



## SAFETY DATA SHEET

### SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

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

##### 1.1. Product identifier

**Product name** SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

**Synonyms; trade names** BLEACH, HYPO, BRIDOS, EUROCHLOR, EVERCHLOR CLEAR, SODIUM HYPOCHLORITE SOLUTION > 2.5%, SOD HYPOCHLORITE 14/15%, SOD HYPOCHLORITE 14/15% SLY, SOD HYPOCHLORITE 5%, SODIUM HYPOCHLORITE 12 %, SODIUM HYPOCHLORITE 15% SOLUTION, SODIUM HYPOCHLORITE SOLUTION 16 - 18 %, SODIUM HYPOCHLORITE 7% SOLUTION, SODIUM HYPOCHLORITE 13% SOLUTION, SODIUM HYPOCHLORITE SOLUTION > 10%, SODIUM HYPOCHLORITE, GE6078360, GE6078364, GE6078358 SODIUM HYPOCHLORITE SOLUTION 14/15 %, GE6078358, GE6078363, GE6078365, GE6078359, SODIUM HYPOCHLORITE 15% UNI 901:2007, SODIUM HYPOCHLORITE 18% UNI 901:2007, SODIUM HYPOCHLORITE 12% UNI 901:2007, SOD HYPOCHLORITE 6% SOL, SODIUM HYPOCHLORITE 14%, BIOTREAT 4549, SODIUM HYPOCHLORITE 7.5% SOLUTION, SODIUM HYPOCHLORITE 14/15%, SODIUM HYPOCHLORITE LOW BROMATE, SOD HYPOCHLORITE 14/15% AKZO, SODIUM HYPOCHLORITE 150 g/l, CHLOROT(NATRIUMHYPOCHLORITE8%), SODIUM HYPOCHLORITE SOLUTION 47 - 50, BRIDOS CHLOR LIQ BLACK, BIOSPERSE 3001, BROMAX, HYPOCHLORITE SDE 55 HT (SODIUM HYPOCHLORITE), SODIUM HYPO 14/15% ULB, JAVEL 47 50 TYPE 1, SODIUM HYPOCHLORITE 58% PCL, JAVEL 58%

**REACH registration number** 01-2119488154-34-XXXX

**CAS number** 7681-52-9

**EU index number** 017-011-00-1

**EC number** 231-668-3

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

**Identified uses** Detergent.  
Cleaning agent.  
Disinfectant.  
Chemical Intermediate  
For further information, see attached Exposure Scenario.

##### 1.3. Details of the supplier of the safety data sheet

**Supplier** Woburn Chemicals Ltd  
Chesney Wold  
Bleak Hall  
Milton Keynes  
MK6 1LQ  
Tel: 01908 670081  
Fax: 01908 670084  
enquiries@woburnchemicals.co.uk

##### 1.4. Emergency telephone number

## SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

Emergency telephone 01908 670081 (Office hours only)

### 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. 1B - H314 Eye Dam. 1 - H318  
**Environmental hazards** Aquatic Acute 1 - H400 Aquatic Chronic 2 - H411

#### 2.2. Label elements

**EC number** 231-668-3

##### **Hazard pictograms**



**Signal word** Danger

**Hazard statements**  
 H290 May be corrosive to metals.  
 H314 Causes severe skin burns and eye damage.  
 H400 Very toxic to aquatic life.  
 H411 Toxic to aquatic life with long lasting effects.

**Precautionary statements**  
 P234 Keep only in original packaging.  
 P260 Do not breathe vapour/ spray.  
 P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
 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.  
 P501 Dispose of contents/ container in accordance with national regulations.

**Supplemental label information** EUH031 Contact with acids liberates toxic gas.

**Contains** SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE

#### 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

## SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

<b>SODIUM HYPOCHLORITE SOLUTION, ... % Cl ACTIVE</b>		<b>5% - &lt;20%</b>
CAS number: 7681-52-9	EC number: 231-668-3	REACH registration number: 01-2119488154-34-XXXX
M factor (Acute) = 10	M factor (Chronic) = 1	

### Classification

Skin Corr. 1B - H314  
 Eye Dam. 1 - H318  
 Aquatic Acute 1 - H400  
 Aquatic Chronic 1 - H410

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

<b>Product name</b>	SODIUM HYPOCHLORITE SOLUTION 5% - < 20%
<b>REACH registration number</b>	01-2119488154-34-XXXX
<b>EU index number</b>	017-011-00-1
<b>CAS number</b>	7681-52-9
<b>EC number</b>	231-668-3
<b>Composition comments</b>	The data shown are in accordance with the latest EC Directives.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

<b>Inhalation</b>	Remove person to fresh air and keep comfortable for breathing. Keep affected person warm and at rest. Get medical attention immediately.
<b>Ingestion</b>	Never give anything by mouth to an unconscious person. Do not induce vomiting. Rinse mouth thoroughly with water. Get medical attention.
<b>Skin contact</b>	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention.
<b>Eye contact</b>	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

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

<b>Inhalation</b>	Gas or vapour in high concentrations may irritate the respiratory system. Generates toxic gas in contact with acid. Chlorine.
<b>Ingestion</b>	Ingestion may cause severe irritation of the mouth, the oesophagus and the gastrointestinal tract.
<b>Skin contact</b>	Chemical burns.
<b>Eye contact</b>	Causes burns. Risk of serious damage to eyes. May cause permanent damage if eye is not immediately irrigated.

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

<b>Notes for the doctor</b>	Treat symptomatically.
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### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

## SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

**Suitable extinguishing media** Use fire-extinguishing media suitable for the surrounding fire. Extinguish with the following media: Water spray.

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

### 5.2. Special hazards arising from the substance or mixture

**Specific hazards** Dry product is combustible Toxic to aquatic life with long lasting effects.

**Hazardous combustion products** Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Chlorine. Oxygen.

### 5.3. Advice for firefighters

**Protective actions during firefighting** Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Contain and collect extinguishing water.

**Special protective equipment for firefighters** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions** Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of spray mist and contact with skin and eyes. Provide adequate ventilation.

### 6.2. Environmental precautions

**Environmental precautions** Do not discharge into drains or watercourses or onto the ground. 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** Absorb spillage with inert, damp, non-combustible material. Flush contaminated area with plenty of water. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13. Contain and collect extinguishing water.

### 6.4. Reference to other sections

**Reference to other sections** Wear protective clothing as described in Section 8 of this safety data sheet. For waste disposal, see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

**Usage precautions** Avoid spilling. Avoid contact with skin and eyes. Avoid inhalation of vapours and spray/mists. Provide adequate ventilation. Contact with acids liberates toxic gas. Chlorine.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage precautions** Protect from freezing and direct sunlight. Store in tightly-closed, original container in a well-ventilated place. Store away from the following materials: Acids. Flammable/combustible materials. Ammonia. May be corrosive to metals.

**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

### 8.1. Control parameters

## SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

### SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE (CAS: 7681-52-9)

<b>Ingredient comments</b>	No exposure limits known for ingredient(s).
<b>DNEL</b>	Industry - Inhalation; Long term : 1.55 mg/m <sup>3</sup> Industry - Inhalation; Short term : 3.1 mg/m <sup>3</sup> Consumer - Inhalation; Long term : 1.55 mg/m <sup>3</sup> Consumer - Inhalation; Short term : 3.1 mg/m <sup>3</sup>
<b>PNEC</b>	- Sediment (Freshwater); 0.00021 mg/l - Sediment (Marinewater); 0.000042 mg/l - Intermittent release; 0.00026 mg/l - STP; 0.03 mg/l

### 8.2. Exposure controls

#### Protective equipment



#### Appropriate engineering controls

Provide adequate ventilation. Avoid inhalation of vapours. Observe any occupational exposure limits for the product or ingredients.

#### Eye/face protection

Wear tight-fitting, chemical splash goggles or face shield. Personal protective equipment for eye and face protection should comply with European Standard EN166.

#### Hand protection

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. Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. For exposure up to 8 hours, wear gloves made of the following material: Nitrile rubber. Protective gloves should have a minimum thickness of 0.50 mm. To protect hands from chemicals, gloves should comply with European Standard EN374.

#### Other skin and body protection

Wear rubber apron. Wear rubber footwear.

#### Hygiene measures

Provide eyewash station and safety shower. Wash at the end of each work shift and before eating, smoking and using the toilet. Remove contaminated clothing and wash the skin thoroughly with soap and water after work. Eating, smoking and water fountains prohibited in immediate work area.

#### Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. EN 136/140/141/145/143/149

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Liquid.
<b>Colour</b>	Green-yellow.
<b>Odour</b>	Chlorine.
<b>Odour threshold</b>	No information available.
<b>pH</b>	pH (concentrated solution): > 11
<b>Melting point</b>	No information available.
<b>Initial boiling point and range</b>	No information available.

## SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

Flash point	> 100°C
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapour pressure	No information available.
Vapour density	Data lacking.
Relative density	~ 1.2
Bulk density	No information available.
Solubility(ies)	Soluble in water.
Partition coefficient	Not available.
Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.
Viscosity	No information available.
Explosive properties	Not considered to be explosive.
Explosive under the influence of a flame	No information available.
Oxidising properties	Does not meet the criteria for classification as oxidising.

### 9.2. Other information

Other information	Not available.
Refractive index	No information available.
Particle size	No information available.
Molecular weight	No information available.
Volatility	No information available.
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	No information available.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reactivity	Generates toxic gas in contact with acid.
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### 10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended. Titer reduction of about 0.2 to 0.25 ° chlorometric per day at 17 ° C The stability of the solution decreases under the action of heat, light and in the presence of impurities (traces of iron, nickel, copper, cobalt, aluminum, manganese)
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## SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** Generates toxic gas in contact with acid.

### 10.4. Conditions to avoid

**Conditions to avoid** Avoid excessive heat for prolonged periods of time. Avoid exposure to high temperatures or direct sunlight.

### 10.5. Incompatible materials

**Materials to avoid** Strong acids. Amines. contact with metals may result in decomposition with the formation of Oxygen

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Oxygen. hypochlorous acid Chlorine.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

**Toxicological effects** No information available.

#### Skin corrosion/irritation

**Skin corrosion/irritation** Causes severe burns.

#### Serious eye damage/irritation

**Serious eye damage/irritation** Causes severe burns.

#### Respiratory sensitisation

**Respiratory sensitisation** No information available.

#### Skin sensitisation

**Skin sensitisation** No information available.

#### Germ cell mutagenicity

**Genotoxicity - in vitro** No information available.

#### Carcinogenicity

**Carcinogenicity** No information available.

#### Reproductive toxicity

**Reproductive toxicity - fertility** No information available.

#### Specific target organ toxicity - single exposure

**STOT - single exposure** No information available.

#### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** No information available.

#### Aspiration hazard

**Aspiration hazard** No information available.

#### **Inhalation**

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

#### **Ingestion**

May cause chemical burns in mouth, oesophagus and stomach.

#### **Skin contact**

Causes burns.

## SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

**Eye contact** Causes burns. Causes serious eye damage.

### Toxicological information on ingredients.

#### SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE

##### Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> mg/kg) 1,100.0

Species Rat

##### Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> mg/kg) 2,000.0

Species Rat

##### Acute toxicity - inhalation

Acute toxicity inhalation (LC<sub>50</sub> vapours mg/l) 10,500.0

Species Rat

ATE inhalation (vapours mg/l) 10,500.0

##### Skin corrosion/irritation

Skin corrosion/irritation Corrosive to skin.

##### Serious eye damage/irritation

Serious eye damage/irritation Corrosive

##### Skin sensitisation

Skin sensitisation Not sensitising.

##### Germ cell mutagenicity

Genotoxicity - in vitro This substance has no evidence of mutagenic properties.

##### Carcinogenicity

Carcinogenicity There is no evidence that the product can cause cancer.

##### Reproductive toxicity

Reproductive toxicity - fertility This substance has no evidence of toxicity to reproduction.

##### Specific target organ toxicity - single exposure

STOT - single exposure Irritating to respiratory system.

##### Specific target organ toxicity - repeated exposure

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

##### Aspiration hazard

Aspiration hazard None.

## SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

<b>Inhalation</b>	May cause damage to mucous membranes in nose, throat, lungs and bronchial system. May cause respiratory system irritation.
<b>Ingestion</b>	May cause chemical burns in mouth, oesophagus and stomach.
<b>Skin contact</b>	May cause serious chemical burns to the skin.
<b>Eye contact</b>	Causes burns. Causes serious eye damage.

### SECTION 12: Ecological information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

#### Ecological information on ingredients.

##### SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

#### 12.1. Toxicity

**Toxicity** Toxic to aquatic life with long lasting effects.

#### Ecological information on ingredients.

##### SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE

**Toxicity** Very toxic to aquatic organisms.

#### Acute aquatic toxicity

**LE(C)<sub>50</sub>** 0.01 < L(E)C<sub>50</sub> ≤ 0.1

**M factor (Acute)** 10

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 0.06 mg/l, Freshwater fish

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 0.141 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 72 hours: 0.04 mg/l, Scenedesmus subspicatus

#### Chronic aquatic toxicity

**M factor (Chronic)** 1

**Chronic toxicity - fish early life stage** NOEC, 28 days: 0.04 mg/l, Freshwater fish

#### 12.2. Persistence and degradability

**Persistence and degradability** Substance is inorganic.

#### Ecological information on ingredients.

##### SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE

**Persistence and degradability** Not applicable. Substance is inorganic.

#### 12.3. Bioaccumulative potential

**Bioaccumulative potential** Bioaccumulation is unlikely.

**Partition coefficient** Not available.

## SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

### Ecological information on ingredients.

#### SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE

**Bioaccumulative potential** The product does not contain any substances expected to be bioaccumulating.

**Partition coefficient** : -3.42

### 12.4. Mobility in soil

**Mobility** The product is soluble in water.

### Ecological information on ingredients.

#### SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE

**Mobility** The product is soluble in water.

### 12.5. Results of PBT and vPvB assessment

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

### Ecological information on ingredients.

#### SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE

**Results of PBT and vPvB assessment** This substance is not considered to be persistent, bioaccumulating and toxic (PBT) or very persistent nor very bioaccumulating (vPvB).

### 12.6. Other adverse effects

**Other adverse effects** None known.

### Ecological information on ingredients.

#### SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE

**Other adverse effects** Not known.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**General information** Do not puncture or incinerate, even when empty. Waste is classified as hazardous waste.

**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

**General** Wear protective clothing as described in Section 8 of this safety data sheet.

### 14.1. UN number

**UN No. (ADR/RID)** 1791

**UN No. (IMDG)** 1791

**UN No. (ICAO)** 1791

**UN No. (ADN)** 1791

### 14.2. UN proper shipping name

**Proper shipping name (ADR/RID)** HYPOCHLORITE SOLUTION

## SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

**Proper shipping name (IMDG)** HYPOCHLORITE SOLUTION (CONTAINS SODIUM HYPOCHLORITE SOLUTION, ... % Cl ACTIVE)

**Proper shipping name (ICAO)** HYPOCHLORITE SOLUTION

**Proper shipping name (ADN)** HYPOCHLORITE SOLUTION

### 14.3. Transport hazard class(es)

ADR/RID class	8
ADR/RID classification code	C9
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



### 14.6. Special precautions for user

IMDG Code segregation group	8. Hypochlorites
EmS	F-A, S-B
ADR transport category	2
Emergency Action Code	2X
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**

## SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

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

#### **EU legislation**

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

Commission Regulation (EU) No 2015/830 of 28 May 2015.

This product may impact SEVESO storage regulations.

#### **Restrictions (Annex XVII Regulation 1907/2006)**

This product is/contains a substance that is included in REGULATION (EC) No 1907/2006 (REACH) ANNEX XVII - RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES. Entry number: 3

#### **Seveso Directive - Control of major accident hazards E1**

### 15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

#### Inventories

##### **EU - EINECS/ELINCS**

All the ingredients are listed or exempt.

### **SECTION 16: Other information**

## SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

<b>Abbreviations and acronyms used in the safety data sheet</b>	<p>ATE: Acute Toxicity Estimate.</p> <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>CAS: Chemical Abstracts Service.</p> <p>DNEL: Derived No Effect Level.</p> <p>IATA: International Air Transport Association.</p> <p>IMDG: International Maritime Dangerous Goods.</p> <p>Kow: Octanol-water partition coefficient.</p> <p>LC<sub>50</sub>: Lethal Concentration to 50 % of a test population.</p> <p>LD<sub>50</sub>: Lethal Dose to 50% of a test population (Median Lethal Dose).</p> <p>PBT: Persistent, Bioaccumulative and Toxic substance.</p> <p>PNEC: Predicted No Effect Concentration.</p> <p>REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.</p> <p>RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.</p> <p>vPvB: Very Persistent and Very Bioaccumulative.</p> <p>IARC: International Agency for Research on Cancer.</p> <p>MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.</p> <p>cATpE: Converted Acute Toxicity Point Estimate.</p> <p>BCF: Bioconcentration Factor.</p> <p>BOD: Biochemical Oxygen Demand.</p> <p>EC<sub>50</sub>: 50% of maximal Effective Concentration.</p> <p>LOAEC: Lowest Observed Adverse Effect Concentration.</p> <p>LOAEL: Lowest Observed Adverse Effect Level.</p> <p>NOAEC: No Observed Adverse Effect Concentration.</p> <p>NOAEL: No Observed Adverse Effect Level.</p> <p>NOEC: No Observed Effect Concentration.</p> <p>LOEC: Lowest Observed Effect Concentration.</p> <p>DMEL: Derived Minimal Effect Level.</p> <p>EL50: Exposure Limit 50</p> <p>hPa: Hectopascal</p> <p>LL50: Lethal Loading fifty</p> <p>OECD: Organisation for Economic Co-operation and Development</p> <p>POW: Octanol-water partition coefficient</p> <p>SCBA: self-contained breathing apparatus</p> <p>STP: Sewage Treatment Plant</p> <p>VOC: Volatile Organic Compounds</p>
<b>Classification abbreviations and acronyms</b>	<p>Acute Tox. = Acute toxicity</p> <p>Aquatic Acute = Hazardous to the aquatic environment (acute)</p> <p>Aquatic Chronic = Hazardous to the aquatic environment (chronic)</p>
<b>Key literature references and sources for data</b>	Supplier's information.
<b>Classification procedures according to Regulation (EC) 1272/2008</b>	<p>Met. Corr. 1 - H290: Calculation method. Skin Corr. 1B - H314: Calculation method. Eye Dam. 1 - H318: Calculation method. Aquatic Chronic 2 - H411: Calculation method. Aquatic Acute 1 - H400: Calculation method.</p>
<b>Revision comments</b>	NOTE: Lines within the margin indicate significant changes from the previous revision.
<b>Revision date</b>	17/03/2021

**SODIUM HYPOCHLORITE SOLUTION 5% - < 20%**

**Version number** 3.002

**Supersedes date** 07/07/2020

**SDS status** Approved.

**Hazard statements in full**

H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.  
H411 Toxic to aquatic life with long lasting effects.

This information is based on our present knowledge and is intended to describe our products from point of view of the safety requirements. It should not be construed as guaranteeing specific properties.

The user must satisfy himself that the product is entirely suitable for his purpose.



## Exposure scenario Consumer Use

### Identification

<b>Product name</b>	Sodium Hypochlorite
<b>REACH registration number</b>	01-2119488154-34-XXXX
<b>CAS number</b>	7681-52-9
<b>EC number</b>	231-668-3
<b>Supplier</b>	Woburn Chemicals Ltd Chesney Wold Bleak Hall Milton Keynes MK6 1LQ Tel: 01908 670081 Fax: 01908 670084 enquiries@woburnchemicals.co.uk

### 1. Title of exposure scenario

<b>Main title</b>	Consumer Use
<b>Product category</b>	PC34 Textile dyes and impregnating products PC35 Washing and cleaning products PC37 Water treatment chemicals.
<b>Main sector</b>	SU21 Consumer uses

#### Environment

<b>Environmental release category</b>	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) ERC8e Widespread use of reactive processing aid (no inclusion into or onto article, outdoor)
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### 2. Conditions of use affecting exposure (Non-industrial - Environment 1)

#### Product characteristics

<b>Physical state</b>	Liquid
<b>Concentration details</b>	Covers concentrations up to 15 %.

#### Frequency and duration of use

Emission days: 365 days/year

#### Environmental factors not influenced by risk management measures

<b>Dilution</b>	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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## Consumer Use

### Risk management measures

STP type                      Municipal STP.

### Conditions and measures related to external treatment of waste for disposal

Waste treatment            External treatment and disposal of waste should comply with applicable local and/or national regulations.

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

### Product characteristics

Physical state              Liquid

Concentration details      Covers concentrations up to 15 %.

### Frequency and duration of use

Covers daily exposure up to 30minutes

### Other given operational conditions affecting Non-industrial exposure

Setting                      Indoor.

Temperature                Assumes activities are at ambient temperature (unless stated differently).

## 3. Exposure estimation (Environment 1)

Qualitative approach used to conclude safe use.

## 3. Exposure estimation (Health 1)

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

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

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e. RCRs > 1), additional RMM or a site-specific chemical safety assessment is required.



## Exposure scenario Industrial and professional cleaning

### Identification

<b>Product name</b>	Sodium Hypochlorite
<b>REACH registration number</b>	01-2119488154-34-XXXX
<b>CAS number</b>	7681-52-9
<b>EC number</b>	231-668-3
<b>Supplier</b>	Woburn Chemicals Ltd Chesney Wold Bleak Hall Milton Keynes MK6 1LQ Tel: 01908 670081 Fax: 01908 670084 enquiries@woburnchemicals.co.uk

### 1. Title of exposure scenario

<b>Main title</b>	Industrial and professional cleaning
<b>Product category</b>	PC35 Washing and cleaning products
<b>Main sector</b>	SU3 Industrial uses SU22 Professional uses
<b>Sector of use</b>	SU4 Manufacture of food products

#### Environment

<b>Environmental release category</b>	ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article) 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) ERC8e Widespread use of reactive processing aid (no inclusion into or onto article, outdoor)
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#### Worker

<b>Process category</b>	PROC5 Mixing or blending in batch processes PROC7 Industrial spraying PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10 Roller application or brushing PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring. PROC15 Use as laboratory reagent.
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## Industrial and professional cleaning

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

#### Control of environmental exposure

**Environmental release category** ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor)  
ERC8e Widespread use of reactive processing aid (no inclusion into or onto article, outdoor)

#### Product characteristics

**Physical state** Liquid  
**Vapour pressure** 2.5 kPa @ 20°C  
**Concentration details** Covers concentrations up to 10 %.

#### Frequency and duration of use

Continuous release.  
Emission days: 365 days/year

#### Environmental factors not influenced by risk management measures

**Dilution** Local freshwater dilution factor: 10 (Default)  
Local marine water dilution factor: 100 (Default)

#### Risk management measures

**Good practice** Ensure operatives are trained to minimise exposures.  
**Technical measures** Bund storage facilities to prevent soil and water pollution in the event of spillage.  
**STP type** Municipal STP.  
**STP details** Assumed onsite sewage treatment plant flow: 2000 m<sup>3</sup>/day

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

#### Control of workers exposure

**Process category** PROC5 Mixing or blending in batch processes  
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities  
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)  
PROC11 Non industrial spraying  
PROC13 Treatment of articles by dipping and pouring.  
PROC15 Use as laboratory reagent.

#### Product characteristics

**Physical state** Liquid  
**Vapour pressure** 2.5 kPa @ 20°C  
**Concentration details** Covers concentrations up to 10 %.

#### Frequency and duration of use

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

#### Other given operational conditions affecting workers exposure

**Setting** Indoor/outdoor use.  
**Temperature** Assumes use at not more than 20°C above ambient temperature, unless stated differently.  
**Ventilation rate** Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

#### Risk management measures

## Industrial and professional cleaning

Use suitable eye protection and gloves.

Assumes a good basic standard of occupational hygiene is implemented.

### 3. Exposure estimation (Environment 1)

Qualitative approach used to conclude safe use.

### 3. Exposure estimation (Health 1)

<b>Sector of use</b>	SU3 Industrial uses
<b>Assessment method</b>	Used ART model.
<b>Exposure</b>	<p>PROC5 Mixing or blending in batch processes  Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.81</p> <p>PROC7 Industrial spraying  Worker - inhalation, long-term - local and systemic: Exposure 1.20 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.77</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities  Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.81</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)  Worker - inhalation, long-term - local and systemic: Exposure 0.91 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.59</p> <p>PROC10 Roller application or brushing  Worker - inhalation, long-term - local and systemic: Exposure 1.00 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.65</p> <p>PROC13 Treatment of articles by dipping and pouring.  Worker - inhalation, long-term - local and systemic: Exposure 0.70 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.45</p>

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

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e. RCRs > 1), additional RMM or a site-specific chemical safety assessment is required.

### 3. Exposure estimation (Health 2)

<b>Sector of use</b>	SU22 Professional uses
<b>Assessment method</b>	Used ART model.

## Industrial and professional cleaning

### Exposure

PROC5 Mixing or blending in batch processes

Worker - inhalation, long-term - local and systemic: Exposure 1.00 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.65

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

Worker - inhalation, long-term - local and systemic: Exposure 1.10 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.71

PROC10 Roller application or brushing

Worker - inhalation, long-term - local and systemic: Exposure 1.20 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.77

PROC11 Non industrial spraying

Worker - inhalation, long-term - local and systemic: Exposure 1.00 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.65

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic: Exposure 1.20 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.77

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic: Exposure 0.85 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.55

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

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e. RCRs > 1), additional RMM or a site-specific chemical safety assessment is required.



## Exposure scenario Industrial Use

### Identification

<b>Product name</b>	Sodium Hypochlorite
<b>REACH registration number</b>	01-2119488154-34-XXXX
<b>CAS number</b>	7681-52-9
<b>EC number</b>	231-668-3
<b>Supplier</b>	Woburn Chemicals Ltd Chesney Wold Bleak Hall Milton Keynes MK6 1LQ Tel: 01908 670081 Fax: 01908 670084 enquiries@woburnchemicals.co.uk

### 1. Title of exposure scenario

<b>Main title</b>	Industrial Use
<b>Product category</b>	PC19 Intermediate. PC34 Textile dyes and impregnating products PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents PC37 Water treatment chemicals.
<b>Main sector</b>	SU3 Industrial uses
<b>Sector of use</b>	SU8 Manufacture of bulk, large-scale chemicals (including petroleum products) SU9 Manufacture of fine chemicals SU10 Formulation [mixing] of preparations and/or re-packaging SU4 Manufacture of food products SU5 Manufacture of textiles, leather, fur SU6 Manufacture of paper and paper products

#### Environment

<b>Environmental release category</b>	ERC6a Use of intermediate ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)
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#### Worker

## Industrial Use

<b>Process category</b>	<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>PROC13 Treatment of articles by dipping and pouring.</p>
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### 2. Conditions of use affecting exposure (Industrial - Environment 1)

#### Control of environmental exposure

<b>Environmental release category</b>	<p>ERC6a Use of intermediate</p> <p>ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)</p> <p>ERC6d Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)</p>
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#### Product characteristics

<b>Physical state</b>	Liquid
<b>Vapour pressure</b>	2.5 kPa @ 20°C
<b>Concentration details</b>	Covers concentrations up to 15 %.

#### Frequency and duration of use

Emission days: 360 days/year

#### Environmental factors not influenced by risk management measures

<b>Dilution</b>	<p>Local freshwater dilution factor: 10 (Default)</p> <p>Local marine water dilution factor: 100 (Default)</p>
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#### Risk management measures

<b>Good practice</b>	Ensure operatives are trained to minimise exposures.
<b>Technical measures</b>	Bund storage facilities to prevent soil and water pollution in the event of spillage.
<b>STP type</b>	Municipal STP.
<b>STP details</b>	Assumed onsite sewage treatment plant flow: 2000 m <sup>3</sup> /day

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

#### Control of workers exposure

## Industrial Use

<b>Process category</b>	<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>PROC13 Treatment of articles by dipping and pouring.</p>
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### Product characteristics

<b>Physical state</b>	Liquid
<b>Vapour pressure</b>	2.5 kPa @ 20°C
<b>Concentration details</b>	Covers concentrations up to 25 %.

### Frequency and duration of use

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

### Other given operational conditions affecting workers exposure

<b>Setting</b>	Indoor/outdoor use.
<b>Temperature</b>	Assumes activities are at ambient temperature (unless stated differently).

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

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

### Organisational measures to prevent/limit releases, dispersion and exposure

**Organisational measures** Ensure operatives are trained to minimise exposures.

### Risk management measures

Use eye protection to EN 166, designed to protect against liquid splashes.  
 Wear suitable gloves tested to EN374.  
 Gloves should have a breakthrough time of 8 hours.  
 Assumes a good basic standard of occupational hygiene is implemented.

### 3. Exposure estimation (Environment 1)

Qualitative approach used to conclude safe use.

### 3. Exposure estimation (Health 1)

## Industrial Use

<b>Assessment method</b>	Used ART model.
<b>Exposure</b>	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions Worker - inhalation, long-term - local and systemic: Exposure 0.02 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.01</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Worker - inhalation, long-term - local and systemic: Exposure 1.10 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.71</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Worker - inhalation, long-term - local and systemic: Exposure 1.10 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.71</p> <p>PROC4 Chemical production where opportunity for exposure arises Worker - inhalation, long-term - local and systemic: Exposure 1.20 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.77</p> <p>PROC5 Mixing or blending in batch processes Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.81</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.81</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.81</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Worker - inhalation, long-term - local and systemic: Exposure 0.91 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.59</p> <p>PROC13 Treatment of articles by dipping and pouring. Worker - inhalation, long-term - local and systemic: Exposure 0.70 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.45</p>

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

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e. RCRs > 1), additional RMM or a site-specific chemical safety assessment is required.



## Exposure scenario Manufacturing and Formulation

### Identification

<b>Product name</b>	Sodium Hypochlorite
<b>REACH registration number</b>	01-2119488154-34-XXXX
<b>CAS number</b>	7681-52-9
<b>EC number</b>	231-668-3
<b>Supplier</b>	Woburn Chemicals Ltd Chesney Wold Bleak Hall Milton Keynes MK6 1LQ Tel: 01908 670081 Fax: 01908 670084 enquiries@woburnchemicals.co.uk

### 1. Title of exposure scenario

<b>Main title</b>	Manufacturing and Formulation
<b>Process scope</b>	Formulation of the substance and its mixtures in batch or continuous operations within closed or contained systems, including incidental exposures during storage, materials transfers, mixing, maintenance, sampling and associated laboratory activities.
<b>Main sector</b>	SU3 Industrial uses
<b>Sector of use</b>	SU8 Manufacture of bulk, large-scale chemicals (including petroleum products) SU10 Formulation [mixing] of preparations and/or re-packaging

#### Environment

<b>Environmental release category</b>	ERC1 Manufacture of the substance ERC2 Formulation into mixture
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#### Worker

## Manufacturing and Formulation

<b>Process category</b>	<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>PROC14 Tableting, compression, extrusion, pelletisation, granulation</p> <p>PROC15 Use as laboratory reagent.</p>
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### 2. Conditions of use affecting exposure (Industrial - Environment 1)

#### Control of environmental exposure

<b>Environmental release category</b>	<p>ERC1 Manufacture of the substance</p> <p>ERC2 Formulation into mixture</p>
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#### Product characteristics

<b>Physical state</b>	Liquid
<b>Vapour pressure</b>	2.5 kPa @ 20°C
<b>Concentration details</b>	Covers concentrations up to 25 %.

#### Frequency and duration of use

Emission days: 360 days/year

#### Environmental factors not influenced by risk management measures

<b>Dilution</b>	<p>Local freshwater dilution factor: 10 (Default)</p> <p>Local marine water dilution factor: 100 (Default)</p>
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#### Risk management measures

<b>Good practice</b>	Ensure operatives are trained to minimise exposures. Handle all packages and containers carefully to minimise spills.
<b>STP type</b>	Municipal STP.
<b>STP details</b>	Assumed domestic sewage treatment plant flow: 2000 m <sup>3</sup> /day

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

<b>Water</b>	Onsite wastewater treatment required.
<b>Soil</b>	Bund storage facilities to prevent soil and water pollution in the event of spillage.

#### Conditions and measures related to external treatment of waste for disposal

<b>Waste treatment</b>	Dispose of waste in accordance with environmental legislation.
<b>Disposal method</b>	Contain and dispose of waste according to local regulations.

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

#### Control of workers exposure

## Manufacturing and Formulation

<b>Process category</b>	<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>PROC14 Tableting, compression, extrusion, pelletisation, granulation</p> <p>PROC15 Use as laboratory reagent.</p>
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### Product characteristics

<b>Physical state</b>	Liquid
<b>Vapour pressure</b>	2.5 kPa @ 20°C
<b>Concentration details</b>	Covers concentrations up to 25 %.

### Frequency and duration of use

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

### Other given operational conditions affecting workers exposure

<b>Setting</b>	Indoor/outdoor use.
<b>Temperature</b>	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
<b>Ventilation rate</b>	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

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

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

<b>Organisational measures</b>	Ensure operatives are trained to minimise exposures.
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### Risk management measures

Wear suitable gloves tested to EN374.  
 Gloves should have a breakthrough time of 8 hours.  
 Use eye protection to EN 166, designed to protect against liquid splashes.  
 Assumes a good basic standard of occupational hygiene is implemented.

## 3. Exposure estimation (Environment 1)

Qualitative approach used to conclude safe use.

## Manufacturing and Formulation

### 3. Exposure estimation (Health 1)

<b>Assessment method</b>	Used ART model.
<b>Exposure</b>	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions Worker - inhalation, long-term - local and systemic: Exposure 0.02 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.01</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Worker - inhalation, long-term - local and systemic: Exposure 1.10 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.71</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Worker - inhalation, long-term - local and systemic: Exposure 1.10 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.71</p> <p>PROC4 Chemical production where opportunity for exposure arises Worker - inhalation, long-term - local and systemic: Exposure 1.20 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.77</p> <p>PROC5 Mixing or blending in batch processes Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.81</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.81</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.81</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Worker - inhalation, long-term - local and systemic: Exposure 0.91 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.59</p> <p>PROC14 Tableting, compression, extrusion, pelletisation, granulation Worker - inhalation, long-term - local and systemic: Exposure 0.23 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.15</p> <p>PROC15 Use as laboratory reagent. Worker - inhalation, long-term - local and systemic: Exposure 0.70 mg/m<sup>3</sup>, DNEL 1.55 mg/m<sup>3</sup>, RCR 0.45</p>

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

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e. RCRs > 1), additional RMM or a site-specific chemical safety assessment is required.