

This safety data sheet was created pursuant to the requirements of:
UK REACH Regulations (SI 2019/758 as amended)

Revision date 03-Jun-2025

Revision Number 1

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

1.1. Product identifier

Product Code(s)	126365
Safety data sheet number	126365
Product Name	SODIUM HYPOCHLORITE 14 - 17% SOLUTIONS
Index No	017-011-00-1
EC Number	231-668-3
CAS No	7681-52-9
Synonyms	SOD HYPOCHLORITE 14/15%, SOD HYPOCHLORITE 14/15% SLY, SODIUM HYPOCHLORITE 15% SOLUTION, GE6078358 SODIUM HYPOCHLORITE SOLUTION 14/15 %, SODIUM HYPOCHLORITE 15% UNI 901:2007, SODIUM HYPOCHLORITE 14%, SOD HYPOCHLORITE 14/15% AKZO, SODIUM HYPOCHLORITE 150 g/l, HYPOCHLORITE SDE 55 HT (SODIUM HYPOCHLORITE), SOD HYPOCHLORITE 50HT, SOD HYPOCHLORITE 58% PCL, SODIUM HYPOCHLORITE 14% BIOCID
Pure substance/mixture	Substance
Contains SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE	

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

Recommended use	Manufacture of substance Intermediate Water treatment chemical Processing aid. For further information, see attached Exposure Scenario
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1.3. Details of the supplier of the safety data sheet

Supplier

Univar Solutions UK Ltd
Aquarius House
6 Mid Point Business Park
Bradford
GBR

For further information, please contact

E-mail address	SDS.EMEA@univarsolutions.com
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306

1.4. Emergency telephone number

Emergency Telephone	SGS - +32 (0)3 575 55 55 (24h)
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SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

Corrosive to metals	Category 1 - (H290)
Skin corrosion/irritation	Category 1 - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Acute aquatic toxicity	Category 1 - (H400)
Chronic aquatic toxicity	Category 2 - (H411)

2.2. Label elements

Contains SODIUM HYPOCHLORITE SOLUTION, ... % Cl ACTIVE

**Signal word**

Danger

Hazard statements

H314 - Causes severe skin burns and eye damage

H400 - Very toxic to aquatic life

H411 - Toxic to aquatic life with long lasting effects

H290 - May be corrosive to metals

EUH031 - Contact with acids liberates toxic gas

Precautionary statements

P260 - Do not breathe dust/fume/gas/mist/vapours/spray

P273 - Avoid release to the environment

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor

P391 - Collect spillage

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Chemical name	Weight-%	EC No (EU Index No)	UK REACH registration number	Classification according to GB CLP (SI 2020/1567 as amended)	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
SODIUM HYPOCHLORITE SOLUTION, ... % Cl	0 - 10%	231-668-3 (017-011-00 -1)	-	(EUH031) Skin Corr. 1B (H314) Eye Dam. 1 (H318)	-	10	1

ACTIVE 7681-52-9				Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)			
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Full text of H- and EUH-phrases: see section 16

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (UK REACH Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical attention.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical attention.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention.
Ingestion	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical attention.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

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

Symptoms	Burning sensation.
Eyes	Causes severe burns.
Dermal	Causes severe burns.

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

Note to doctors	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media	Dry chemical, CO ₂ , alcohol-resistant foam or water spray.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours.
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Hazardous combustion products	Carbon oxides. Hydrogen chloride.
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5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.
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Other information	Refer to protective measures listed in Sections 7 and 8.
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For emergency responders	Use personal protection recommended in Section 8.
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6.2. Environmental precautions

Environmental precautions	Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.
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6.3. Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
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Methods for cleaning up	Take up mechanically, placing in appropriate containers for disposal.
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Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.
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6.4. Reference to other sections

Reference to other sections	See section 8 for more information. See section 13 for more information.
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling	Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Take off contaminated clothing and wash it before reuse.
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General hygiene considerations	Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.
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7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Protect from direct sunlight.
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7.3. Specific end use(s)

Specific use(s)	See section 1 for more information.
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Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
SODIUM HYPOCHLORITE SOLUTION, ... % Cl ACTIVE 7681-52-9		0.5 % in mixture (weight basis) [5] [6]	3.1 mg/m ³ [7]

[5] Local health effects.

[6] Long term.

[7] Short term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
SODIUM HYPOCHLORITE SOLUTION, ... % Cl ACTIVE 7681-52-9	0.26 mg/kg bw/day [4] [6]	0.5 % in mixture (weight basis) [5] [6]	3.1 mg/m ³ [7]

[4] Systemic health effects.

[5] Local health effects.

[6] Long term.

[7] Short term.

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
SODIUM HYPOCHLORITE SOLUTION, ... % Cl ACTIVE 7681-52-9	0.21 µg/L	0.26 µg/L	0.042 µg/L		

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
SODIUM HYPOCHLORITE SOLUTION, ... % Cl ACTIVE 7681-52-9	0.00021 mg/l	0.000042 mg/l	4.69 mg/L		0.03 mg/l

8.2. Exposure controls

Engineering controls No information available.

Personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Use eye protection according to EN 166.

Hand protection Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Gloves must conform to standard EN 374.

Gloves			
Duration of contact	PPE - Glove material	Glove thickness	Break through time
Long term (repeated)	Polyvinyl chloride (PVC)	1.2 mm	8.0 hours

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state	Liquid
Appearance	Liquid
Colour	green yellow
Odour	Chlorine.
Odour threshold	No information available

Property	Values	Remarks • Method
Melting point / freezing point	-17.0 °C	
Initial boiling point and boiling range	> 100.0 °C	
Flammability		No information available.
Flammability Limit in Air		No information available.
Upper flammability or explosive limits		
Lower flammability or explosive limits		
Flash point	> 111.0 °C	
Autoignition temperature		No information available.
Decomposition temperature		No information available.
pH	> 11.0	
pH (as aqueous solution)		No information available.
Kinematic viscosity		No information available.
Dynamic viscosity		No information available.
Water solubility	Soluble in water	
Solubility(ies)		No information available.
Partition coefficient	-3.42	
Vapour pressure		No information available.
Relative density	1.20 - 1.27	
Bulk density		No information available
Liquid Density	No information available	No information available
Relative vapour density		No information available.
Particle characteristics		No information available.
Particle Size	No information available	
Particle Size Distribution	No information available	
Explosive properties	No information available	

Oxidising properties No information available

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Stable under recommended storage conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Exposure to air or moisture over prolonged periods. Excessive heat. Protect from sunlight.

10.5. Incompatible materials

Incompatible materials Strong acids. Strong bases. Amines.

10.6. Hazardous decomposition products

Hazardous decomposition products Carbon oxides. Hydrogen chloride.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

Inhalation May cause irritation.

Eye contact Causes severe burns.

Skin contact Causes severe burns.

Ingestion Causes corrosive burns of the mouth, gullet and gastrointestinal tract if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Acute toxicity

Numerical measures of toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
SODIUM HYPOCHLORITE	= 8.91 g/kg (Rat)	> 20000 mg/kg (Rabbit)	> 10.5 mg/L (Rat) 1 h

SOLUTION, ... % Cl ACTIVE			
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Causes severe burns.
Serious eye damage/eye irritation	Causes severe burns.
Respiratory or skin sensitisation	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.
Other adverse effects	No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
SODIUM HYPOCHLORITE SOLUTION, ... % Cl ACTIVE	-	LC50: 0.06 - 0.11mg/L (96h, Pimephales promelas) LC50: 4.5 - 7.6mg/L (96h, Pimephales promelas) LC50: 0.4 - 0.8mg/L (96h, Lepomis macrochirus) LC50: 0.28 - 1mg/L (96h, Lepomis macrochirus) LC50: 0.05 - 0.771mg/L (96h, Oncorhynchus mykiss) LC50: 0.03 - 0.19mg/L (96h, Oncorhynchus mykiss) LC50: 0.18 - 0.22mg/L (96h, Oncorhynchus mykiss)	-	EC50: 0.033 - 0.044mg/L (48h, Daphnia magna)

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential

Bioaccumulation No information available.

12.4. Mobility in soil

Mobility in soil Soluble in water.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB.

Chemical name	PBT and vPvB assessment
SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE	The substance is not PBT / vPvB

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information**IATA**

14.1 UN number or ID number UN1791
14.2 UN proper shipping name HYPOCHLORITE SOLUTION
14.3 Transport hazard class(es) 8
14.4 Packing group II
14.5 Environmental hazards Yes
14.6 Special precautions for user
Special Provisions A3, A803
ERG Code 8L

IMDG

14.1 UN number or ID number UN1791
14.2 UN proper shipping name HYPOCHLORITE SOLUTION (SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE)
14.3 Transport hazard class(es) 8
14.4 Packing group II
14.5 Environmental hazards Yes
14.6 Special precautions for user
Special Provisions 274, 900
EmS-No F-A, S-B
14.7 Maritime transport in bulk according to IMO instruments No information available

RID

14.1 UN number or ID number UN1791
14.2 UN proper shipping name HYPOCHLORITE SOLUTION

14.3 Transport hazard class(es)	8
14.4 Packing group	II
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	521
Classification code	C9

ADR

14.1 UN number or ID number	UN1791
14.2 UN proper shipping name	HYPOCHLORITE SOLUTION
14.3 Transport hazard class(es)	8
14.4 Packing group	II
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	521
Classification code	C9
Tunnel restriction code	(E)

SECTION 15: Regulatory information

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

National regulations

Authorisations and/or restrictions on use:

This product contains one or more substances subject to restriction (UK REACH - Annex XVII).
This product does not contain substances subject to authorisation (UK REACH - Annex XIV).

Persistent Organic Pollutants

Not applicable

Export Notification requirements

Not applicable

Dangerous substance category per COMAH Regulations 2015 (as amended)

E1 - Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1

Named dangerous substances per COMAH Regulations 2015 (as amended)

Not applicable

The Ozone-Depleting Substances Regulations 2015

Not applicable

The Biocidal Products Regulations 2001 (as amended)

Not applicable

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended)

Not applicable

Poisons Act 1972 (Explosive Precursors) Regulations (as Amended)

Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status
DSL/NDL	Contact supplier for inventory compliance status
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECI	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AIIC	Contact supplier for inventory compliance status
NZIoC	Contact supplier for inventory compliance status

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

15.2. Chemical safety assessment

Chemical Safety Report A Chemical Safety Assessment has been carried out for this substance

SECTION 16: Other information

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

Full text of H-Statements referred to under section 3

EUH031 - Contact with acids liberates toxic gas
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

Legend

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		

Revision Note ***Indicates updated data since last publication

Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)

Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Prepared By Jitendra Panchal

Revision date 03-Jun-2025

**This material safety data sheet complies with the requirements of UK REACH Regulations (SI 2019/758 as amended)
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work**

Disclaimer

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

End of Safety Data Sheet

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name	Sodium hypochlorite
Pure substance/mixture	Substance
REACH registration number	01-2119488154-34-XXXX
CAS No	7681-52-9
EC No (EU Index No)	231-668-3
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Manufacture of substance
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC1 - Manufacture of substances
Process category(ies)	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 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)
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU8 - Manufacture of bulk, large scale chemicals (including petroleum products)

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC1 - Manufacture of substances

Covers concentrations up to 25%

Product characteristics

Physical form of product	Liquid
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Other operational conditions of use affecting environmental exposure

Emission days	360
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Environmental factors not influenced by risk management

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

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Onsite wastewater treatment required Avoid discharge into water courses or onto the ground. Prevent environmental discharge consistent with regulatory requirements
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national
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	regulations
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Control of worker exposure	
Process category(ies)	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 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)
Title	General measures applicable to all activities
Covers concentrations up to	25%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide extract ventilation to points where emissions occur Ensure containment of the emission source
Organisational measures to prevent /limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OCs followed Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop Clean equipment and the work area every day
Indoor/Outdoor use	Indoor

Section 3 - Exposure estimation

Environmental release category(ies) - ERC1 - Manufacture of substances

Predicted No Effect Concentration (PNEC)

Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 1.55 mg/m³

Calculation method	Used ART model		
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.02 mg/m ³	0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	1.10 mg/m ³	0.71
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	1.10 mg/m ³	0.71
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	1.20 mg/m ³	0.77
PROC8a - Transfer of substance or preparation (charging/discharging)	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81

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	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.91 mg/m ³	0.59

Section 4 - Guidance to check compliance with the exposure scenario

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 RMMs or a site-specific chemical safety assessment is required.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name	Sodium hypochlorite
Pure substance/mixture	Substance
REACH registration number	01-2119488154-34-XXXX
CAS No	7681-52-9
EC No (EU Index No)	231-668-3
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Formulation & (re)packing of substances and mixtures
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC2 - Formulation of preparations (mixtures)
Process category(ies)	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 (multi-stage 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, pelettising PROC15 - Use as laboratory reagent
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU10 - Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC2 - Formulation of preparations (mixtures)

Covers concentrations up to 25%

Product characteristics

Physical form of product	Liquid
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Other operational conditions of use affecting environmental exposure

Emission days	360
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Environmental factors not influenced by risk management

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

Technical onsite conditions and	Onsite wastewater treatment required Avoid discharge into water courses or onto the
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measures to reduce or limit discharges, air emissions	ground. Prevent environmental discharge consistent with regulatory requirements
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Process category(ies)	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 (multi-stage 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, pelettising PROC15 - Use as laboratory reagent
Title	General measures applicable to all activities
Covers concentrations up to	25%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide extract ventilation to points where emissions occur Ensure containment of the emission source
Organisational measures to prevent /limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OCs followed Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop Clean equipment and the work area every day
Indoor/Outdoor use	Indoor

Section 3 - Exposure estimation

Environmental release category(ies) - ERC2 - Formulation of preparations (mixtures)

Predicted No Effect Concentration (PNEC)

Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 1.55 mg/m³

Calculation method	Used ART model		
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.02 mg/m ³	0.01
PROC2 - Use in closed, continuous process with occasional controlled	Worker - inhalative, long-term - systemic	1.10 mg/m ³	0.71

exposure			
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	1.10 mg/m ³	0.71
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	1.20 mg/m ³	0.77
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.91 mg/m ³	0.59
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - inhalative, long-term - systemic	0.23 mg/m ³	0.15
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	0.70 mg/m ³	0.45

Section 4 - Guidance to check compliance with the exposure scenario

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 RMMs or a site-specific chemical safety assessment is required.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name	Sodium hypochlorite
Pure substance/mixture	Substance
REACH registration number	01-2119488154-34-XXXX
CAS No	7681-52-9
EC No (EU Index No)	231-668-3
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Use as an intermediate
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Process category(ies)	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 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)
Product category(ies)	PC19 - Intermediate
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU8 - Manufacture of bulk, large scale chemicals (including petroleum products) SU9 - Manufacture of fine chemicals

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

Covers concentrations up to 25%

Product characteristics

Physical form of product	Liquid
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Other operational conditions of use affecting environmental exposure

Emission days	360
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Environmental factors not influenced by risk management

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

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Onsite wastewater treatment required Avoid discharge into water courses or onto the ground. Prevent environmental discharge consistent with regulatory requirements
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Process category(ies)	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 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)
Title	General measures applicable to all activities
Covers concentrations up to	25%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide extract ventilation to points where emissions occur Ensure containment of the emission source
Organisational measures to prevent /limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OCs followed Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop Clean equipment and the work area every day
Indoor/Outdoor use	Indoor

Section 3 - Exposure estimation

Environmental release category(ies) - ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

Predicted No Effect Concentration (PNEC)

Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 1.55 mg/m³

Calculation method

Used ART model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.02 mg/m ³	0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	1.10 mg/m ³	0.71
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	1.10 mg/m ³	0.71
PROC4 - Use in batch and other	Worker - inhalative, long-term	1.20 mg/m ³	0.77

process (synthesis) where opportunity for exposure arises	- systemic		
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.91 mg/m ³	0.59

Section 4 - Guidance to check compliance with the exposure scenario

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 RMMs or a site-specific chemical safety assessment is required.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name	Sodium hypochlorite
Pure substance/mixture	Substance
REACH registration number	01-2119488154-34-XXXX
CAS No	7681-52-9
EC No (EU Index No)	231-668-3
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Textile dyes, finishing and impregnating products; including bleaches and other processing aids (Industrial use)
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC6b - Industrial use of reactive processing aids
Process category(ies)	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 (multi-stage 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 category(ies)	PC34 - Textile dyes, finishing and impregnating products
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU5 - Manufacture of textiles, leather, fur

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC6b - Industrial use of reactive processing aids

Covers concentrations up to 25%

Product characteristics

Physical form of product	Liquid
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Other operational conditions of use affecting environmental exposure

Emission days	360
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Environmental factors not influenced by risk management

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

Technical onsite conditions and	Onsite wastewater treatment required Avoid discharge into water courses or onto the
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measures to reduce or limit discharges, air emissions	ground. Prevent environmental discharge consistent with regulatory requirements
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Process category(ies)	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 (multi-stage 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
Title	General measures applicable to all activities
Covers concentrations up to	25%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide extract ventilation to points where emissions occur Ensure containment of the emission source
Organisational measures to prevent /limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OCs followed Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop Clean equipment and the work area every day
Indoor/Outdoor use	Indoor

Section 3 - Exposure estimation

Environmental release category(ies) - ERC6b - Industrial use of reactive processing aids

Predicted No Effect Concentration (PNEC)

Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 1.55 mg/m³

Calculation method	Used ART model		
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.02 mg/m ³	0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	1.10 mg/m ³	0.71

PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	1.10 mg/m ³	0.71
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	1.20 mg/m ³	0.77
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.91 mg/m ³	0.59
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.70 mg/m ³	0.45

Section 4 - Guidance to check compliance with the exposure scenario

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 RMMs or a site-specific chemical safety assessment is required.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name	Sodium hypochlorite
Pure substance/mixture	Substance
REACH registration number	01-2119488154-34-XXXX
CAS No	7681-52-9
EC No (EU Index No)	231-668-3
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Water Treatment (Industrial use)
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC6b - Industrial use of reactive processing aids
Process category(ies)	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 (multi-stage 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)
Product category(ies)	PC34 - Textile dyes, finishing and impregnating products
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU23 - Recycling

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC6b - Industrial use of reactive processing aids

Covers concentrations up to 25%

Product characteristics

Physical form of product	Liquid
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Other operational conditions of use affecting environmental exposure

Emission days	360
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Onsite wastewater treatment required Avoid discharge into water courses or onto the ground. Prevent environmental discharge consistent with regulatory requirements
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Process category(ies)	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 (multi-stage 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)
Title	General measures applicable to all activities
Covers concentrations up to	25%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide extract ventilation to points where emissions occur Ensure containment of the emission source
Organisational measures to prevent /limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OCs followed Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop Clean equipment and the work area every day
Indoor/Outdoor use	Indoor

Section 3 - Exposure estimation

Environmental release category(ies) - ERC6b - Industrial use of reactive processing aids

Predicted No Effect Concentration (PNEC)

Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 1.55 mg/m³

Calculation method

Used ART model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.02 mg/m ³	0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	1.10 mg/m ³	0.71
PROC3 - Use in closed batch process	Worker - inhalative, long-term	1.10 mg/m ³	0.71

(synthesis or formulation)	- systemic		
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	1.20 mg/m ³	0.77
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.91 mg/m ³	0.59

Section 4 - Guidance to check compliance with the exposure scenario

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 RMMs or a site-specific chemical safety assessment is required.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name	Sodium hypochlorite
Pure substance/mixture	Substance
REACH registration number	01-2119488154-34-XXXX
CAS No	7681-52-9
EC No (EU Index No)	231-668-3
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Use in Cleaning Agents (Industrial)
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC6b - Industrial use of reactive processing aids
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC7 - Industrial spraying 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 PROC13 - Treatment of articles by dipping and pouring
Product category(ies)	PC35 - Washing and cleaning products (including solvent based products)
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU4 - Manufacture of food products

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC6b - Industrial use of reactive processing aids

Covers concentrations up to 25%

Product characteristics

Physical form of product	Liquid
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Other operational conditions of use affecting environmental exposure

Emission days	360
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Environmental factors not influenced by risk management

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

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Onsite wastewater treatment required Avoid discharge into water courses or onto the ground. Prevent environmental discharge consistent with regulatory requirements
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national
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	regulations
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Control of worker exposure	
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC7 - Industrial spraying 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 PROC13 - Treatment of articles by dipping and pouring
Title	General measures applicable to all activities
Covers concentrations up to	25%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide extract ventilation to points where emissions occur Ensure containment of the emission source
Organisational measures to prevent /limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OCs followed Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop Clean equipment and the work area every day
Indoor/Outdoor use	Indoor

Section 3 - Exposure estimation

Environmental release category(ies) - ERC6b - Industrial use of reactive processing aids

Predicted No Effect Concentration (PNEC)

Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 1.55 mg/m³

Calculation method		Used ART model	
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	1.20 mg/m ³	0.77
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.91 mg/m ³	0.59

PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	1.00 mg/m ³	0.65
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.70 mg/m ³	0.45

Section 4 - Guidance to check compliance with the exposure scenario

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 RMMs or a site-specific chemical safety assessment is required.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name	Sodium hypochlorite
Pure substance/mixture	Substance
REACH registration number	01-2119488154-34-XXXX
CAS No	7681-52-9
EC No (EU Index No)	231-668-3
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Manufacture of pulp, paper and paper products (Industrial use)
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC6b - Industrial use of reactive processing aids
Process category(ies)	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 (multi-stage 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)
Product category(ies)	PC26 - Paper and board dye, finishing and impregnation products; including bleaches and other processing aids
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU6b - Manufacture of pulp, paper and paper products

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC6b - Industrial use of reactive processing aids

Covers concentrations up to 25%

Product characteristics

Physical form of product	Liquid
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Other operational conditions of use affecting environmental exposure

Emission days	360
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Environmental factors not influenced by risk management

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

Technical onsite conditions and measures to reduce or limit discharges,	Onsite wastewater treatment required Avoid discharge into water courses or onto the ground. Prevent environmental discharge consistent with regulatory requirements
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air emissions	
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Process category(ies)	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 (multi-stage 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)
Title	General measures applicable to all activities
Covers concentrations up to	25%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide extract ventilation to points where emissions occur Ensure containment of the emission source
Organisational measures to prevent /limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OCs followed Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop Clean equipment and the work area every day
Indoor/Outdoor use	Indoor

Section 3 - Exposure estimation

Environmental release category(ies) - ERC6b - Industrial use of reactive processing aids

Predicted No Effect Concentration (PNEC)

Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 1.55 mg/m³

Calculation method	Used ART model		
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.02 mg/m ³	0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	1.10 mg/m ³	0.71
PROC3 - Use in closed batch process	Worker - inhalative, long-term	1.10 mg/m ³	0.71

(synthesis or formulation)	- systemic		
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	1.20 mg/m ³	0.77
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	1.25 mg/m ³	0.81
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.91 mg/m ³	0.59

Section 4 - Guidance to check compliance with the exposure scenario

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 RMMs or a site-specific chemical safety assessment is required.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name	Sodium hypochlorite
Pure substance/mixture	Substance
REACH registration number	01-2119488154-34-XXXX
CAS No	7681-52-9
EC No (EU Index No)	231-668-3
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Use in Cleaning Agents (Professional)
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	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
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC9 - Transfer of substance or preparation 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
Product category(ies)	PC35 - Washing and cleaning products (including solvent based products)
Sector(s) of use	SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - 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

Covers concentrations up to 25%

Product characteristics

Physical form of product	Liquid
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Other operational conditions of use affecting environmental exposure

Emission days	360
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and	Avoid discharge into water courses or onto the ground. Prevent environmental discharge
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measures to reduce or limit discharges, air emissions	consistent with regulatory requirements
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC9 - Transfer of substance or preparation 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
Title	General measures applicable to all activities
Covers concentrations up to	5%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide extract ventilation to points where emissions occur Ensure containment of the emission source
Organisational measures to prevent /limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OCs followed Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop Clean equipment and the work area every day
Indoor/Outdoor use	Covers indoor and outdoor use

Section 3 - Exposure estimation

Environmental release category(ies) - 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

Predicted No Effect Concentration (PNEC)

Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 1.55 mg/m³

Calculation method

Used ART model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	1.00 mg/m ³	0.65
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including	Worker - inhalative, long-term - systemic	1.10 mg/m ³	0.71

weighing)			
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	1.20 mg/m ³	0.77
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	1.00 mg/m ³	0.65
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	1.20 mg/m ³	0.77
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	0.85 mg/m ³	0.55

Section 4 - Guidance to check compliance with the exposure scenario

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 RMMs or a site-specific chemical safety assessment is required.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name	Sodium hypochlorite
Pure substance/mixture	Substance
REACH registration number	01-2119488154-34-XXXX
CAS No	7681-52-9
EC No (EU Index No)	231-668-3
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Consumer use
Type	Consumer
Main user group	Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	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
Product category(ies)	PC34 - Textile dyes, finishing and impregnating products PC35 - Washing and cleaning products (including solvent based products) PC37 - Water treatment chemicals
Sector(s) of use	SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - 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

Covers concentrations up to 25%

Product characteristics

Physical form of product	Liquid
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Other operational conditions of use affecting environmental exposure

Emission days	365
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Municipal STP
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Control of consumer exposure	
Product categories [PC]	PC34 - Textile dyes, finishing and impregnating products PC35 - Washing and cleaning products (including solvent based products) PC37 - Water treatment chemicals
Covers concentrations up to	12.5%
Physical form of product	Liquid
Vapour pressure	25 hPa
Exposure duration	4 events per day Avoid carrying out operation for more than 30 minutes
Use frequency	Covers use up to 7 days per week
Indoor/Outdoor use	Indoor
Use in room with a volume of minimum	4 m ³
Minimum room ventilation rate for handling/application (air changes per hour)	0.5

Section 3 - Exposure estimation

Environmental release category(ies) - 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

Predicted No Effect Concentration (PNEC)

Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Exposure route Consumer - all relevant routes
Remarks Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented

Section 4 - Guidance to check compliance with the exposure scenario

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 RMMs or a site-specific chemical safety assessment is required.