arrangements for the system of specific information relating to dangerous preparations in implementation of Article 14 of European Parliament and Council Directive 1999/45/EC and relating to dangerous substances in implementation of Article 27 of Council Directive 67/548/EEC (safety data sheets).

ISO 110140-1 : Material Safety Data Sheet for Chemical Product.

Contact: SNF (UK) Ltd.
Tele: 01924 311000

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SAFETY DATA SHEET

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

1.1 Product identifier

- Product Name: OXYGEN SCAVENGER PLUS
- Product Part Number: 698712 (25 liter)

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

- Use of the substance/mixture: Water treatment

1.3 Details of the supplier of the safety data sheet

- Name of Supplier: Wilhelmsen Ships Service AS
- Address of Supplier: Willem Barentzstraat 50, 3165AB Rotterdam, The Netherlands
- Telephone: Telephone: +31 4877 777 Fax: +31 4877 888
-
- Head office: Wilhelmsen Ships Service AS
- Strandveien 20, N1324 Lysaker
- Norway, Tel: (47) 6349 440 35
-
-
- Other suppliers SEE SECTION 16!!!
- For quotations contact your local Customer Services
-
- Responsible Person: Product HSE Manager
- Telephone: +31 10 4877775
- Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com
- Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com

1.4 Emergency telephone number

- ****ONLY TO BE USED IN CASE OF AN INCIDENT****
-
- International 24hrs Emergency NCEC:+ 44 1865 407333
- American 24hrs Emergency CHEMTREC (800) 424 9300
- American Chemistry Council 24hrs +1 703 527 3887
- Greece: Poisoning emergency center, +30 210 7793777
- Norway: Poison information centre, +47 22591300
- Sweden: Poison information centre, +46 08 33 12 31
- China NRCC 24hrs emergency telephone number: +86-0532-8388 9090
- Wilhelmsen Ships Service, Melbourne, AUSTRALIA Emergency 24hrs: +61 3 9630 0998

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

- Council Directive 1999/45/EEC Classification, packing and labelling of dangerous preparations.
- Refer to current The Dangerous Substances Directive (67/548/EEC)
- Symbols: Xn
- Harmful by inhalation and in contact with skin (R20/21)
- Irritating to eyes, respiratory system and skin (R36/37/38)
-
- Regulations 1272/2008/EEC. Classification, labeling and packing of dangerous substances and preparations

SECTION 2 Hazards identification (....)

- Symbols: GHS07
- Signal Word: Warning
- Acute Tox. 4
- Eye Irrit. 2
- Skin Irrit. 2
- Harmful if swallowed (H302).
- Causes serious eye irritation (H319).
- Causes skin irritation (H315).

2.2 Label elements

- Signal Word: Warning
-
- Contains:
 - Diethylhydroxylamine
 -
- Hazard phrases
 - Harmful if swallowed (H302).
 - Causes serious eye irritation (H319).
 - Causes skin irritation (H315).
-
- Precautionary Phrases
 - Wear protective gloves/protective clothing/eye protection/face protection (P280).
 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing (P305+P351+P338).
 - If eye irritation persists: Get medical advice/attention (P337+P313).
 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician (P301+P310).

2.3 Other hazards

- Not applicable
- Not a PBT according to REACH Annex XIII
- Odour: Amine odour
- Appearance: Liquid, pale yellow, soluble in water

SECTION 3 Composition/information on ingredients**3.1 Mixtures**

- Diethylhydroxylamine
 - Concentration: 10-30%
 - CAS Number: 3710-84-7
 - EC Number: 223-055-4
 - Symbols: Xn, GHS07, GHS02
 - R/H Phrases: R10, R20/21, R36/37/38 - H226, H302, H319, H315
 - Categories: Flam. Liq. 3, Acute Tox. 4, Eye Irrit. 2, Skin Irrit. 2

SECTION 4 First aid measures**4.1 Description of first aid measures**

SECTION 4 First aid measures (....)

- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower (P303+P361+P353).
 - IF ON SKIN: Wash with plenty of soap and water (P302+P352).
 - Contaminated clothing should be laundered before reuse
 -
 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing (P305+P351+P338).
 - If eye irritation persists: Get medical advice/attention (P337+P313).
 -
 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting (P301+P330+P331).
 - Give 200-300mls (half pint) water to drink
 - Obtain immediate medical attention
 -
 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P340).
 - When in doubt or symptoms persist, seek medical attention
- 4.2 Most important symptoms and effects, both acute and delayed
- Causes irritation
 - May cause gastro-intestinal disturbances
- 4.3 Indication of any immediate medical attention and special treatment needed
- No information available
-

SECTION 5 Fire-fighting measures

- 5.1 Extinguishing media
- Not flammable. In case of fire use extinguishing media appropriate to surrounding conditions
- 5.2 Special hazards arising from the substance or mixture
- Smoke from fires is irritating
- 5.3 Advice for firefighters
- Wear chemical protection suit and positive-pressure breathing apparatus
-

SECTION 6 Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures
- Wear protective clothing as per section 8
- 6.2 Environmental Precautions
- Do not allow to enter public sewers and watercourses
 - Do not flush spilt material into any public water system
- 6.3 Methods and material for containment and cleaning up
- Absorb spillage in inert material and shovel up
 - Ventilate the area and wash spill site after material pick-up is complete
- 6.4 Reference to other sections
- See Section 13
-

SECTION 7 Handling and storage

- 7.1 Precautions for safe handling
- Wear protective clothing as per section 8
 - Do not get in eyes, on skin, or on clothing (P262).
 - Eyewash bottles should be available
- 7.2 Conditions for safe storage, including any incompatibilities
-

SECTION 7 Handling and storage (....)

- Store in a dry place. Store in a closed container (P402+P404).
- Store in a well-ventilated place (P403).

7.3 Specific end use(s)

- Proper chemicals handling procedures should be adopted
-

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

- Diethylhydroxylamine
No exposure limits have been set for this substance

8.2 Exposure controls

- No special precautions are required for this product

8.3 Occupational exposure controls



- Wear suitable protective clothing, including eye/face protection and gloves (plastic or rubber are recommended)
 - Penetration time of glove material:
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
 - Respiratory protection may be required under exceptional circumstances when excessive air contamination exists
 - Wear suitable respiratory protection. Gas cartridge (organic substances).
-

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Odour: Amine odour
- Appearance: Liquid, pale yellow, soluble in water
- pH 10 - 11 at 100 % concentration
- Density 0,995 - 1,005 g/cm³ at 20 deg C
- Flash point > 62 deg C (CC)
- Partition Coefficient (n-Octanol/Water): Log Pow -1,5
- Non combustible

9.2 Other information

- No information available
-

SECTION 10 Stability and reactivity

10.1 Reactivity

- No information available

10.2 Possibility of hazardous reactions

- No hazardous reactions known if used for its intended purpose

10.3 Incompatible materials

- Incompatible with amines
- Incompatible with oxidizing substances
- Incompatible with reducing agents
- Incompatible with acid

10.4 Conditions to avoid

SECTION 10 Stability and reactivity (....)

- Avoid contact with water
- No special precautions are required for this product

10.5 Hazardous Decomposition Products

- Decomposition products may include toxic gas
 - Decomposition products may include Nitrous gases (NOX)
 - Decomposition products may include amines
 - Decomposition products may include ammonia
 - Decomposition products may include hydrogen
-

SECTION 11 Toxicological information

11.1 Information on toxicological effects

- LD50 (oral, rat) >2190 mg/kg
- LD50 (skin, rabbit) 1300 mg/kg
- LC50 (inhalation, rat) 3140 ppm /4h

11.2 Contact with eyes

- Causes irritation

11.3 Contact with skin

- Causes irritation

11.4 Ingestion

- May cause gastro-intestinal disturbances

11.5 Inhalation

- Vapours or aerosols may cause irritation of eyes, nose and respiratory tract
-

SECTION 12 Ecological information

12.1 Toxicity

- LC50 (fish) Diethylhydroxylamine 150 mg/l (96 hr)
- EC50 (daphnia) Diethylhydroxylamine 130.1 mg/l (48 hr)
- Biodegradability. OECD-test. 28 days 20 % (Diethylhydroxylamine)
-
- This product does not contain ingredients which are classified in the EU as dangerous for the environment.

12.2 Persistence and degradability

- Degrades rapidly on exposure to air

12.3 Bioaccumulation Potential

- Bioaccumulation of the components in this product is insignificant.

12.4 Mobility in soil

- Completely soluble in water

12.5 Results of PBT and vPvB assessment

- Not a PBT according to REACH Annex XIII

12.6 Other Adverse Effects

- No environmental problems are expected when the product is used / handled correctly.
-

SECTION 13 Disposal considerations

13.1 Waste treatment methods

- Do not discharge into drains or the environment, dispose to an authorised waste collection point
 - Disposal should be in accordance with local, state or national legislation
-

SECTION 13 Disposal considerations (....)

13.2 Classification

- EU Waste class: 07.01.99
-

SECTION 14 Transport information

14.1 UN

- UN No.: Not applicable
- Proper Shipping Name: Not applicable
- Hazard Class: Not applicable
- Packing Group: Not applicable

Not classified as hazardous for transport

14.2 Environmental hazards

- Not Classified
- Presents little or no hazard to the environment

14.3 Special precautions for user

- Not classified as hazardous for transport

14.4 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code

- Not applicable

14.5 Road/Rail (ADR/RID)

- ADR UN No.: Not applicable
- Proper Shipping Name: Not applicable
- ADR Hazard Class: Not applicable
- ADR subrisk: Not applicable
- ADR Packing Group: Not applicable
- ADR Flashpoint: Not applicable

14.6 Sea (IMDG)

- IMDG UN No.: Not applicable
- Proper Shipping Name: Not applicable
- IMDG Hazard Class: Not applicable
- IMDG subrisk: Not applicable
- IMDG Pack Group.: Not applicable
- IMDG EmS: Not applicable
- IMDG Flashpoint: Not applicable

14.7 Air (ICAO/IATA)

- ICAO UN No.: Not applicable
- Proper Shipping Name: Not applicable
- ICAO Packing Group: Not applicable
- ICAO Hazard Class: Not applicable
- ICAO subrisk: Not applicable
- ICAO Flashpoint: Not applicable

14.8 DOT / CFR (US Department of Transportation)

- Identification Number: Not applicable
- DOT Proper Shipping Name: Not applicable
- DOT Labels: Not applicable
- Product RQ (lbs): Not applicable
- Hazardous Material: Not applicable

SECTION 14 Transport information (....)

- Hazard Class: Not applicable
 - DOT subrisk: Not applicable
 - DOT Flashpoint: Not applicable
-

SECTION 15 Regulatory information

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

- Council Directive 1999/45/EEC Classification, packing and labelling of dangerous preparations.
- This Safety Data Sheet is provided in compliance with The Dangerous Substances Directive (67/548/EEC)
- Regulations 1272/2008/EEC. Classification, labeling and packing of dangerous substances and preparations
-
- Norwegian Productregistration no: 52696
- This Safety Data Sheet has been prepared in accordance with article 31 and annex II in REACH and Directive 453/2010/EU.

15.2 Chemical Safety Assessment

- None
-

SECTION 16 Other information

Text not given with phrase codes where they are used elsewhere in this safety data sheet:- H226: Flammable liquid and vapour. H302: Harmful if swallowed. H315: Causes skin irritation. H319: Causes serious eye irritation. R10: Flammable. R20/21: Harmful by inhalation and in contact with skin. R36/37/38: Irritating to eyes, respiratory system and skin.

The data given here is based on current knowledge and experience. This Safety Data Sheet describes the product in terms of safety requirements and does not signify any warranty with regard to the product's properties

The data given here only applies when product used for proper application(s). The product is not sold as suitable for other applications - usage in such may cause risks not mentioned in this sheet. Do not use for other application(s) without seeking advice from manufacturer

The information provided about the product on this Safety Data Sheet has been compiled from knowledge of the individual constituents

The most up-to-date version of this MSDS can be found on www.wilhelmsen.com/shipsservice

OTHER CONTACT INFORMATION MAJOR CHEMICAL OFFICES

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Tel: +61 3 9630 0900 Emergency 24hrs: +61 3 9630 0998

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SECTION 16 Other information (....)

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SAFETY DATA SHEET

sodium hydroxide

According to Regulation (EC) No 1907/2006, Annex II, as amended. Commission Regulation (EU) No 2015/830 of 28 May 2015.

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

1.1. Product identifier

Product name	sodium hydroxide
Product number	ACF-00219
Synonyms; trade names	caustic soda, sodium hydroxide
REACH registration number	01-2119457892-27-XXXX
CAS number	1310-73-2
EU index number	011-002-00-6
EC number	215-185-5

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

Identified uses	Industry Professional Consumer
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1.3. Details of the supplier of the safety data sheet

Supplier	Airedale Chemical Company Limited Airedale Mills Skipton Road Cross Hills Keighley West Yorkshire BD20 7BX +44 (0) 1535 637876 (Mon - Fri, 08:00 - 17:00 UK time only) +44 (0) 1535 630740 sds@airedalechemical.co.uk
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1.4. Emergency telephone number

Emergency telephone	+44 (0) 1535 637876 (Mon - Fri, 08:00 - 17:00 UK time only)
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National emergency telephone number National Poisons Information Service

For medical advice or information you should contact your GP or NHS 111 (or NHS 24 in Scotland) on 111 (for 24 hour health advice)

If you are a healthcare professional with an enquiry please visit www.TOXBASE.org

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Met. Corr. 1 - H290
Health hazards	Skin Corr. 1A - H314 Eye Dam. 1 - H318
Environmental hazards	Not Classified

sodium hydroxide

2.2. Label elements

EC number 215-185-5

Pictogram



Signal word Danger

Hazard statements H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

Precautionary statements P264 Wash contaminated skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplementary precautionary statements P234 Keep only in original packaging.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P310 Immediately call a POISON CENTER/ doctor.
P321 Specific treatment (see medical advice on this label).
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.
P405 Store locked up.
P406 Store in a corrosion-resistant/... container with a resistant inner liner.
P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name sodium hydroxide
REACH registration number 01-2119457892-27-XXXX
EU index number 011-002-00-6
CAS number 1310-73-2
EC number 215-185-5

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place. Get medical attention immediately.

sodium hydroxide

Ingestion	Rinse mouth thoroughly with water. Do not induce vomiting unless under the direction of medical personnel. Get medical attention immediately.
Skin contact	It is important to remove the substance from the skin immediately. Take off immediately all contaminated clothing. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes and get medical attention. Chemical burns must be treated by a physician.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes. Get medical attention immediately.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

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

Inhalation	Corrosive to the respiratory tract. Symptoms following overexposure may include the following: Severe irritation of nose and throat. Chemical burns.
Ingestion	May cause chemical burns in mouth, oesophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.
Skin contact	Causes severe burns. Symptoms following overexposure may include the following: Pain or irritation. Redness. Blistering may occur.
Eye contact	Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness. May cause chemical eye burns. Corneal damage. Blindness.

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

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	The product is non-combustible. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Water.

5.2. Special hazards arising from the substance or mixture

Specific hazards	In contact with some metals can generate hydrogen gas, which can form explosive mixtures with air. Severe corrosive hazard. Water used for fire extinguishing, which has been in contact with the product, may be corrosive. Control run-off water by containing and keeping it out of sewers and watercourses.
-------------------------	---

5.3. Advice for firefighters

Protective actions during firefighting	Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.
Special protective equipment for firefighters	Regular protection may not be safe. Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

sodium hydroxide

Personal precautions

No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Avoid inhalation of dust and vapours. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes. Avoid contact with contaminated tools and objects.

6.2. Environmental precautions

Environmental precautions

The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms. Avoid discharge into drains and the aquatic environment. 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

Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. This product is corrosive. Approach the spillage from upwind. Avoid generation and spreading of dust. Collect spillage with a shovel and broom, or similar and reuse, if possible. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

6.4. Reference to other sections

Reference to other sections

For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions

Wear protective clothing as described in Section 8 of this safety data sheet. Provide adequate ventilation. Keep away from food, drink and animal feeding stuffs. Keep container tightly sealed when not in use. This product is corrosive. Avoid generation and spreading of dust. Immediate first aid is imperative. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers. Always dilute by carefully pouring the product into water.

Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. 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. Change work clothing daily before leaving workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Store in accordance with local regulations. Store away from incompatible materials (see Section 10). Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Protect containers from damage. The substance is hygroscopic and will absorb water by contact with the moisture in the air.

Storage class

Corrosive storage.

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

sodium hydroxide

8.1. Control parameters

Occupational exposure limits

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

WEL = Workplace Exposure Limit

DNEL

Industry - Inhalation; Long term local effects: 1 mg/m³

Consumer - Inhalation; Long term local effects: 1 mg/m³

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Observe any occupational exposure limits for the product or ingredients. Provide adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.

Eye/face protection

Wear tight-fitting, dust-resistant, chemical splash goggles if airborne dust is generated. Personal protective equipment for eye and face protection should comply with European Standard EN166. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection

Wear protective gloves. 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. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body protection

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

Hygiene measures

Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Warn cleaning personnel of any hazardous properties of the product.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Particulate filter, type P2. Particulate filters should comply with European Standard EN143.

Environmental exposure controls

Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. Store in a demarcated bunded area to prevent release to drains and/or watercourses.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance Solid.

Colour White.

sodium hydroxide

Odour	Odourless.
pH	pH (diluted solution): > 14 at 100g/l
Melting point	323°C @ 1013 hPa
Initial boiling point and range	1388°C @ 1013 hPa
Flash point	Not applicable.
Vapour pressure	1 Pa @ 513°C
Relative density	2.13 @ 20°C
Solubility(ies)	Soluble in water. 520 g/l water @ 25°C
Partition coefficient	Not applicable. Substance is inorganic.
Explosive properties	There are no chemical groups present in the product that are associated with explosive properties.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity See Section 10.3 (Possibility of hazardous reactions) for further information.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions The following materials may react with the product: Acids. Alcohols. Hydrocarbons - halogenated. In contact with some metals can generate hydrogen gas, which can form explosive mixtures with air. Reactions with the following materials may generate heat: Water

10.4. Conditions to avoid

Conditions to avoid The substance is hygroscopic and will absorb water by contact with the moisture in the air. Avoid exposure to high temperatures or direct sunlight. Avoid freezing.

10.5. Incompatible materials

Materials to avoid Acids. Alcohols. Aluminium. Copper. Magnesium. Phenols, cresols. Zinc. Tin. Lead. Leather. Ammonia. Chlorohydrocarbons. Oxidising materials. Organic compounds.

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: Hydrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀) Endpoint waived according to REACH Annex VII, IX or XI. Corrosive Small amounts may cause serious damage.

Skin corrosion/irritation

Skin corrosion/irritation Skin Corr. 1A - H314 Causes severe burns.

Serious eye damage/irritation

sodium hydroxide

Serious eye damage/irritation	Eye Dam. 1 - H318 Corrosive to skin. Corrosivity to eyes is assumed.
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	Not applicable. Corrosive
<u>Skin sensitisation</u>	
Skin sensitisation	Not sensitising.
<u>Germ cell mutagenicity</u>	
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.
<u>Carcinogenicity</u>	
Carcinogenicity	Scientifically unjustified.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Scientifically unjustified.
Reproductive toxicity - development	Scientifically unjustified.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Not classified as a specific target organ toxicant after a single exposure.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Not classified as a specific target organ toxicant after repeated exposure.
<u>Aspiration hazard</u>	
Aspiration hazard	Not relevant. Solid.
General information	
	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Corrosive to the respiratory tract. Symptoms following overexposure may include the following: Severe irritation of nose and throat. Chemical burns.
Ingestion	May cause chemical burns in mouth, oesophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.
Skin contact	Causes severe burns. Symptoms following overexposure may include the following: Pain or irritation. Redness. Blistering may occur.
Eye contact	Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness. May cause chemical eye burns. Corneal damage. Blindness.
Acute and chronic health hazards	This product is corrosive. Causes severe burns.
Route of exposure	Ingestion Inhalation Skin and/or eye contact
Target organs	No specific target organs known.

SECTION 12: Ecological information

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

12.1. Toxicity

sodium hydroxide

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

Acute aquatic toxicity

Acute toxicity - aquatic invertebrates EC₅₀, 48 hour: 40.4 mg/l, Daphnia magna

12.2. Persistence and degradability

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

Stability (hydrolysis) Substance is inorganic.

12.3. Bioaccumulative potential

Bioaccumulative potential The product is not bioaccumulating.

Partition coefficient Not applicable. Substance is inorganic.

12.4. Mobility in soil

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.

12.6. Other adverse effects

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. 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. When handling waste, the safety precautions applying to handling of the product should be considered. 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.

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) 1823

UN No. (IMDG) 1823

UN No. (ICAO) 1823

UN No. (ADN) 1823

14.2. UN proper shipping name

Proper shipping name (ADR/RID) SODIUM HYDROXIDE, SOLID

Proper shipping name (IMDG) SODIUM HYDROXIDE, SOLID

Proper shipping name (ICAO) SODIUM HYDROXIDE, SOLID

Proper shipping name (ADN) SODIUM HYDROXIDE, SOLID

sodium hydroxide

14.3. Transport hazard class(es)

ADR/RID class	8
ADR/RID classification code	C6
ADR/RID label	8
IMDG class	8
ICAO class/division	8
ADN class	8

Transport labels



14.4. Packing group

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

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

EmS	F-A, S-B
ADR transport category	2
Emergency Action Code	2W
Hazard Identification Number (ADR/RID)	80
Tunnel restriction code	(E)

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

National regulations	Health and Safety at Work etc. Act 1974 (as amended).
	The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).
	The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].
	EH40/2005 Workplace exposure limits.

sodium hydroxide

EU legislation	<p>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).</p> <p>Commission Regulation (EU) No 453/2010 of 20 May 2010.</p> <p>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).</p> <p>Commission Regulation (EU) No 2015/830 of 28 May 2015.</p>
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15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	<p>ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.</p> <p>ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.</p> <p>RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.</p> <p>IATA: International Air Transport Association.</p> <p>ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.</p> <p>IMDG: International Maritime Dangerous Goods.</p> <p>CAS: Chemical Abstracts Service.</p> <p>ATE: Acute Toxicity Estimate.</p> <p>LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).</p> <p>EC₅₀: 50% of maximal Effective Concentration.</p> <p>PBT: Persistent, Bioaccumulative and Toxic substance.</p> <p>vPvB: Very Persistent and Very Bioaccumulative.</p> <p>DNEL: Derived No Effect Level.</p> <p>PNEC: Predicted No Effect Concentration.</p> <p>REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.</p> <p>UN: United Nations.</p> <p>IBC: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code).</p>
Classification abbreviations and acronyms	<p>Met. Corr. = Corrosive to metals</p> <p>Eye Dam. = Serious eye damage</p> <p>Skin Corr. = Skin corrosion</p>
Key literature references and sources for data	Source: European Chemicals Agency, http://echa.europa.eu/
Classification procedures according to Regulation (EC) 1272/2008	Eye Dam. 1 - H318: Skin Corr. 1A - H314: : Expert judgement. Met. Corr. 1 - H290: : Expert judgement.
Training advice	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
Revision date	04/05/2017
Revision	2
Supersedes date	25/11/2015

sodium hydroxide

Hazard statements in full

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



Airedale Chemical

Exposure scenario Manufacturing of liquid NaOH

Identification

Product name	Caustic Soda
REACH registration number	01-2119457892-27-XXXX
CAS number	1310-73-2
EC number	215-185-5
EU index number	011-022-00-6
Revision date	04/05/2017
Version number	1
Es reference	ES1
Supplier	Airedale Chemical Company Limited Airedale Mills Skipton Road Cross Hills Keighley West Yorkshire BD20 7BX +44 (0) 1535 637876 (Mon - Fri, 08:00 - 17:00 UK time only) +44 (0) 1535 630740 sds@airedalechemical.co.uk

1. Title of exposure scenario

Main title	Manufacturing of liquid NaOH
Sector of use	SU3 Industrial uses SU8 Manufacture of bulk, large-scale chemicals (including petroleum products)

Environment

Environmental release category	ERC1 Manufacture of the substance
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Worker

Manufacturing of liquid NaOH

Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p>
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category ERC1 Manufacture of the substance

Product characteristics

Physical state Liquid

Concentration details Covers concentrations up to 50 %.

Frequency and duration of use

Continuous.

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

Avoid discharging NaOH solutions into municipal wastewater or to surface water, in case such discharges are expected to cause significant pH changes. In general discharges should be carried out such that pH changes in receiving surface waters are minimised. In general most aquatic organisms can tolerate pH values in the range 6-9. This is also reflected in the description of standard OECD tests with aquatic organisms.

Conditions and measures related to external treatment of waste for disposal

Liquid waste should be reused or discharged to the industrial wastewater and further neutralized if needed.

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

Control of workers exposure

Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p>
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Product characteristics

Physical state Liquid

Manufacturing of liquid NaOH

Concentration details Covers concentrations up to 50 %.

Frequency and duration of use

Covers frequency up to 8 hours/day, 200 days/year, .

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

Technical protective measures Use closed systems or covering of open containers. Replace where appropriate, manual processes by automated/and or closed processes. Use long-handled tools where possible. Avoid splashing. Local exhaust ventilation and/or general ventilation is good practice.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Replace where appropriate, manual processes by automated/and or closed processes. Avoid formation of irritating mists, spraying and subsequent potential splashes. Corrosive to skin and eyes. Ensure operatives are trained to minimise exposures.

Risk management measures

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

It is recommended that chemical-resistant, impervious gloves are worn.

It is recommended that gloves are made of the following material:

Butyl rubber.

Polyvinyl chloride (PVC).

Rubber (natural, latex).

Thickness: 0.5 mm

Gloves should have a breakthrough time of >480 minutes.

Nitrile rubber.

Viton rubber (fluoro rubber).

Thickness: 0.35-0.40 mm

Gloves should have a breakthrough time of >480 minutes.

Wear tight-fitting, chemical splash goggles or face shield.

In case of dust or aerosol formation use suitable respiratory protection with approved filter.

P2

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

Control of workers exposure

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

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)

Product characteristics

Physical state

Liquid

Concentration details

Covers concentrations up to 50 %.

Frequency and duration of use

Manufacturing of liquid NaOH

Covers frequency up to 8 hours/day, 200 days/year, .

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

Technical protective measures Use closed systems or covering of open containers. Replace where appropriate, manual processes by automated/and or closed processes. Use long-handled tools where possible. Avoid splashing. Local exhaust ventilation and/or general ventilation is good practice.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Replace where appropriate, manual processes by automated/and or closed processes. Corrosive to skin and eyes. Avoid formation of irritating mists, spraying and subsequent potential splashes. Ensure operatives are trained to minimise exposures.

Risk management measures

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

It is recommended that chemical-resistant, impervious gloves are worn.

It is recommended that gloves are made of the following material:

Butyl rubber.

Polyvinyl chloride (PVC).

Rubber (natural, latex).

Thickness: 0.5 mm

Gloves should have a breakthrough time of >480 minutes.

Nitrile rubber.

Viton rubber (fluoro rubber).

Thickness: 0.35-0.40 mm

Gloves should have a breakthrough time of >480 minutes.

Wear tight-fitting, chemical splash goggles or face shield.

In case of dust or aerosol formation use suitable respiratory protection with approved filter.

P2

3. Exposure estimation (Environment 1)

Environmental release category ERC1 Manufacture of the substance

The aquatic effect and risk assessment only deals with the effect on organisms/ecosystems due to possible pH changes related to OH⁻ discharges, as the toxicity of the metal ion is expected to be insignificant compared to (potential) pH effect. The high water solubility and very low vapour pressure indicates that the substance will predominantly in water. When the risk management measures related to the environment are implemented, there is no exposure to the activated sludge of a STP and there is no exposure to the receiving surface water. The sediment compartment is not considered, because it is not relevant for the substance. If emitted to the aquatic compartment, sorption to sediment particles will be negligible. Significant emissions to air are not expected due to the very low vapour pressure of the substance. If emitted to air as a water based aerosol, the substance will rapidly neutralised as a result of its reaction with CO₂ (or acids). Significant emissions to the terrestrial environment are not expected. The sludge application route is not relevant for the emission to agricultural soil, as no sorption of the substance to particulate matter will occur in STPs/WWTPs. If emitted to soil, sorption to soil particles will be negligible. Depending on the buffer capacity of the soil, OH⁻ will be neutralised in the soil pore water or the pH may increase. Bioaccumulation will not occur.

3. Exposure estimation (Health 1)

Manufacturing of liquid NaOH

Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p>
Assessment method	Used ECETOC TRA model.
Specific conditions	Modelled exposure data, very low vapour pressure, without local exhaust ventilation, without respiratory protection.
Exposure	<p>Inhalation worker exposure.: Exposure 0.17 mg/m³, DNEL , RCR 0.17</p> <p>This substance is corrosive. For handling of corrosive substances and formulations, immediate dermal contact occur only occasionally and it is assumed that the repeated daily dermal exposure can be neglected. Dermal exposure to the substance was not quantified. The substance is not expected to be systematically available in the body under normal handling and use conditions. Systemic effects of NaOH dermal or inhalation exposure are not expected to occur. Based on workplace measurements and following the proposed risk management measures controlling worker and professional exposure, the inhalation exposure is below the DNEL.</p>

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. As this product contains ingredients with exposure limits, process enclosures, local exhaust ventilation or other engineering controls should be used to keep worker exposure below any statutory or recommended limits, if use generates dust, fumes, gas, vapour or mist.

3. Exposure estimation (Health 2)

Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p>
Assessment method	Used ECETOC TRA model.
Specific conditions	Measured exposure data, worst case.
Exposure	<p>Worker - inhalation, short-term - local: Exposure 0.33 mg/m³, DNEL , RCR 0.33</p> <p>Worker - inhalation, long-term - local: Exposure 0.14 mg/m³, DNEL , RCR 0.14</p>

Manufacturing of liquid NaOH

This substance is corrosive. For handling of corrosive substances and formulations, immediate dermal contact occur only occasionally and it is assumed that the repeated daily dermal exposure can be neglected. Dermal exposure to the substance was not quantified. The substance is not expected to be systematically available in the body under normal handling and use conditions. Systemic effects of NaOH dermal or inhalation exposure are not expected to occur. Based on workplace measurements and following the proposed risk management measures controlling worker and professional exposure, the inhalation exposure is below the DNEL.

4. Guidance to check compliance with the exposure scenario (Health 2)

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. As this product contains ingredients with exposure limits, process enclosures, local exhaust ventilation or other engineering controls should be used to keep worker exposure below any statutory or recommended limits, if use generates dust, fumes, gas, vapour or mist.



Exposure scenario Manufacturing of Solid NaOH

Identification

Product name	Caustic Soda
REACH registration number	01-2119457892-27-XXXX
CAS number	1310-73-2
EC number	215-185-5
EU index number	011-022-00-6
Revision date	04/05/2017
Version number	1
Es reference	ES2
Supplier	Airedale Chemical Company Limited Airedale Mills Skipton Road Cross Hills Keighley West Yorkshire BD20 7BX +44 (0) 1535 637876 (Mon - Fri, 08:00 - 17:00 UK time only) +44 (0) 1535 630740 sds@airedalechemical.co.uk

1. Title of exposure scenario

Main title	Manufacturing of Solid NaOH
Sector of use	SU3 Industrial uses SU8 Manufacture of bulk, large-scale chemicals (including petroleum products)

Environment

Environmental release category	ERC1 Manufacture of the substance
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Worker

Manufacturing of Solid NaOH

Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p>
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category ERC1 Manufacture of the substance

Product characteristics

Physical state Solid

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Continuous.

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

Avoid discharging NaOH solutions into municipal wastewater or to surface water, in case such discharges are expected to cause significant pH changes. In general discharges should be carried out such that pH changes in receiving surface waters are minimised. In general most aquatic organisms can tolerate pH values in the range 6-9. This is also reflected in the description of standard OECD tests with aquatic organisms.

Conditions and measures related to external treatment of waste for disposal

Disposal method Liquid waste should be reused or discharged to the industrial wastewater and further neutralized if needed.

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

Control of workers exposure

Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p>
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Product characteristics

Physical state Solid

Manufacturing of Solid NaOH

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Covers frequency up to 8 hours/day, 200 days/year, .

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

Technical protective measures Use closed systems or covering of open containers. Replace where appropriate, manual processes by automated/and or closed processes. Avoid formation of irritating mists, spraying and subsequent potential splashes. Use long-handled tools where possible. Local exhaust ventilation and/or general ventilation is good practice.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Corrosive to skin and eyes. Ensure operatives are trained to minimise exposures.

Risk management measures

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

It is recommended that chemical-resistant, impervious gloves are worn.

It is recommended that gloves are made of the following material:

Butyl rubber.

Polyvinyl chloride (PVC).

Rubber (natural, latex).

Thickness: 0.5 mm

Gloves should have a breakthrough time of >480 minutes.

Nitrile rubber.

Viton rubber (fluoro rubber).

Thickness: 0.35-0.40 mm

Gloves should have a breakthrough time of >480 minutes.

Wear tight-fitting, chemical splash goggles or face shield.

In case of dust or aerosol formation use suitable respiratory protection with approved filter.

P2

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

Control of workers exposure

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

Product characteristics

Physical state Solid

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Covers frequency up to 8 hours/day, 200 days/year, .

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

Technical protective measures Use closed systems or covering of open containers. Replace where appropriate, manual processes by automated/and or closed processes. Avoid formation of irritating mists, spraying and subsequent potential splashes. Use long-handled brushes and rollers where possible. Local exhaust ventilation and/or general ventilation is good practice.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Corrosive to skin and eyes. Ensure operatives are trained to minimise exposures.

Risk management measures

Manufacturing of Solid NaOH

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

It is recommended that chemical-resistant, impervious gloves are worn.

It is recommended that gloves are made of the following material:

Butyl rubber.

Polyvinyl chloride (PVC).

Rubber (natural, latex).

Thickness: 0.5 mm

Nitrile rubber.

Viton rubber (fluoro rubber).

Thickness: 0.35-0.40 mm

Gloves should comply with the requirements of EN 374.

Gloves should have a breakthrough time of >480 minutes.

In case of dust or aerosol formation use suitable respiratory protection with approved filter.

P2

3. Exposure estimation (Environment 1)

Environmental release category

ERC1 Manufacture of the substance

The aquatic effect and risk assessment only deals with the effect on organisms/ecosystems due to possible pH changes related to OH⁻ discharges, as the toxicity of the metal ion is expected to be insignificant compared to (potential) pH effect. The high water solubility and very low vapour pressure indicates that the substance will predominantly in water. When the risk management measures related to the environment are implemented, there is no exposure to the activated sludge of a STP and there is no exposure to the receiving surface water. The sediment compartment is not considered, because it is not relevant for the substance. If emitted to the aquatic compartment, sorption to sediment particles will be negligible. Significant emissions to air are not expected due to the very low vapour pressure of the substance. If emitted to air as a water based aerosol, the substance will rapidly neutralised as a result of its reaction with CO₂ (or acids). Significant emissions to the terrestrial environment are not expected. The sludge application route is not relevant for the emission to agricultural soil, as no sorption of the substance to particulate matter will occur in STPs/WWTPs. If emitted to soil, sorption to soil particles will be negligible. Depending on the buffer capacity of the soil, OH⁻ will be neutralised in the soil pore water or the pH may increase. Bioaccumulation will not occur.

3. Exposure estimation (Health 1)

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

Assessment method

Used ECETOC TRA model.

Specific conditions

Modelled exposure data, very low vapour pressure, without local exhaust ventilation, without respiratory protection.

Manufacturing of Solid NaOH

Exposure

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

Inhalation worker exposure.: Exposure 0.01 mg/m³, DNEL , 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

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

Inhalation worker exposure.: Exposure 0.1 mg/m³, DNEL , RCR 0.1

PROC4 Chemical production where opportunity for exposure arises

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

Inhalation worker exposure.: Exposure 0.5 mg/m³, DNEL , RCR 0.5

This substance is corrosive. For handling of corrosive substances and formulations, immediate dermal contact occur only occasionally and it is assumed that the repeated daily dermal exposure can be neglected. Dermal exposure to the substance was not quantified. The substance is not expected to be systematically available in the body under normal handling and use conditions. Systemic effects of NaOH dermal or inhalation exposure are not expected to occur. Based on workplace measurements and following the proposed risk management measures controlling worker and professional exposure, the inhalation exposure is below the DNEL.

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.

3. Exposure estimation (Health 2)

Process category	PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
Assessment method	Used ECETOC TRA model.
Specific conditions	Measured exposure data, worst case.
Exposure	<p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>Worker - inhalation, short-term - local: Exposure 0.26 mg/m³, DNEL , RCR 0.26</p> <p>This substance is corrosive. For handling of corrosive substances and formulations, immediate dermal contact occur only occasionally and it is assumed that the repeated daily dermal exposure can be neglected. Dermal exposure to the substance was not quantified. The substance is not expected to be systematically available in the body under normal handling and use conditions. Systemic effects of NaOH dermal or inhalation exposure are not expected to occur. Based on workplace measurements and following the proposed risk management measures controlling worker and professional exposure, the inhalation exposure is below the DNEL.</p>

4. Guidance to check compliance with the exposure scenario (Health 2)

Manufacturing of Solid NaOH

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



Airedale Chemical

Exposure scenario Industrial use

Identification

Product name	Caustic Soda
REACH registration number	01-2119457892-27-XXXX
CAS number	1310-73-2
EC number	215-185-5
EU index number	011-022-00-6
Revision date	04/05/2017
Version number	1
Es reference	ES3
Supplier	Airedale Chemical Company Limited Airedale Mills Skipton Road Cross Hills Keighley West Yorkshire BD20 7BX +44 (0) 1535 637876 (Mon - Fri, 08:00 - 17:00 UK time only) +44 (0) 1535 630740 sds@airedalechemical.co.uk

1. Title of exposure scenario

Main title	Industrial use
Sector of use	SU3 Industrial uses
Environment	
Environmental release category	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

Worker

Industrial use

Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC5 Mixing or blending in batch processes</p> <p>PROC7 Industrial spraying</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC10 Roller application or brushing</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC15 Use as laboratory reagent.</p> <p>PROC19 Manual activities involving hand contact</p> <p>PROC23 Open processing and transfer operations at substantially elevated temperature</p> <p>PROC24 High (mechanical) energy work-up of substances bound in/on materials and/or articles</p>
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category	<p>ERC2 Formulation into mixture</p> <p>ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)</p> <p>ERC6a Use of intermediate</p> <p>ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)</p> <p>ERC7 Use of functional fluid at industrial site</p>
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Product characteristics

Concentration details	Covers concentrations up to 100 %.
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Frequency and duration of use

Continuous.

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

Avoid discharging NaOH solutions into municipal wastewater or to surface water, in case such discharges are expected to cause significant pH changes. In general discharges should be carried out such that pH changes in receiving surface waters are minimised. In general most aquatic organisms can tolerate pH values in the range 6-9. This is also reflected in the description of standard OECD tests with aquatic organisms.

Conditions and measures related to external treatment of waste for disposal

Liquid waste should be reused or discharged to the industrial wastewater and further neutralized if needed.

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

Control of workers exposure

Industrial use

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

Physical state Liquid Solid, low dustiness

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Covers frequency up to 8 hours/day, 200 days/year, .

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

Technical protective measures Use closed systems or covering of open containers. Replace where appropriate, manual processes by automated/and or closed processes. Avoid formation of irritating mists, spraying and subsequent potential splashes. Use long-handled tools where possible. Local exhaust ventilation and/or general ventilation is good practice.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Corrosive to skin and eyes. Ensure operatives are trained to minimise exposures.

Risk management measures

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

It is recommended that chemical-resistant, impervious gloves are worn.

It is recommended that gloves are made of the following material:

Butyl rubber.

Polyvinyl chloride (PVC).

Rubber (natural, latex).

Thickness: 0.5 mm

Gloves should have a breakthrough time of >480 minutes.

Nitrile rubber.

Viton rubber (fluoro rubber).

Thickness: 0.35-0.40 mm

Gloves should have a breakthrough time of >480 minutes.

Wear tight-fitting, chemical splash goggles or face shield.

In case of dust or aerosol formation use suitable respiratory protection with approved filter.

P2

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

Control of workers exposure

Industrial use

Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC10 Roller application or brushing</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC15 Use as laboratory reagent.</p> <p>PROC19 Manual activities involving hand contact</p>
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Product characteristics

Physical state Liquid Solid, low dustiness

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Covers frequency up to 8 hours/day, 200 days/year, .

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

Technical protective measures Use closed systems or covering of open containers. Replace where appropriate, manual processes by automated/and or closed processes. Avoid formation of irritating mists, spraying and subsequent potential splashes. Use long-handled tools where possible. Local exhaust ventilation and/or general ventilation is good practice.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Corrosive to skin and eyes. Ensure operatives are trained to minimise exposures.

Risk management measures

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

It is recommended that chemical-resistant, impervious gloves are worn.

It is recommended that gloves are made of the following material:

Butyl rubber.

Polyvinyl chloride (PVC).

Rubber (natural, latex).

Thickness: 0.50 mm

Gloves should have a breakthrough time of >480 minutes.

Nitrile rubber.

Viton rubber (fluoro rubber).

Thickness: 0.35-0.40 mm

Gloves should have a breakthrough time of >480 minutes.

Wear tight-fitting, chemical splash goggles or face shield.

In case of dust or aerosol formation use suitable respiratory protection with approved filter.

P2

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Industrial use

Process category PROC4 Chemical production where opportunity for exposure arises
 PROC5 Mixing or blending in batch processes
 PROC14 Tableting, compression, extrusion, pelletisation, granulation

Product characteristics

Physical state Liquid Solid, low dustiness

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Covers frequency up to 8 hours/day, 200 days/year, .

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

Technical protective measures Use closed systems or covering of open containers. Replace where appropriate, manual processes by automated/and or closed processes. Avoid formation of irritating mists, spraying and subsequent potential splashes. Use long-handled tools where possible. Local exhaust ventilation and/or general ventilation is good practice.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Corrosive to skin and eyes. Ensure operatives are trained to minimise exposures.

Risk management measures

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

It is recommended that chemical-resistant, impervious gloves are worn.

It is recommended that gloves are made of the following material:

Butyl rubber.

Polyvinyl chloride (PVC).

Rubber (natural, latex).

Thickness: 0.5 mm

Gloves should have a breakthrough time of >480 minutes.

Nitrile rubber.

Viton rubber (fluoro rubber).

Thickness: 0.35-0.40 mm

Gloves should have a breakthrough time of >480 minutes.

Wear tight-fitting, chemical splash goggles or face shield.

In case of dust or aerosol formation use suitable respiratory protection with approved filter.

P2

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

Process category PROC23 Open processing and transfer operations at substantially elevated temperature
 PROC24 High (mechanical) energy work-up of substances bound in/on materials and/or articles

Product characteristics

Physical state Liquid Solid, low dustiness

Concentration details Covers concentrations up to 100% .

Frequency and duration of use

Covers frequency up to 8 hours/day, 200 days/year, .

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

Industrial use

Technical protective measures Use closed systems or covering of open containers. Replace where appropriate, manual processes by automated/and or closed processes. Avoid formation of irritating mists, spraying and subsequent potential splashes. Use long-handled tools where possible. Local exhaust ventilation and/or general ventilation is good practice.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Corrosive to skin and eyes. Ensure operatives are trained to minimise exposures.

Risk management measures

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

It is recommended that chemical-resistant, impervious gloves are worn.

It is recommended that gloves are made of the following material:

Butyl rubber.

Polyvinyl chloride (PVC).

Rubber (natural, latex).

Thickness: 0.50 mm

Gloves should have a breakthrough time of >480 minutes.

Nitrile rubber.

Viton rubber (fluoro rubber).

Thickness: 0.35-0.40 mm

Gloves should have a breakthrough time of >480 minutes.

Wear tight-fitting, chemical splash goggles or face shield.

In case of dust or aerosol formation use suitable respiratory protection with approved filter.

P2

3. Exposure estimation (Environment 1)

Environmental release category

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

The aquatic effect and risk assessment only deals with the effect on organisms/ecosystems due to possible pH changes related to OH⁻ discharges, as the toxicity of the metal ion is expected to be insignificant compared to (potential) pH effect. The high water solubility and very low vapour pressure indicates that the substance will predominantly in water. When the risk management measures related to the environment are implemented, there is no exposure to the activated sludge of a STP and there is no exposure to the receiving surface water. The sediment compartment is not considered, because it is not relevant for the substance. If emitted to the aquatic compartment, sorption to sediment particles will be negligible.

Significant emissions to air are not expected due to the very low vapour pressure of the substance. If emitted to air as a water based aerosol, the substance will rapidly neutralised as a result of its reaction with CO₂ (or acids). Significant emissions to the terrestrial environment are not expected. The sludge application route is not relevant for the emission to agricultural soil, as no sorption of the substance to particulate matter will occur in STPs/WWTPs. If emitted to soil, sorption to soil particles will be negligible. Depending on the buffer capacity of the soil, OH⁻ will be neutralised in the soil pore water or the pH may increase. Bioaccumulation will not occur.

3. Exposure estimation (Health 1)

Industrial use

Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC5 Mixing or blending in batch processes</p> <p>PROC7 Industrial spraying</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC10 Roller application or brushing</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC14 Tableting, compression, extrusion, pelletisation, granulation</p> <p>PROC15 Use as laboratory reagent.</p> <p>PROC19 Manual activities involving hand contact</p> <p>PROC23 Open processing and transfer operations at substantially elevated temperature</p> <p>PROC24 High (mechanical) energy work-up of substances bound in/on materials and/or articles</p>
Assessment method	Used ECETOC TRA model.
Specific conditions	Liquid, no LEV, no respiratory protection (RPE).
Exposure	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC5 Mixing or blending in batch processes</p> <p>PROC7 Industrial spraying</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC10 Roller application or brushing</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC14 Tableting, compression, extrusion, pelletisation, granulation</p> <p>PROC15 Use as laboratory reagent.</p> <p>PROC19 Manual activities involving hand contact</p> <p>PROC23 Open processing and transfer operations at substantially elevated temperature</p> <p>PROC24 High (mechanical) energy work-up of substances bound in/on materials and/or articles</p> <p>Inhalation worker exposure., Worker - inhalation, short-term - local: Exposure 0.17 mg/m³, DNEL , RCR</p>

Industrial use

This substance is corrosive. For handling of corrosive substances and formulations, immediate dermal contact occur only occasionally and it is assumed that the repeated daily dermal exposure can be neglected. Dermal exposure to the substance was not quantified. The substance is not expected to be systematically available in the body under normal handling and use conditions. Systemic effects of NaOH dermal or inhalation exposure are not expected to occur. Based on workplace measurements and following the proposed risk management measures controlling worker and professional exposure, the inhalation exposure is below the DNEL.

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.

3. Exposure estimation (Health 2)

Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC10 Roller application or brushing</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC15 Use as laboratory reagent.</p> <p>PROC19 Manual activities involving hand contact</p>
Assessment method	Used ECETOC TRA model.
Specific conditions	Solid, no LEV, no respiratory protection (RPE).

Industrial use

Exposure

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

Worker - inhalation, short-term - local: Exposure 0.01 mg/m³, DNEL , RCR

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.

Worker - inhalation, short-term - local: Exposure 0.1 mg/m³, DNEL , RCR

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

Worker - inhalation, short-term - local: Exposure 0.5 mg/m³, DNEL , RCR

This substance is corrosive. For handling of corrosive substances and formulations, immediate dermal contact occur only occasionally and it is assumed that the repeated daily dermal exposure can be neglected. Dermal exposure to the substance was not quantified.

The substance is not expected to be systematically available in the body under normal handling and use conditions. Systemic effects of NaOH dermal or inhalation exposure are not expected to occur. Based on workplace measurements and following the proposed risk management measures controlling worker and professional exposure, the inhalation exposure is below the DNEL.

4. Guidance to check compliance with the exposure scenario (Health 2)

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

3. Exposure estimation (Health 3)

Process category

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC14 Tableting, compression, extrusion, pelletisation, granulation

Assessment method

Used ECETOC TRA model.

Specific conditions

Solid, no respiratory protection (RPE).

Exposure

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC14 Tableting, compression, extrusion, pelletisation, granulation

Worker - inhalation, short-term - local: Exposure 0.2 mg/m³, DNEL , RCR

Industrial use

This substance is corrosive. For handling of corrosive substances and formulations, immediate dermal contact occur only occasionally and it is assumed that the repeated daily dermal exposure can be neglected. Dermal exposure to the substance was not quantified. The substance is not expected to be systematically available in the body under normal handling and use conditions. Systemic effects of NaOH dermal or inhalation exposure are not expected to occur. Based on workplace measurements and following the proposed risk management measures controlling worker and professional exposure, the inhalation exposure is below the DNEL.

4. Guidance to check compliance with the exposure scenario (Health 3)

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

3. Exposure estimation (Health 4)

Process category	PROC23 Open processing and transfer operations at substantially elevated temperature PROC24 High (mechanical) energy work-up of substances bound in/on materials and/or articles
Assessment method	Used ECETOC TRA model.
Specific conditions	Solid, with PRE (90%)
Exposure	PROC23 Open processing and transfer operations at substantially elevated temperature Worker - inhalation, short-term - local: Exposure 0.4 mg/m ³ , DNEL , RCR

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

Worker - inhalation, short-term - local: Exposure 0.5 mg/m³, DNEL , RCR

This substance is corrosive. For handling of corrosive substances and formulations, immediate dermal contact occur only occasionally and it is assumed that the repeated daily dermal exposure can be neglected. Dermal exposure to the substance was not quantified. The substance is not expected to be systematically available in the body under normal handling and use conditions. Systemic effects of NaOH dermal or inhalation exposure are not expected to occur. Based on workplace measurements and following the proposed risk management measures controlling worker and professional exposure, the inhalation exposure is below the DNEL.

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

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



Exposure scenario Professional use

Identification

Product name	Caustic Soda
REACH registration number	01-2119457892-27-XXXX
CAS number	1310-73-2
EC number	215-185-5
EU index number	011-022-00-6
Revision date	04/05/2017
Version number	1
Es reference	ES4
Supplier	Airedale Chemical Company Limited Airedale Mills Skipton Road Cross Hills Keighley West Yorkshire BD20 7BX +44 (0) 1535 637876 (Mon - Fri, 08:00 - 17:00 UK time only) +44 (0) 1535 630740 sds@airedalechemical.co.uk

1. Title of exposure scenario

Main title	Professional use
Sector of use	SU22 Professional uses
Environment	
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)
Worker	

Professional use

Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC5 Mixing or blending in batch processes</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC10 Roller application or brushing</p> <p>PROC11 Non industrial spraying</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC14 Tableting, compression, extrusion, pelletisation, granulation</p> <p>PROC15 Use as laboratory reagent.</p> <p>PROC19 Manual activities involving hand contact</p> <p>PROC22 Manufacturing and processing of minerals and/or metals at substantially elevated temperature</p> <p>PROC24 High (mechanical) energy work-up of substances bound in/on materials and/or articles</p>
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Environmental release category	<p>ERC2 Formulation into mixture</p> <p>ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)</p> <p>ERC6a Use of intermediate</p> <p>ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)</p> <p>ERC7 Use of functional fluid at industrial site</p>
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Product characteristics

Concentration details	Covers concentrations up to 100 %.
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Frequency and duration of use

Continuous.

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

Avoid discharging NaOH solutions into municipal wastewater or to surface water, in case such discharges are expected to cause significant pH changes. In general discharges should be carried out such that pH changes in receiving surface waters are minimised. In general most aquatic organisms can tolerate pH values in the range 6-9. This is also reflected in the description of standard OECD tests with aquatic organisms.

Conditions and measures related to external treatment of waste for disposal

Liquid waste should be reused or discharged to the industrial wastewater and further neutralized if needed.

Conditions and measures related to external recovery of waste

Liquid waste should be reused or discharged to the industrial wastewater and further neutralized if needed.

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

Professional use

Control of workers exposure

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.

Product characteristics

Physical state

Liquid Solid, low dustiness

Concentration details

Covers concentrations up to 100 %.

Frequency and duration of use

Covers frequency up to 8 hours/day, 200 days/year, .

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

Technical protective measures Use long-handled tools where possible. Avoid splashing.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures

Corrosive to skin and eyes. Ensure operatives are trained to minimise exposures.

Risk management measures

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.
 It is recommended that chemical-resistant, impervious gloves are worn.
 It is recommended that gloves are made of the following material:
 Butyl rubber.
 Polyvinyl chloride (PVC).
 Rubber (natural, latex).
 Thickness: 0.5 mm
 Gloves should have a breakthrough time of >480 minutes.
 Nitrile rubber.
 Viton rubber (fluoro rubber).
 Thickness: 0.35-0.40 mm
 Gloves should have a breakthrough time of >480 minutes.
 Wear tight-fitting, chemical splash goggles or face shield.
 In case of dust or aerosol formation use suitable respiratory protection with approved filter.
 P2

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

Control of workers exposure

Professional use

Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC10 Roller application or brushing</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC15 Use as laboratory reagent.</p> <p>PROC19 Manual activities involving hand contact</p>
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Product characteristics

Physical state Liquid Solid, low dustiness

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Covers frequency up to 8 hours/day, 200 days/year, .

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

Technical protective measures Use long-handled tools where possible. Avoid splashing.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Corrosive to skin and eyes. Ensure operatives are trained to minimise exposures.

Risk management measures

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

It is recommended that chemical-resistant, impervious gloves are worn.

It is recommended that gloves are made of the following material:

Butyl rubber.

Rubber (natural, latex).

Polyvinyl chloride (PVC).

Thickness: 0.5 mm

Gloves should have a breakthrough time of >480 minutes.

Nitrile rubber.

Viton rubber (fluoro rubber).

Thickness: 0.35-0.40 mm

Gloves should have a breakthrough time of >480 minutes.

Wear tight-fitting, chemical splash goggles or face shield.

In case of dust or aerosol formation use suitable respiratory protection with approved filter.

P2

2. Conditions of use affecting exposure (Workers - Health 3)

Control of workers exposure

Process category	<p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC5 Mixing or blending in batch processes</p> <p>PROC14 Tableting, compression, extrusion, pelletisation, granulation</p>
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Product characteristics

Professional use

Physical state Liquid Solid, low dustiness

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Covers frequency up to 8 hours/day, 200 days/year, .

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

Technical protective measures Use long-handled tools where possible. Avoid splashing.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Corrosive to skin and eyes. Ensure operatives are trained to minimise exposures.

Risk management measures

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

It is recommended that chemical-resistant, impervious gloves are worn.

It is recommended that gloves are made of the following material:

Butyl rubber.

Polyvinyl chloride (PVC).

Rubber (natural, latex).

Thickness: 0.5 mm

Gloves should have a breakthrough time of >480 minutes.

Nitrile rubber.

Viton rubber (fluoro rubber).

Thickness: 0.35-0.40 mm

Gloves should have a breakthrough time of >480 minutes.

Wear tight-fitting, chemical splash goggles or face shield.

In case of dust or aerosol formation use suitable respiratory protection with approved filter.

P2

2. Conditions of use affecting exposure (Workers - Health 4)

Control of workers exposure

Process category PROC23 Open processing and transfer operations at substantially elevated temperature
PROC24 High (mechanical) energy work-up of substances bound in/on materials and/or articles

Product characteristics

Physical state Liquid Solid, low dustiness

Concentration details Covers concentrations up to 100% .

Frequency and duration of use

Covers frequency up to 8 hours/day, 200 days/year, .

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

Technical protective measures Use long-handled tools where possible. Avoid splashing.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Corrosive to skin and eyes. Ensure operatives are trained to minimise exposures.

Risk management measures

Professional use

Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

It is recommended that chemical-resistant, impervious gloves are worn.

It is recommended that gloves are made of the following material:

Butyl rubber.

Polyvinyl chloride (PVC).

Rubber (natural, latex).

Thickness: 0.5 mm

Gloves should have a breakthrough time of >480 minutes.

Nitrile rubber.

Viton rubber (fluoro rubber).

Thickness: 0.35-0.40 mm

Gloves should have a breakthrough time of >480 minutes.

Wear tight-fitting, chemical splash goggles or face shield.

In case of dust or aerosol formation use suitable respiratory protection with approved filter.

P2

3. Exposure estimation (Environment 1)

Environmental release category

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

The aquatic effect and risk assessment only deals with the effect on organisms/ecosystems due to possible pH changes related to OH⁻ discharges, as the toxicity of the metal ion is expected to be insignificant compared to (potential) pH effect. The high water solubility and very low vapour pressure indicates that the substance will predominantly be in water. When the risk management measures related to the environment are implemented, there is no exposure to the activated sludge of a STP and there is no exposure to the receiving surface water. The sediment compartment is not considered, because it is not relevant for the substance. If emitted to the aquatic compartment, sorption to sediment particles will be negligible.

Significant emissions to air are not expected due to the very low vapour pressure of the substance. If emitted to air as a water based aerosol, the substance will rapidly be neutralised as a result of its reaction with CO₂ (or acids). Significant emissions to the terrestrial environment are not expected. The sludge application route is not relevant for the emission to agricultural soil, as no sorption of the substance to particulate matter will occur in STPs/WWTPs. If emitted to soil, sorption to soil particles will be negligible. Depending on the buffer capacity of the soil, OH⁻ will be neutralised in the soil pore water or the pH may increase. Bioaccumulation will not occur.

3. Exposure estimation (Health 1)

Professional use

Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC5 Mixing or blending in batch processes</p> <p>PROC7 Industrial spraying</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC10 Roller application or brushing</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC14 Tableting, compression, extrusion, pelletisation, granulation</p> <p>PROC15 Use as laboratory reagent.</p> <p>PROC19 Manual activities involving hand contact</p> <p>PROC23 Open processing and transfer operations at substantially elevated temperature</p> <p>PROC24 High (mechanical) energy work-up of substances bound in/on materials and/or articles</p>
Assessment method	Used ECETOC TRA model.
Specific conditions	Liquid, no LEV, no respiratory protection (RPE).
Exposure	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC5 Mixing or blending in batch processes</p> <p>PROC7 Industrial spraying</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC10 Roller application or brushing</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC14 Tableting, compression, extrusion, pelletisation, granulation</p> <p>PROC15 Use as laboratory reagent.</p> <p>PROC23 Open processing and transfer operations at substantially elevated temperature</p> <p>PROC24 High (mechanical) energy work-up of substances bound in/on materials and/or articles</p> <p>Inhalation worker exposure., Worker - inhalation, short-term - local: Exposure 0.17 mg/m³, DNEL , RCR</p>

Professional use

This substance is corrosive. For handling of corrosive substances and formulations, immediate dermal contact occur only occasionally and it is assumed that the repeated daily dermal exposure can be neglected. Dermal exposure to the substance was not quantified. The substance is not expected to be systematically available in the body under normal handling and use conditions. Systemic effects of NaOH dermal or inhalation exposure are not expected to occur. Based on workplace measurements and following the proposed risk management measures controlling worker and professional exposure, the inhalation exposure is below the DNEL.

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.

3. Exposure estimation (Health 2)

Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC10 Roller application or brushing</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC15 Use as laboratory reagent.</p> <p>PROC19 Manual activities involving hand contact</p>
Assessment method	Used ECETOC TRA model.
Specific conditions	Solid, no LEV, no respiratory protection (RPE).

Professional use

Exposure

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

Worker - inhalation, short-term - local: Exposure 0.01 mg/m³, DNEL , RCR

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.

Worker - inhalation, short-term - local: Exposure 0.1 mg/m³, DNEL , RCR

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

Worker - inhalation, short-term - local: Exposure 0.5 mg/m³, DNEL , RCR

This substance is corrosive. For handling of corrosive substances and formulations, immediate dermal contact occur only occasionally and it is assumed that the repeated daily dermal exposure can be neglected. Dermal exposure to the substance was not quantified.

The substance is not expected to be systematically available in the body under normal handling and use conditions. Systemic effects of NaOH dermal or inhalation exposure are not expected to occur. Based on workplace measurements and following the proposed risk management measures controlling worker and professional exposure, the inhalation exposure is below the DNEL.

4. Guidance to check compliance with the exposure scenario (Health 2)

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

3. Exposure estimation (Health 3)

Process category

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC14 Tableting, compression, extrusion, pelletisation, granulation

Assessment method

Used ECETOC TRA model.

Specific conditions

Solid, no respiratory protection (RPE).

Exposure

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC14 Tableting, compression, extrusion, pelletisation, granulation

Worker - inhalation, short-term - local: Exposure 0.2 mg/m³, DNEL , RCR

Professional use

This substance is corrosive. For handling of corrosive substances and formulations, immediate dermal contact occur only occasionally and it is assumed that the repeated daily dermal exposure can be neglected. Dermal exposure to the substance was not quantified. The substance is not expected to be systematically available in the body under normal handling and use conditions. Systemic effects of NaOH dermal or inhalation exposure are not expected to occur. Based on workplace measurements and following the proposed risk management measures controlling worker and professional exposure, the inhalation exposure is below the DNEL.

4. Guidance to check compliance with the exposure scenario (Health 3)

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

3. Exposure estimation (Health 4)

Process category	PROC23 Open processing and transfer operations at substantially elevated temperature PROC24 High (mechanical) energy work-up of substances bound in/on materials and/or articles
Assessment method	Used ECETOC TRA model.
Specific conditions	Solid, with PRE (90%)
Exposure	PROC23 Open processing and transfer operations at substantially elevated temperature Worker - inhalation, short-term - local: Exposure 0.4 mg/m ³ , DNEL , RCR

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

Worker - inhalation, short-term - local: Exposure 0.5 mg/m³, DNEL , RCR

This substance is corrosive. For handling of corrosive substances and formulations, immediate dermal contact occur only occasionally and it is assumed that the repeated daily dermal exposure can be neglected. Dermal exposure to the substance was not quantified. The substance is not expected to be systematically available in the body under normal handling and use conditions. Systemic effects of NaOH dermal or inhalation exposure are not expected to occur. Based on workplace measurements and following the proposed risk management measures controlling worker and professional exposure, the inhalation exposure is below the DNEL.

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

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



Airedale Chemical

Exposure scenario Consumer use

Identification

Product name	Caustic Soda
REACH registration number	01-2119457892-27-XXXX
CAS number	1310-73-2
EC number	215-185-5
EU index number	011-022-00-6
Revision date	04/05/2017
Version number	1
Es reference	ES5
Supplier	Airedale Chemical Company Limited Airedale Mills Skipton Road Cross Hills Keighley West Yorkshire BD20 7BX +44 (0) 1535 637876 (Mon - Fri, 08:00 - 17:00 UK time only) +44 (0) 1535 630740 sds@airedalechemical.co.uk

1. Title of exposure scenario

Main title	Consumer use
Product category	PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents PC35 Washing and cleaning products PC39 Cosmetics, personal care.
Sector of use	SU21 Consumer uses
Environment	
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)

Control of environmental exposure (Non-industrial)

Consumer use

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)
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Product characteristics

Concentration details	Covers concentrations up to 100 %.
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Risk management measures

There are no specific risk management measures relating to environment.

Conditions and measures related to external treatment of waste for disposal

This material and its container must be disposed of in a safe way. If container is empty trash as regular municipal waste. Batteries should be recycled as much as possible.

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

Control of Non-industrial exposure

PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
PC35 Washing and cleaning products PC39 Cosmetics, personal care.

Product characteristics

Physical state	Liquid , or: Solid, low dustiness
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Concentration details	Covers concentrations up to 100 %.
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Other given operational conditions affecting Non-industrial exposure

Keep out of the reach of children. Avoid contact with skin and eyes. To avoid risks to human health and the environment, comply with the instructions for use. It is recommended that chemical-resistant, impervious gloves are worn. Wear chemical splash goggles. In case of dust or aerosol formation use suitable respiratory protection with approved filter. P2

3. Exposure estimation (Environment 1)

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)
	Consumer uses relate to already diluted products which will further be neutralized quickly in the sewer, well before reaching WWTP or surface water.

3. Exposure estimation (Health 1)

Process category	PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents PC35 Washing and cleaning products PC39 Cosmetics, personal care.
Assessment method	ConsExpo. SrayExpo.
Specific conditions	Assessed only for the most critical use.
Exposure	Consumer - inhalation, short-term - local: Exposure 0.3 - 1.6 mg/m ³ , DNEL , RCR <1

Consumer 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.