

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH).

Reference Number: SDS2; Revision Date: 20/09/2022; Revision No.:09,



SODIUM HYPOCHLORITE, 5% ≥ C <16%

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifiers

-Product Name : **SODIUM HYPOCHLORITE, SOLUTION 5% ≥ C < 16%**
-Chemical Characterization : Stabilized product
-Synonyms : Hypochlorous acid, sodium salt, Javel extract
-Molecular Formula : NaClO
- EC No. : 231-668-3
-REACH Registration Number : 01-2119488154-34-0047
-Type of Product : Reaction mass

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

-Identified uses :
- Bleaching agent, Oxidizing agents, Reagent, Disinfectant, Cleaning agent
- Water treatment agent
- Biocidal Active Substance for Product Categories PT2, PT3, PT4, PT5, PT11, PT12

-Uses advised against : - None identified

1.3. Details of the supplier of the safety data sheet

-Company : MICRO-BIO (IRELAND) LTD
-Address : Industrial Estate, Fermoy, Co Cork, Ireland
-Telephone : +3532531388
-Fax : +3532532458
-E-mail address : dobrien@micro-bio.ie

1.4. Emergency telephone number

-Emergency telephone number : +3532531388 (Available 24/7)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

2.1.1. European regulation (EC) 1272/2008, as amended

Classified as hazardous according to the European regulation (EC) 1272/2008, as amended

Hazard class	Hazard category	H Phrases
Corrosive to metals	Category 1	H290
Skin corrosion / irritation	Category 1B	H314
Eye damage / eye irritation	Category 1	H318
Acute aquatic toxicity	Category 1	H400
Chronic aquatic toxicity	Category 2	H411

2.2. Label elements

2.2.1. Name(s) on label

Hazardous components : Sodium hypochlorite (≥ 5 - < 16%)

2.2.2. Signal word

Danger

2.2.3. Hazard symbols

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According to Regulation (EC) No. 1907/2006 (REACH).



2.2.4. Hazard statements

H290	-	May be corrosive to metals.
H314	-	Causes severe skin burns and eye damage.
H318	-	Causes serious eye damage
H400	-	Very toxic to aquatic life.
H411	-	Toxic to aquatic life with long lasting effects
EUH031	-	Contact with acids liberates toxic gas.

2.2.5. Precautionary statements

Prevention	P260	- Do not breathe dust/fume/gas/mist/vapours/spray.
	P273	- Avoid release to the environment
	P280	- Wear protective gloves/protective clothing/eye protection/face protection.
Response	P310	- Immediately call a POISON CENTRE or doctor/physician.
	P390	- Absorb spillage to prevent material damage
	P303 + P361 + P353	- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
	P305 + P351 + P338	- IF IN EYES: Rinse cautiously with water for several minutes. Remove Contact lenses, if present and easy to do so. Continue rinsing.
Storage	P403 + P233	- Store in a well-ventilated place. Keep container tightly closed.
Disposal	P501	- Dispose of contents/container in accordance with local regulation.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

Substance name	Hazard class	Hazard category	H Phrases	Concentration
Sodium hypochlorite, solution CAS-No.: 7681-52-9 EC-No.: 231-668-3 Index-No.: 017-011-00-1	Corrosive to metals	Category 1	H290	≥ 5 - < 16 %
	Skin corrosion / irritation	Category 1B	H314	
	Eye damage / eye irritation	Category 1	H318	
	Specific target organ toxicity – single exposure	Category 3	H335	
	Aquatic acute	Category 1	H400	
	Aquatic chronic	Category 1	H410	
			EUH031	

For full text of H Statements see section 16.

Specific concentration limit (SCL) EUH031: C ≥ 5 %, Aquatic M Factor = 10, Chronic M Factor = 1

SECTION 4: FIRST AID MEASURES

4.1. Description of necessary first-aid measures

4.1.1. If inhaled (Chlorine gas)

- Move to fresh air.
- Give Oxygen or artificial respiration if needed.
- Victim to lie down in the recovery position, cover and keep him warm.
- Call a physician immediately.

4.1.2. In case of eye contact-

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- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
 - In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine).
 - Call a physician or poison control centre immediately.
 - Take victim immediately to hospital.
- 4.1.3. In case of skin contact-
SPEED IS ESSENTIAL
- Take off contaminated clothing and shoes immediately.
 - Wash off immediately with plenty of water.
 - Keep warm and in a quiet place.
 - Call a physician or poison control centre immediately.
 - Wash contaminated clothing before re-use.
- 4.1.4. If swallowed
- Call a physician or poison control centre immediately.
 - Take victim immediately to hospital.
 - If swallowed, rinse mouth with water (only if the person is conscious).
 - Do NOT induce vomiting.
 - Artificial respiration and/or oxygen may be necessary.
- 4.2. Most important symptoms and effects, both acute and delayed**
- 4.2.1. Inhalation (of chlorine gas due to contact with acid)
- Severe respiratory irritant
 - Irritating to mucous membranes
 - Symptoms: Breathing difficulties, cough, chemical pneumonitis, pulmonary oedema
 - Repeated or prolonged exposure: Nose bleeds, chronic bronchitis
- 4.2.2. Skin contact
- Severe skin irritation.
 - Symptoms: Redness, Swelling of tissue, Burn
 - Repeated exposure: Ulceration
- 4.2.3. Eye contact
- Severe eye irritation
 - May cause irreversible eye damage. May cause blindness.
 - Symptoms: Redness, Lachrymation, Swelling of tissue, Burn
- 4.2.4. Ingestion
- If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
 - Risk of chemical pneumonitis from product inhalation.
 - Risk of shock.
 - Symptoms: Nausea, Abdominal pain, Bloody vomiting, Diarrhoea, Suffocation, Cough, Severe shortness of breath.
 - Risk of: Respiratory disorder.
- 4.3 Indication of any immediate medical attention and special treatment needed -**
- Symptomatic treatment and supportive therapy as indicated.
 - The seriousness of the lesions and the prognosis of intoxication depend directly on the concentration and duration of exposure.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

5.1.1. Suitable extinguishing media

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.1.2. Unsuitable extinguishing media

- None.

5.2. Special hazards arising from the substance or mixture



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According to Regulation (EC) No. 1907/2006 (REACH).

- Not combustible
- Hazardous decomposition products formed under fire conditions.
- Promotes combustion of combustible products or materials.

5.3. Advice for firefighters

- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.
- Wear chemical resistant oversuit.
- Cool containers / tanks with water spray.
- Suppress (knock down) gasses/vapours/mists with a water spray jet.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. Advice for non-emergency personnel

- Prevent further leakage or spillage if safe to do so.
- Keep away from Incompatible products.

6.1.2. Advice for emergency responders

- Isolate the area. Evacuate personnel to safe areas.
- Keep people away from and upwind of spill/leak.
- Ventilate the area.
- Wear suitable protective clothing.
- Wear self-contained breathing apparatus in confined spaces, in cases where the oxygen level is depleted, or in case of significant emissions.

6.2. Environmental precautions

- Should not be released into the environment.
- Do not flush into surface water or sanitary sewer system.
- In case of accidental release or spill, immediately notify the appropriate authorities if required by Federal, State/Provincial and local laws and regulations.

6.3. Methods and materials for containment and cleaning up

- Dam up.
- Soak up with inert absorbent material.
- Prevent product from entering drains.
- Keep in properly labelled containers.
- Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

- Refer to protective measures listed in sections 7 and 8

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Provide appropriate exhaust ventilation.
- Use only in well-ventilated areas.
- Keep away from incompatible products.
- To avoid thermal decomposition, do not overheat.
- Use only equipment and materials which are compatible with the product.
- Do not confine the product in a circuit, between closed valves, or in a container without a vent.

7.2. Conditions for safe storage, including any incompatibilities

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According to Regulation (EC) No. 1907/2006 (REACH).

7.2.1. Storage

- Store in original container.
- Keep in a well-ventilated place. Keep cool.
- Keep in properly labelled containers.
- Keep container closed (vented cap).
- Keep in a banded area.
- Protect from direct sunlight. Store in a cool and dark place to preserve the quality of the product.
- Keep away from incompatible products.

7.2.2. Packaging material

7.2.2.1. Suitable material

- Reinforced polyester, Steel coated, PVC, Polyethylene, Glass

7.2.2.2. Unsuitable material

- Metals

7.3. **Specific use(s)**

- For further information, please contact: Supplier

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. **Control parameters**

8.1.1 **Occupational Exposure Limits** IRL OELV, UK WEL

SUBSTANCE.	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note:
Chlorine	7782-50-5	-	-	0.5	1.5	IOELV

8.2. **Exposure controls**

8.2.1. Appropriate engineering controls

- Provide local ventilation appropriate to the product decomposition risk (see section 10)
- Provide appropriate exhaust ventilation at machinery.
- Apply technical measures to comply with the occupational exposure limits.

8.2.2. Individual protection measures

8.2.2.1. Respiratory protection

- In case of insufficient ventilation, wear suitable respiratory equipment.
- When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Self-contained breathing apparatus (EN 133)
- Respirator with a vapour filter (EN 141)
- In case of decomposition (see section 10), face mask with combined type B-P2 cartridge.

8.2.2.2. Hand protection

- Impervious gloves in compliance with EN374:2003.
- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). The following list may be used for guidance but is not exhaustive:
- Nitrile rubber- NBR: thickness \geq 0,35mm; breakthrough time \geq 480min.
- Polyvinyl chloride- PVC: thickness \geq 0,5mm; breakthrough time \geq 480min.
- Butyl rubber: thickness \geq 0,5mm; breakthrough time \geq 480min.
- Dispose of contaminated gloves appropriately.
- Unsuitable material: Leather
-

8.2.2.3. Eye protection

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According to Regulation (EC) No. 1907/2006 (REACH).

- Chemical resistant goggles or full-face shield must be worn.
- If splashes are likely to occur, wear: Tightly fitted safety goggles and full-face shield.

8.2.2.4. Skin and body protection

- Wear suitable protective clothing.
- Chemical resistant apron
- If splashes are likely to occur, wear: Rubber or plastic boots

8.2.2.5. Hygiene measures

- Ensure that eyewash stations and safety showers are close to the workstation location.
- Take off contaminated clothing and shoes immediately.
- Wash contaminated clothing before re-use.
- When using, do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

8.2.3. Environmental Exposure controls

- Dispose of rinse water in accordance with local and national regulations.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

9.1.1. General Information

- Appearance** liquid
- Colour** yellow, green
- Odour** pungent-Chlorine
- Molecular Weight** 74.5 g/mol

9.1.2. Important health safety and environmental information

- pH** >11 (15% solution)
- pKa** No data
- Melting point/freezing point** -17°C (15% solution); crystals of Sodium Chloride may form at low temperature (<5°C)
- Boiling point/boiling range** 110
- Flash point** not applicable
- Evaporation rate** No data
- Flammability (solid, gas)** not applicable
- Flammability** The product is not flammable
- Explosive properties** Not explosive.
- Vapour pressure** 2.5 kPa, at 20°C
- Vapour density** 2.5
- Density** No data
- Relative density** 1.25 at 20°C (Chlorine;15%) ;1.3, at 21.2°C (Chlorine; 24.3%)
- Bulk density** No data
- Solubility(ies)** Completely miscible
- Solubility/qualitative** no data available
- Partition coefficient: n-octanol/water** not applicable
- Autoignition temperature** not applicable
- Decomposition temperature** 40°C, Slow decomposition
- Viscosity** 6.4 mPa.s
- Oxidizing properties** Non oxidizer

9.2. Other information

- Surface tension 82.4 mN/m 20°C (Chlorine; 24.3%)

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According to Regulation (EC) No. 1907/2006 (REACH).

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Contact with acids liberates toxic gas.

10.2. Chemical stability

- Stable under recommended storage conditions.
- Corrosive in contact with metals

10.3. Possibility of hazardous reactions

Contact with acids liberates toxic gas - Chlorine.
Hazardous polymerization will not occur.

10.4. Conditions to avoid

- Keep away from direct sunlight
- To avoid thermal decomposition, do not overheat.
- Freezing

10.5. Materials to avoid

- Acids,
- Metals (Nickel, Copper, Cobalt, Aluminium, Manganese, etc.)
- Salts of metals,
- Organic materials

10.6. Hazardous decomposition products

- Risk of decomposition, Chlorine, Sodium chlorate
- Hypochlorous acid, predominant at acid pH, is 4 to 5 fold more toxic than hypochlorite ion. The release of other hazardous decomposition products is possible.

► SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Chlorine gas produced under fire or acidic conditions is toxic by inhalation.

Acute toxicity

Based upon the available data, the classification criteria are not met.

Acute oral toxicity

- LD50, rat, > 1,100 mg/kg (Chlorine)

Acute inhalation toxicity

- LC50, 1 h, rat, > 10.5 mg/l (Chlorine)

Acute dermal toxicity

- LD50, rabbit, > 20,000 mg/kg (Chlorine)

Skin corrosion/irritation

Causes severe skin burns.

- Rabbit; corrosive effects

Serious eye damage/eye irritation

Causes serious eye damage

- Rabbit; Severe eye irritation

Respiratory/skin sensitization

Based upon the available data, the classification criteria are not met.

- Guinea pig; did not cause sensitization on laboratory animals.

Germ cell mutagenicity

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According to Regulation (EC) No. 1907/2006 (REACH).

Based upon the available data, the classification criteria are not met.

- in vitro, Ambiguous mutagenic effect
- in vivo tests did not show mutagenic effects

Carcinogenicity

Based upon the available data, the classification criteria are not met.

- Oral, rat, 50 mg/kg, NOAEL

Reproductive toxicity

Based upon the available data, the classification criteria are not met.

- Oral, rat, 5 mg/kg, Effects on fertility, NOAEL, (Chlorine)
- Oral, rat, 5.7 mg/kg, Developmental Toxicity, NOAEL, (Chlorine)

STOT - single exposure

Based upon the available data, the classification criteria are not met.

- Human experience, Remarks: May cause respiratory irritation.

STOT - repeated exposure

Based upon the available data, the classification criteria are not met.

- Oral, 90-day, rat, 50 mg/kg, NOAEL

Aspiration hazard

- Based upon the available data, the classification criteria are not met.

11.2 Information on other hazards

- Toxic effect linked with corrosive properties

► SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

- Fishes, various species, LC50, 96 h, 0.06mg/l, fresh water (active chlorine)
- Fishes, Menidia peninsulae, NOEC, 96 h, 0.04 mg/l, salt water (Chlorine)
- Fishes, various species, 96 h, 0.032 mg/l, Marine water (active chlorine)
- Crustaceans, various species, EC50, 48 h, 0.026 mg/l (Chlorine)
- Crustaceans, Daphnia magna, EC50, 48 h, 0.141 mg/l, fresh water (active chlorine)

12.2. Persistence and degradability

12.2.1. Abiotic degradation

- Water, photolysis, $t_{1/2} = 12$ min
Result: photolysis
Conditions: pH 8
- Water, photolysis, $t_{1/2} = 60$ min
Result: photolysis
Conditions: pH5
- Air, indirect photo-oxidation, $t_{1/2} 115$ d
Degradation products: Chlorine
- Water, Hydrolysis
Result: Chemical degradation
Degradation products: chlorides

12.2.2. Biodegradation

- The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

- Does not bioaccumulate.

12.4. Mobility

- Water, Soil



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- Considerable solubility and mobility
- Soil/sediments, log KOC: 1.12
Highly mobile in soils
- Air, Henry's law constant (H), 0.076 Pa.m³/mol, 20°C Non-significant volatility

12.5. Results of PBT and vPvB assessment

Not classified as PBT or vPvB

12.6 Endocrine disrupting properties

None.

12.7. Other adverse effects

- No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product

- In accordance with local and national regulations.
- Reduce the product with sulphite or hydrogen peroxide.

Contaminated packaging

- Empty containers.
- Clean container with water.
- The empty and clean containers are to be reused in conformity with regulations.

▶ SECTION 14: TRANSPORT INFORMATION

14.1. UN number or ID number	ADR / RID / ADN / IMDG / IATA-DGR UN 1791
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	Not applicable
14.7. Maritime transport in bulk according to IMO instruments	Not applicable
14.8. Additional information	
ADR/RID HI/UN No.	80 / 1791
IMDG EmS	F-A S-B

SECTION 15: REGULATORY INFORMATION

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

- 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.

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According to Regulation (EC) No. 1907/2006 (REACH).

- COUNCIL DIRECTIVE 2012/18/EU on the control of major-accident hazards involving dangerous substances as amended. Thresholds-quantity 1: 100mt; Quantity:200mt
- Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended.
- REGULATION (EC) No 166/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC.
- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste.
- Code of Practice for the Safety Health & Welfare at Work (Chemical Agents) Regulations 2021 (SI No. 619 of 2001)
- EH40/2005. Workplace Exposure Limits, as amended through 1,10,2007 (WELs). Published by the Health and Safety Executive

15.2. Chemical Safety Assessment

- A Chemical Safety Assessment has been carried out for this substance.

Notification status

Inventory Information	Status
Toxic Substance Control Act list (TSCA)	- In compliance with inventory
Australian Inventory of Chemical Substances (AICS)	- In compliance with inventory
Canadian Domestic Substances List (DSL)	- In compliance with inventory
Korean Existing Chemicals Inventory (KECI (KR))	- In compliance with inventory
EU list of existing chemical substances (EINECS)	- In compliance with inventory
Japanese Existing and New Chemical Substances (MITI List)	- In compliance with inventory
Inventory of Existing Chemical Substances (China) (IECS)	- In compliance with inventory
Philippine Inventory of Chemicals and Chemical Substances	- In compliance with inventory
New Zealand Inventory of Chemicals (NZIOC)	- In compliance with inventory

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under section 3

- 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.
- EUH031 - Contact with acids liberates toxic gas.

Other information

Section	Revisions to Previous issue
11, 12, 14	Update in accordance with Regulation (EU) 2020/878.

- Indicates altered Section

Supersedes: Version 8

- Distribute new edition to clients

This SDS is only intended for the indicated country to which it is applicable. The European SDS format compliant with the applicable European legislation is not intended for use nor distribution in countries outside the European Union with the exception of Norway and Switzerland. Safety datasheets applicable in other countries/regions are available upon request. The information given corresponds to the current state of our knowledge and experience of the product, and is not exhaustive. This applies to product which conforms to the specification, unless otherwise stated. In this case of combinations and mixtures one must make sure that no new dangers can arise. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and protection of human welfare and the environment.