

Safety Data Sheet

Sodium hypochlorite

Replaces date: 12/08/2020

Revision date: 22/07/2022

Version: 1.8.0

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

1.1. Product identifier

Trade name: Sodium hypochlorite

Formula: NaOCl

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

ERC: Manufacture of substances (ERC1).
Formulation into mixture (ERC2).
Use of intermediate (ERC6a).
Use of reactive processing aid at industrial site (no inclusion into or onto article) (ERC6b).

See enclosed exposure scenarios for further information.

1.3. Details of the supplier of the safety data sheet

Supplier

Company: Borregaard AS
Address: P.O. Box 162
City: 1701 Sarpsborg
Country: NORWAY
E-mail: sds@borregaard.com
Phone: + 47 69 11 80 00
Fax: + 47 69 11 87 70

1.4. Emergency Telephone Number

Members of the public: 111 (NHS 111 (Scotland: NHS 24)).
+ 47 69 11 88 88 (Borregaard emergency) (24 h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

CLP-classification: Met. Corr. 1;H290 Skin Corr. 1B;H314 Aquatic Acute 1;H400 Aquatic Chronic 2;H411

Most serious harmful effects: May be corrosive to metals. Causes severe skin burns and eye damage. Very toxic to aquatic life with long lasting effects.

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2.2. Label elements

Pictograms



Signal word: Danger

Contains

Substance: sodium hypochlorite, solution Cl active;

Hazard Statements

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

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303+361+353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P310 Immediately call a POISON CENTER/doctor
P273 Avoid release to the environment.
P501+501 Dispose of contents/container to approved waste treatment.

Supplemental information

EUH031 Contact with acids liberates toxic gas.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

| Substance | CAS No./ EC No./ REACH Reg. No. | Concentration | Notes | CLP-classification |
|---|--|---------------|-------|--|
| sodium hypochlorite, solution ... % Cl active | 7681-52-9 231-668-3 01-2119488154-34 | 10 - 20 % | | Skin Corr. 1B;H314 Eye Dam. 1;H318 Aquatic Acute 1;H400 Aquatic Chronic 1;H410 EUH031 C ≥ 5%: EUH031 M (acute): 10 M (chronic): 1 |
| sodium hydroxide | 1310-73-2 215-185-5 | < 1 % | | Skin Corr. 1A;H314 2% ≤ C < 5%: Skin Corr. 1B; H314 C ≥ 5%: Skin Corr. 1A; H314 0.5% ≤ C < 2%: Skin Irrit. 2; H315 0.5% ≤ C < 2%: Eye Irrit. 2; H319 |
| sodium carbonate | 497-19-8 207-838-8 | < 1 % | | Eye Irrit. 2;H319 |

Please see section 16 for the full text of H- / EUH-phrases.

Ingredient comments: Contact with acids liberates toxic gas.

SECTION 4: First aid measures

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4.1. Description of first aid measures

| | |
|----------------------|--|
| Inhalation: | Seek fresh air. Seek medical advice in case of persistent discomfort. |
| Ingestion: | Do not induce vomiting. Wash out mouth thoroughly and drink 1-2 glasses of water in small sips. Call for medical attention/ambulance. |
| Skin contact: | Wash the skin thoroughly with water and continue washing for a long time. Take off contaminated clothing and wash before reuse. Seek medical advice immediately. |
| Eye contact: | Open eye wide, remove any contact lenses and flush immediately with water (preferably using eye wash equipment). Seek medical advice immediately. Continue flushing until medical attention is obtained. |
| General: | When obtaining medical advice, show the safety data sheet or label. |

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

Eye contact may result in deep caustic burns, pain, tearing and cramping of the eyelids. Risk of serious eye injury and loss of sight. Has a caustic burning effect and causes burning pain, reddening, blistering and burning sores if it comes in contact with skin. Inhalation is corrosive to the upper airways. Causes a burning sensation in the nose, mouth and throat, together with sneezing, coughing, breathing difficulties and chest pain.

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|--|---|
| Suitable extinguishing media: | Extinguish with powder, foam, carbon dioxide or water mist. |
| Unsuitable extinguishing media: | Do not use water stream, as it may spread the fire. |

5.2. Special hazards arising from the substance or mixture

Product decomposes in fire conditions or when heated to high temperatures, and inflammable and toxic gases may be released.

5.3. Advice for firefighters

Extinguishing water which has been in contact with the product may be corrosive. Wear Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit but gas-tight suit when close proximity to the substance or its vapours is likely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

| | |
|-------------------------------------|---|
| For non-emergency personnel: | Stay upwind/keep distance from source. Wear suitable protective clothing. Wear safety goggles/face protection. |
| For emergency responders: | If there is a risk of exposure to vapour and flue gases, a self-contained breathing apparatus must be worn. Chemical protective suit equivalent to EN 943-2 is recommended. |

6.2. Environmental precautions

Notify proper authorities in case of contamination of soil or aquatic environment or discharge to drains. Prevent spillage from entering drains and/or surface water.

6.3. Methods and material for containment and cleaning up

Contain and absorb spill with sand or other absorbent material and transfer to suitable waste containers.

6.4. Reference to other sections

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See section 13 for instructions on disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

A safety shower must be available. Avoid contact with skin and eyes. All work must be carried out under well-ventilated conditions. Wash hands before breaks, before using restroom facilities, and at the end of work. Do not eat, drink or smoke during work. Take off contaminated clothing and wash before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Store in a dry, cool, well-ventilated area. Do not expose to heat (e.g. sunlight).

7.3. Specific end use(s)

Caution! Causes burns.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit

| Substance name | Time period | ppm | mg/m ³ | fiber/cm ³ | Remarks | Comments |
|------------------|-------------|-----|-------------------|-----------------------|---------|----------|
| sodium hydroxide | 15m | | 2 | | | |

Measuring methods: Compliance with occupational exposure limits may be checked by occupational hygiene measurements.

PNEC

| Exposure | Value | Assessment Factor | Extrapolation Method | Note |
|---|-----------------|-------------------|----------------------|------|
| sodium hypochlorite, solution ... % Cl active, cas-no 7681-52-9 | | | | |
| PNEC aqua (marine water) | 0.042 µg/l | 50 | Assessment Factor | |
| PNEC oral (foodstuffs) | 11.1 mg/kg food | 90 | Assessment Factor | |
| PNEC STP (wastewater-treatment facilities) | 4.69 mg/l | 10 | Assessment Factor | |
| PNEC aqua (freshwater) | 0.21 µg/l | 10 | Assessment Factor | |

DNEL - workers

| Exposure | Value | Assessment Factor | Dose Descriptor | Main Impact Parameter | Note |
|---|------------------------|-------------------|-----------------|------------------------|------|
| sodium hypochlorite, solution ... % Cl active, cas-no 7681-52-9 | | | | | |
| Inhalation DNEL (long-term exposure - systemic effects) | 1.55 mg/m ³ | | | Repeated dose toxicity | |
| Inhalation DNEL (acute/short-term exposure - systemic effects) | 3.1 mg/m ³ | | | Repeated dose toxicity | |
| Inhalation DNEL (long-term exposure - local effects) | 1.55 mg/m ³ | | | Repeated dose toxicity | |
| Inhalation DNEL (acute/short-term exposure - local effects) | 3.1 mg/m ³ | | | Repeated dose toxicity | |

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| | | | | | |
|--|-------|--|--|------------------------|--|
| Dermal DNEL (long-term exposure - local effects) | 0.5 % | | | Repeated dose toxicity | |
|--|-------|--|--|------------------------|--|

DNEL - general population

sodium hypochlorite, solution ... % Cl active, cas-no 7681-52-9

| Exposure | Value | Assessment Factor | Dose Descriptor | Main Impact Parameter | Note |
|--|------------------------|-------------------|-----------------|------------------------|------|
| Inhalation DNEL (long-term exposure - systemic effects) | 1.55 mg/m ³ | | | Repeated dose toxicity | |
| Inhalation DNEL (acute/short-term exposure - systemic effects) | 3.1 mg/m ³ | | | Repeated dose toxicity | |
| Inhalation DNEL (long-term exposure - local effects) | 1.55 mg/m ³ | | | Repeated dose toxicity | |
| Inhalation DNEL (acute/short-term exposure - local effects) | 3.1 mg/m ³ | | | Repeated dose toxicity | |
| Dermal DNEL (long-term exposure - local effects) | 0.5 % | | | Repeated dose toxicity | |
| Oral DNEL (long-term exposure - systemic effects) | 0.26 mg/kg bw | | | Repeated dose toxicity | |

8.2. Exposure controls

| | |
|---|--|
| Exposure controls: | See enclosed exposure scenarios for further information. |
| Appropriate engineering controls: | Do not eat, drink or smoke when using this product. Degreasing effect on skin. Warning! Do not use with other products. May release dangerous gases (chlorine). Chemical protective suit equivalent to EN 943-2 is recommended. Wash contaminated clothing before reuse. |
| Personal protective equipment, eye/face protection: | Wear safety goggles/face protection. Eye protection must conform to EN 166. |
| Personal protective equipment, skin protection: | Wear protective clothing that is resistant to the following: Chemical protective suit equivalent to EN 943-2 is recommended. |
| Personal protective equipment, hand protection: | Type of material and thickness: Polyvinyl chloride (PVC) 1.2 mm Break-through time: >8 hours. |
| Personal protective equipment, respiratory protection: | In case of insufficient ventilation, wear respiratory protective equipment. Filter type: B. E. Respiratory protection must conform to one of the following standards: EN 136/140/145. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| Parameter | Value/unit |
|------------|---------------------|
| State | Liquid |
| Colour | Yellow Green |
| Odour | Prickling |
| Solubility | Completely miscible |

| Parameter | Value/unit | Remarks |
|-----------------|---------------|---------|
| Odour threshold | 0.2 - 0.5 ppm | |
| Melting point | - 28.9 °C | |
| Freezing point | - 28.9 °C | |

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| | | |
|---|-------------------------|--|
| Initial boiling point and boiling range | ~ 100 °C | |
| Flammability (solid, gas) | | Not relevant. The product is a liquid. |
| Flammability limits | | Not flammable. |
| Explosion limits | vol% | Non-explosive |
| Flash Point | 111 °C | |
| Auto-ignition temperature | No data | |
| Decomposition temperature | No data | |
| pH (solution for use) | > 12 | |
| pH (concentrate) | > 12 | |
| Kinematic viscosity | No data | |
| Viscosity | 6.2 - 6.6 cSt | |
| Partition coefficient n-octanol/water | -3.42 | |
| Vapour pressure | ~ 17.5 mmHg | |
| Density | ~1.21 g/cm ³ | |
| Relative density | 1.3 | |
| Vapour density | | Data not available |
| Relative density (sat. air) | No data | |
| Particle characteristics | No data | |

9.2. Other information

| Parameter | Value/unit | Remarks |
|----------------------|------------|--------------------|
| Molecular weight | 74,5 | |
| Evaporation rate | | Data not available |
| Explosive properties | | Non-explosive |
| Oxidising properties | | Non-oxidising. |

SECTION 10: Stability and reactivity

10.1. Reactivity

Oxidisers. May generate toxic gases when mixed with other products. May be corrosive to metals.

10.2. Chemical stability

The product is stable when used in accordance with the supplier's directions. However, the product may develop toxic fumes when heated.

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Strong acids/ Do not expose to heat (e.g. sunlight). Alkalis.

10.5. Incompatible materials

Avoid contact with the following: Amines/ Strong acids/ Metals/ Amines/

10.6. Hazardous decomposition products

The product decomposes when combusted or heated to high temperatures and the following toxic gases can be formed: chlorine Inhalation of vapours/spray mist is corrosive to the upper airways.

SECTION 11: Toxicological information

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

Acute toxicity - oral

sodium hypochlorite, solution ... % Cl active, cas-no 7681-52-9

| Organism | Test Type | Exposure time | Value | Conclusion | Test method | Source |
|----------|-----------|---------------|---------------|------------|-------------|---------------|
| Rat | LD50 | | 1100 mg/kg bw | | OECD 401 | REACH dossier |

Based on existing data, the classification criteria are deemed not to have been met.

Acute toxicity - dermal

sodium hypochlorite, solution ... % Cl active, cas-no 7681-52-9

| Organism | Test Type | Exposure time | Value | Conclusion | Test method | Source |
|----------|-----------|---------------|------------------|------------|-------------|---------------|
| Rabbit | LD50 | | > 20000 mg/kg bw | | OECD 402 | REACH dossier |

Based on existing data, the classification criteria are deemed not to have been met.

Acute toxicity - inhalation

sodium hypochlorite, solution ... % Cl active, cas-no 7681-52-9

| Organism | Test Type | Exposure time | Value | Conclusion | Test method | Source |
|----------|-----------|---------------|---------------|------------|-------------|---------------|
| Rat | LC50 | | > 10500 mg/m3 | | OECD 403 | REACH dossier |

Based on existing data, the classification criteria are deemed not to have been met.

Skin corrosion/irritation:

Has a caustic burning effect and causes burning pain, reddening, blistering and burning sores if it comes in contact with skin.

Serious eye damage/eye irritation:

Eye contact may result in deep caustic burns, pain, tearing and cramping of the eyelids. Risk of serious eye injury and loss of sight.

Respiratory sensitisation or skin sensitisation

sodium hypochlorite, solution ... % Cl active, cas-no 7681-52-9

| Organism | Test Type | Exposure time | Value | Conclusion | Test method | Source |
|------------|-----------|---------------|-------|-----------------|-------------|---------------|
| Guinea pig | | | | Non-sensitising | OECD 406 | REACH dossier |

Based on existing data, the classification criteria are deemed not to have been met.

Germ cell mutagenicity:

Based on existing data, the classification criteria are deemed not to have been met.

Carcinogenic properties:

Based on existing data, the classification criteria are deemed not to have been met.

Reproductive toxicity:

Based on existing data, the classification criteria are deemed not to have been met.

Single STOT exposure:

Based on existing data, the classification criteria are deemed not to have been met.

Repeated STOT exposure:

Based on existing data, the classification criteria are deemed not to have been met.

Aspiration hazard:

Based on existing data, the classification criteria are deemed not to have been met.

11.2. Information on other hazards

Endocrine disrupting properties:

None known.

SECTION 12: Ecological information

12.1. Toxicity

The product affects the pH value of the local aquatic environment. Very toxic to aquatic life.

12.2. Persistence and degradability

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Inorganic substance(s)

12.3. Bioaccumulative potential

No bioaccumulation expected.

12.4. Mobility in soil

Test data are not available.

12.5. Results of PBT and vPvB assessment

The product does not contain any PBT or vPvB substances.

12.6. Endocrine disrupting properties

None known.

12.7. Other adverse effects

The product affects the pH value of the local aquatic environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Collect spills and waste in closed, leak-proof containers for disposal at the local hazardous waste site. Uncleansed packaging is to be disposed of via the local waste-removal scheme.

SECTION 14: Transport information

Land transport (ADR/RID)

| | | | |
|-----------------------------------|-----------------------|------------------------------|---|
| 14.1. UN number or ID number: | 1791 | 14.4. Packing group: | III |
| 14.2. UN proper shipping name: | HYPOCHLORITE SOLUTION | 14.5. Environmental hazards: | The product must be labelled as an environmental hazard (symbol: fish and tree) in packaging sizes of more than 5 kg/l. |
| 14.3. Transport hazard class(es): | 8 | | |
| Hazard label(s): | 8 | | |
| Hazard identification number: | 80 | Tunnel restriction code: | E |

Inland water ways transport (ADN)

| | | | |
|-----------------------------------|-----------------------|------------------------------|-----|
| 14.1. UN number or ID number: | 1791 | 14.4. Packing group: | III |
| 14.2. UN proper shipping name: | HYPOCHLORITE SOLUTION | 14.5. Environmental hazards: | |
| 14.3. Transport hazard class(es): | 8 | | |
| Hazard label(s): | 8 | | |
| Transport in tank vessels: | | | |

Sea transport (IMDG)

| | | | |
|-----------------------------------|-----------------------|--|-----|
| 14.1. UN number or ID number: | 1791 | 14.4. Packing group: | III |
| 14.2. UN proper shipping name: | HYPOCHLORITE SOLUTION | 14.5. Environmental hazards: | |
| 14.3. Transport hazard class(es): | 8 | Environmental Hazardous Substance Name(s): | |
| Hazard label(s): | 8 | | |

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EmS: F-A, S-B **IMDG Code segregation group:** Segr. grp. 8 - Hypochlorites (SGG8)

Air transport (ICAO-TI / IATA-DGR)

14.1. UN number or ID number: 1791 **14.4. Packing group:** III
14.2. UN proper shipping name: HYPOCHLORITE SOLUTION **14.5. Environmental hazards:**
14.3. Transport hazard class(es): 8
Hazard label(s): 8

14.6. Special precautions for user

None.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

SECTION 15: Regulatory information

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

Special Provisions: ADR/RID. REACH (EC 1907/2006) GHS/CLP (EC NO1272/2008) GHS USA June, 2015.

15.2. Chemical Safety Assessment

Other Information: See enclosed exposure scenarios for further information.

SECTION 16: Other information

Version history and indication of changes

| Version | Revision date | Responsible | Changes |
|---------|---------------|---------------|-------------------|
| 1.8.0 | 22/07/2022 | Borregaard AS | Section 3, 10, 11 |
| 1.7.0 | 12/08/2020 | Borregaard AS | Section 3 |
| 1.6.0 | 24/10/2019 | Borregaard AS | Section 9, 11 |
| 1.5.1 | 24/09/2018 | Borregaard AS | Section 8 |
| 1.5.0 | 13/11/2017 | Borregaard AS | Section 2, 3 |
| 1.4.0 | 21/09/2017 | Borregaard AS | Section 2, 8 |
| 1.3.0 | 15/12/2016 | Borregaard AS | Ch 11/12 |
| 1.2.0 | 22/01/2016 | Borregaard AS | NIHA |

References to literature and data sources: Exposure scenario ECHA reg. sub.: ECHA database for information on registered substances.

Vendor notes: Information given in this safety data sheet is in accordance with our information, and to the best of our knowledge, was correct on the last revision date. Information given is intended to present guidelines for safe handling, use, processing, storage, transport, disposal and discharge; it is not intended to be a guarantee or quality specification. It is the responsibility of the recipient of this safety data sheet to ensure that information given here is read and understood by all who use, handle, dispose of or in any way come in contact with the product.

Classification method: ADR/RID. REACH (EC 1907/2006) GHS/CLP (EC NO1272/2008) GHS USA June, 2015.

List of relevant H-statements

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| | |
|------|---|
| H290 | May be corrosive to metals. |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H411 | Toxic to aquatic life with long lasting effects. |

List of relevant EUH-statements

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

| | |
|-----------------|----|
| Country: | GB |
|-----------------|----|