



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%
Product number	47852
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(NATRIUMHYPOCHLORITE 8%), SODIUM HYPOCHLORITE SOLUTION 47 - 50, BRIDOS CHLOR LIQ BLACK, BIOSPERSE 3001, BROMAX, HYPOCHLORITE SDE 55 HT (SODIUM HYPOCHLORITE)
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.
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1.3. Details of the supplier of the safety data sheet

Supplier	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com
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1.4. Emergency telephone number

Emergency telephone	SGS - +32 (0)3 575 55 55 (24h)
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SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

Sds No. 47852

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

Pictogram

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**3.2. Mixtures**

SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

SODIUM HYPOCHLORITE SOLUTION, ... % Cl ACTIVE			5% - <20%
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

Met. Corr. 1 - H290

Skin Corr. 1B - H314

Eye Dam. 1 - H318

STOT SE 3 - H335

Aquatic Acute 1 - H400

Aquatic Chronic 1 - H410

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

SECTION 4: First aid measures

4.1. Description of first aid measures

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

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

Inhalation	Gas or vapour in high concentrations may irritate the respiratory system. Generates toxic gas in contact with acid. Chlorine.
Ingestion	Ingestion may cause severe irritation of the mouth, the oesophagus and the gastrointestinal tract.
Skin contact	Chemical burns.
Eye contact	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

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

5.1. Extinguishing media

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

SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

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.
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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.
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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.
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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.
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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.
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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.
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Storage class	Corrosive storage.
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7.3. Specific end use(s)

Specific end use(s)	The identified uses for this product are detailed in Section 1.2.
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SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

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

Ingredient comments	No exposure limits known for ingredient(s).
DNEL	Industry - Inhalation; Long term : 1.55 mg/m ³ Industry - Inhalation; Short term : 3.1 mg/m ³ Consumer - Inhalation; Long term : 1.55 mg/m ³ Consumer - Inhalation; Short term : 3.1 mg/m ³

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PNEC

- 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. EN 166

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. To protect hands from chemicals, gloves should comply with European Standard EN374. 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. For exposure up to 8 hours, wear gloves made of the following material: Nitrile rubber. glove thickness 0.5mm

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

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

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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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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Generates toxic gas in contact with acid.
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10.4. Conditions to avoid

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

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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

Animal data No information available.

Serious eye damage/irritation

Serious eye damage/irritation No information available.

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.

Eye contact Causes burns. Causes serious eye damage.

Toxicological information on ingredients.

SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 1,100.0

Species Rat

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Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ 2,000.0 mg/kg)

Species Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ 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.

Inhalation May cause damage to mucous membranes in nose, throat, lungs and bronchial system. May cause respiratory system irritation.

Ingestion May cause chemical burns in mouth, oesophagus and stomach.

Skin contact May cause serious chemical burns to the skin.

Eye contact Causes burns. Causes serious eye damage.

SECTION 12: Ecological Information

Ecotoxicity Toxic to aquatic life with long lasting effects.

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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)₅₀ 0.01 < L(E)C₅₀ ≤ 0.1

M factor (Acute) 10

Acute toxicity - fish LC₅₀, 96 hours: 0.06 mg/l, Freshwater fish

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 0.141 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 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.

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 5% - < 20%

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

Proper shipping name (IMDG) HYPOCHLORITE SOLUTION

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

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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

ADN packing group II

ICAO packing group II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



14.6. Special precautions for user

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 Not applicable.

Annex II of MARPOL 73/78
and the IBC Code

SECTION 15: Regulatory information

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

EU legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
Commission Regulation (EU) No 2015/830 of 28 May 2015.
This product may impact SEVESO storage regulations.

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

Inventories

SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	ATE: Acute Toxicity Estimate.
	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
	ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
	CAS: Chemical Abstracts Service.
	DNEL: Derived No Effect Level.
	IATA: International Air Transport Association.
	IMDG: International Maritime Dangerous Goods.
	Kow: Octanol-water partition coefficient.
	LC ₅₀ : Lethal Concentration to 50 % of a test population.
	LD ₅₀ : Lethal Dose to 50% of a test population (Median Lethal Dose).
	PBT: Persistent, Bioaccumulative and Toxic substance.
	PNEC: Predicted No Effect Concentration.
	REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
	RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
	vPvB: Very Persistent and Very Bioaccumulative.
	IARC: International Agency for Research on Cancer.
	MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
	cATpE: Converted Acute Toxicity Point Estimate.
	BCF: Bioconcentration Factor.
	BOD: Biochemical Oxygen Demand.
	EC ₅₀ : 50% of maximal Effective Concentration.
	LOAEC: Lowest Observed Adverse Effect Concentration.
	LOAEL: Lowest Observed Adverse Effect Level.
	NOAEC: No Observed Adverse Effect Concentration.
	NOAEL: No Observed Adverse Effect Level.
	NOEC: No Observed Effect Concentration.
	LOEC: Lowest Observed Effect Concentration.
	DMEL: Derived Minimal Effect Level.
Classification abbreviations and acronyms	Acute Tox. = Acute toxicity
	Aquatic Acute = Hazardous to the aquatic environment (acute)
	Aquatic Chronic = Hazardous to the aquatic environment (chronic)
Key literature references and sources for data	ECHA Disseminated REACH Dossier
Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	27/07/2018
Version number	3.000
Supersedes date	08/03/2017
SDS number	47852
SDS status	Approved.

SODIUM HYPOCHLORITE SOLUTION 5% - < 20%

Hazard statements in full

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
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.

Signature

J Spenceley



Exposure scenario Consumer Use

Identification

Product name	Sodium Hypochlorite
REACH registration number	01-2119488154-34-XXXX
CAS number	7681-52-9
EC number	231-668-3
Supplier	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Consumer Use
Product category	PC34 Textile dyes, finishing and impregnating products, including bleaches and other processing aids. PC35 Washing and cleaning products (including solvent-based products). PC37 Water treatment chemicals.
Main sector	SU21 Consumer uses

Environment

Environmental release category	ERC8a Wide dispersive indoor use of processing aids in open systems. ERC8b Wide dispersive indoor use of reactive substances in open systems. ERC8d Wide dispersive outdoor use of processing aids in open systems. ERC8e Wide dispersive outdoor use of reactive substances in open systems.
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2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 15 %.

Frequency and duration of use

Emission days: 365 days/year

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

Consumer Use

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

Product name	Sodium Hypochlorite
REACH registration number	01-2119488154-34-XXXX
CAS number	7681-52-9
EC number	231-668-3
Supplier	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Industrial and professional cleaning
Product category	PC35 Washing and cleaning products (including solvent-based products).
Main sector	SU3 Industrial uses SU22 Professional uses
Sector of use	SU4 Manufacture of food products
<u>Environment</u>	
Environmental release category	ERC6b Industrial use of reactive processing aids. ERC8a Wide dispersive indoor use of processing aids in open systems. ERC8b Wide dispersive indoor use of reactive substances in open systems. ERC8d Wide dispersive outdoor use of processing aids in open systems. ERC8e Wide dispersive outdoor use of reactive substances in open systems.

Worker

Process category	PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC7 Spraying in industrial settings and applications. PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC10 Roller application or brushing of adhesive and other coating. PROC11 Spraying outside industrial settings and/or applications. 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 Wide dispersive indoor use of reactive substances in open systems. ERC8e Wide dispersive outdoor use of reactive substances in open systems.
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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)
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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 m³/day

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

Control of workers exposure

Process category	PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC11 Spraying outside industrial settings and/or applications. PROC13 Treatment of articles by dipping and pouring. PROC15 Use as laboratory reagent.
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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).

Industrial and professional cleaning

Risk management measures

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)

Sector of use	SU3 Industrial uses
Assessment method	Used ART model.
Exposure	PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m³, DNEL 1.55 mg/m³, RCR 0.81 PROC7 Spraying in industrial settings and applications. Worker - inhalation, long-term - local and systemic: Exposure 1.20 mg/m³, DNEL 1.55 mg/m³, RCR 0.77 PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m³, DNEL 1.55 mg/m³, RCR 0.81 PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Worker - inhalation, long-term - local and systemic: Exposure 0.91 mg/m³, DNEL 1.55 mg/m³, RCR 0.59 PROC10 Roller application or brushing of adhesive and other coating. Worker - inhalation, long-term - local and systemic: Exposure 1.00 mg/m³, DNEL 1.55 mg/m³, RCR 0.65 PROC13 Treatment of articles by dipping and pouring. Worker - inhalation, long-term - local and systemic: Exposure 0.70 mg/m³, DNEL 1.55 mg/m³, RCR 0.45

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)

Sector of use	SU22 Professional uses
Assessment method	Used ART model.

Industrial and professional cleaning

Exposure

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).

Worker - inhalation, long-term - local and systemic: Exposure 1.00 mg/m³, DNEL 1.55 mg/m³, RCR 0.65

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

Worker - inhalation, long-term - local and systemic: Exposure 1.10 mg/m³, DNEL 1.55 mg/m³, RCR 0.71

PROC10 Roller application or brushing of adhesive and other coating.

Worker - inhalation, long-term - local and systemic: Exposure 1.20 mg/m³, DNEL 1.55 mg/m³, RCR 0.77

PROC11 Spraying outside industrial settings and/or applications.

Worker - inhalation, long-term - local and systemic: Exposure 1.00 mg/m³, DNEL 1.55 mg/m³, RCR 0.65

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic: Exposure 1.20 mg/m³, DNEL 1.55 mg/m³, RCR 0.77

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic: Exposure 0.85 mg/m³, DNEL 1.55 mg/m³, 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

Product name	Sodium Hypochlorite
REACH registration number	01-2119488154-34-XXXX
CAS number	7681-52-9
EC number	231-668-3
Supplier	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Industrial Use
Product category	PC19 Intermediate. PC34 Textile dyes, finishing and impregnating products, including bleaches and other processing aids. PC20 Products such as ph-regulators, flocculants, precipitants, neutralization agents PC37 Water treatment chemicals.
Main sector	SU3 Industrial uses
Sector of use	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

Environmental release category	ERC6a Industrial use resulting in manufacture of another substance (use of intermediates). ERC6b Industrial use of reactive processing aids.
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Worker

Industrial Use

Process category	PROC1 Use in closed process, no likelihood of exposure.
	PROC2 Use in closed, continuous process with occasional controlled exposure
	PROC3 Use in closed batch process (synthesis or formulation).
	PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.
	PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).
	PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
	PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
	PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).
	PROC13 Treatment of articles by dipping and pouring.

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

Control of environmental exposure

Environmental release category	ERC6a Industrial use resulting in manufacture of another substance (use of intermediates).
	ERC6b Industrial use of reactive processing aids.
	ERC6d Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers.

Product characteristics

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

Frequency and duration of use

Emission days: 360 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 ³ /day

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

Control of workers exposure

Industrial Use

Process category

PROC1 Use in closed process, no likelihood of exposure.
 PROC2 Use in closed, continuous process with occasional controlled exposure
 PROC3 Use in closed batch process (synthesis or formulation).
 PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.
 PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).
 PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
 PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
 PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).
 PROC13 Treatment of articles by dipping and pouring.

Product characteristics

Physical state Liquid
Vapour pressure 2.5 kPa @ 20°C
Concentration details 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

Setting Indoor/outdoor use.
Temperature 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)

Assessment method Used ART model.

Industrial Use

Exposure

PROC1 Use in closed process, no likelihood of exposure.

Worker - inhalation, long-term - local and systemic: Exposure 0.02 mg/m³, DNEL 1.55 mg/m³, RCR 0.01

PROC2 Use in closed, continuous process with occasional controlled exposure

Worker - inhalation, long-term - local and systemic: Exposure 1.10 mg/m³, DNEL 1.55 mg/m³, RCR 0.71

PROC3 Use in closed batch process (synthesis or formulation).

Worker - inhalation, long-term - local and systemic: Exposure 1.10 mg/m³, DNEL 1.55 mg/m³, RCR 0.71

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.

Worker - inhalation, long-term - local and systemic: Exposure 1.20 mg/m³, DNEL 1.55 mg/m³, RCR 0.77

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).

Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m³, DNEL 1.55 mg/m³, RCR 0.81

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.

Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m³, DNEL 1.55 mg/m³, RCR 0.81

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.

Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m³, DNEL 1.55 mg/m³, RCR 0.81

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

Worker - inhalation, long-term - local and systemic: Exposure 0.91 mg/m³, DNEL 1.55 mg/m³, RCR 0.59

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic: Exposure 0.70 mg/m³, DNEL 1.55 mg/m³, RCR 0.45

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

Product name	Sodium Hypochlorite
REACH registration number	01-2119488154-34-XXXX
CAS number	7681-52-9
EC number	231-668-3
Supplier	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com

1. Title of exposure scenario

Main title	Manufacturing and Formulation
Process scope	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.
Main sector	SU3 Industrial uses
Sector of use	SU8 Manufacture of bulk, large-scale chemicals (including petroleum products) SU10 Formulation [mixing] of preparations and/or re-packaging

Environment

Environmental release category	ERC1 Manufacture of substances. ERC2 Formulation of preparations.
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Worker

Manufacturing and Formulation

Process category

PROC1 Use in closed process, no likelihood of exposure.
 PROC2 Use in closed, continuous process with occasional controlled exposure
 PROC3 Use in closed batch process (synthesis or formulation).
 PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.
 PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).
 PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
 PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
 PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).
 PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.
 PROC15 Use as laboratory reagent.

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

Control of environmental exposure

Environmental release category ERC1 Manufacture of substances.
 ERC2 Formulation of preparations.

Product characteristics

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

Frequency and duration of use

Emission days: 360 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. Handle all packages and containers carefully to minimise spills.
STP type Municipal STP.
STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

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

Water Onsite wastewater treatment required.
Soil 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

Waste treatment Dispose of waste in accordance with environmental legislation.
Disposal method 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

Process category

PROC1 Use in closed process, no likelihood of exposure.
 PROC2 Use in closed, continuous process with occasional controlled exposure
 PROC3 Use in closed batch process (synthesis or formulation).
 PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises.
 PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact).
 PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities.
 PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities.
 PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing).
 PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation.
 PROC15 Use as laboratory reagent.

Product characteristics

Physical state Liquid
Vapour pressure 2.5 kPa @ 20°C
Concentration details 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

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).

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

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)

Assessment method	Used ART model.
Exposure	PROC1 Use in closed process, no likelihood of exposure. Worker - inhalation, long-term - local and systemic: Exposure 0.02 mg/m³, DNEL 1.55 mg/m³, RCR 0.01 PROC2 Use in closed, continuous process with occasional controlled exposure Worker - inhalation, long-term - local and systemic: Exposure 1.10 mg/m³, DNEL 1.55 mg/m³, RCR 0.71 PROC3 Use in closed batch process (synthesis or formulation). Worker - inhalation, long-term - local and systemic: Exposure 1.10 mg/m³, DNEL 1.55 mg/m³, RCR 0.71 PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises. Worker - inhalation, long-term - local and systemic: Exposure 1.20 mg/m³, DNEL 1.55 mg/m³, RCR 0.77 PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m³, DNEL 1.55 mg/m³, RCR 0.81 PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m³, DNEL 1.55 mg/m³, RCR 0.81 PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. Worker - inhalation, long-term - local and systemic: Exposure 1.25 mg/m³, DNEL 1.55 mg/m³, RCR 0.81 PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Worker - inhalation, long-term - local and systemic: Exposure 0.91 mg/m³, DNEL 1.55 mg/m³, RCR 0.59 PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation. Worker - inhalation, long-term - local and systemic: Exposure 0.23 mg/m³, DNEL 1.55 mg/m³, RCR 0.15 PROC15 Use as laboratory reagent. Worker - inhalation, long-term - local and systemic: Exposure 0.70 mg/m³, DNEL 1.55 mg/m³, RCR 0.45

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.