We create chemistry

Safety data sheet

1. Identification

Product identifier

Sodium hypochlorite solution

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

Relevant identified uses: Chemical
Recommended use: process chemical, oxidizing agents, Bleaching agents

Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY
Division Monomers

Telephone: +49 621 60 42737
E-mail address: pss.monomers@basf.com

Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

2. Hazards Identification

Classification of the substance or mixture

According to UN GHS criteria

Met. Corr. 1
Skin Corr. 1B
Eye Dam. 1
Aquatic Acute 1
Aquatic Chronic 2

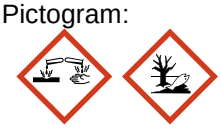
M-factor acute: 10

For the classifications not written out in full in this section the full text can be found in section 16.

Label elements

Globally Harmonized System (GHS)

Pictogram:



Signal Word:
Danger

Hazard Statement:

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

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P273	Avoid release to the environment.
P260	Do not breathe dust or mist.
P264	Wash contaminated body parts thoroughly after handling.
P234	Keep only in original packaging.

Precautionary Statements (Response):

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 physician.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P391	Collect spillage.
P390	Absorb spillage to prevent material damage.

Precautionary Statements (Storage):
P405 Store locked up.
P406 Store in corrosive resistant container with a resistant inner liner.

Precautionary Statements (Disposal):
P501 Dispose of contents and container to hazardous or special waste collection point.

Labeling of special preparations (GHS):
Contact with acids liberates toxic gas.

According to UN GHS criteria

Hazard determining component(s) for labelling: Sodium hypochlorite

Other hazards

According to UN GHS criteria

No specific dangers known, if the regulations/notes for storage and handling are considered. If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

3. Composition/Information on Ingredients

Substances

Not applicable

Mixtures

Chemical nature

Sodium hypochlorite (Content (W/W): >= 13 % - <= 16 %)
NaOCl
CAS 7681-52-9 EINECS 231-668-3

dissolved in: Water

Hazardous ingredients (GHS)
According to UN GHS criteria

Sodium hypochlorite

Content (W/W): >= 10 % - < 20 %	Met. Corr. 1
CAS Number: 7681-52-9	Skin Corr. 1B
EC-Number: 231-668-3	Eye Dam. 1
INDEX-Number: 017-011-00-1	STOT SE 3 (irr. to respiratory syst.)
	Aquatic Acute 1
	Aquatic Chronic 1
	M-factor acute: 10
	M-factor chronic: 1
	H290, H335, H314, H400, H410
	EUH031
	Specific concentration limit:
	>= 5 %

Sodium chloride

Content (W/W): >= 10 % - < 15 %	Acute Tox. 5 (oral)
CAS Number: 7647-14-5	H303
EC-Number: 231-598-3	

Sodium hydroxide

Content (W/W): > 0 % - < 1 %	Met. Corr. 1
CAS Number: 1310-73-2	Skin Corr. 1A
EC-Number: 215-185-5	Eye Dam. 1
INDEX-Number: 011-002-00-6	H290, H314
	Specific concentration limit:
	Skin Irrit. 2: 0,5 - < 2 %
	Eye Irrit. 2: 0,5 - < 2 %
	Skin Corr. 1A: >= 5 %
	Skin Corr. 1B: 2 - < 5 %

For the classifications not written out in full in this section the full text can be found in section 16.

4. First-Aid Measures

Description of first aid measures

First aid personnel should pay attention to their own safety. Immediately remove contaminated clothing. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position).

If inhaled:
Inhale corticosteroid dose aerosol. Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:
Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

On contact with eyes:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Immediately rinse mouth and then drink 200 - 300 ml water, do not induce vomiting, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

Hazards: No hazard is expected under intended use and appropriate handling.

Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote, administer corticosteroid dose aerosol to prevent pulmonary odema.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
water spray

Unsuitable extinguishing media for safety reasons:
water jet

Special hazards arising from the substance or mixture

Vapors and/or decomposition products are irritant and/or toxic. Substance/product may act as an oxidizer.

Chlorine, Sodium hydroxide
The substances/groups of substances mentioned can be released if the product is involved in a fire.

Advice for fire-fighters

Special protective equipment:
Wear a self-contained breathing apparatus.

Further information:
If exposed to fire, keep containers cool by spraying with water. Product itself is non-combustible; fire extinguishing method of surrounding areas must be considered.

6. Accidental Release Measures

Soiled textiles/cleaning rags made of natural fibres (e.g. of pure wool or of pure cotton) are capable of ignition and should not be used and/or must be desposed of in a safe manner.

Personal precautions, protective equipment and emergency procedures

Avoid inhalation. Avoid contact with the skin, eyes and clothing. Contact with natural fibres (e.g. of pure wool or of pure cotton) should be avoided because of possible ignition.

Environmental precautions
Do not empty into drains.

Methods and material for containment and cleaning up
For residues: Sweep/shovel up. Dispose of absorbed material in accordance with regulations.

7. Handling and Storage

Precautions for safe handling

Pressure relief device necessary.

Protection against fire and explosion:
The substance/product is non-combustible.

Conditions for safe storage, including any incompatibilities

Segregate from acids.

Suitable materials for containers: High density polyethylene (HDPE), Bromobutyl rubber (BIIR) Vulcoferran 2208 (Steuler KCH), Bromobutyl rubber (BIIR) Vulcoferran 2208 T (Steuler KCH), Bromobutyl rubber (BIIR) HAW-W08 (HAW Linings), Bromobutyl rubber (BIIR) Chemoline 4, Chemoline RT (TIP TOP Elbe), Bromobutyl rubber (BIIR) Vulcoferran 2206 (Steuler KHC), Bromobutyl rubber (BIIR) Vulcoferran 2209 T (Steuler KHC), chlorsulfonated polyethylene / polyvinylchloride (CSM/PVC), Chemoline 8 (TIP TOP Elbe)
, chlorsulfonated polyethylene (CSM), Hypalon
Unsuitable materials for containers: HAW-W12 (Hypalon, identical to Vulcoferran 2512, supplier HAW Linings GmbH), Compound based on HR004 / HR006 (supplier: Ragep), Aluminium, Iron, steel, copper, alloys containing copper.
Further information on storage conditions: Keep in a cool, well-ventilated place. Protect from the effects of light. Keep away from heat.

Specific end use(s)

See exposure scenario(s) in the attachment to this safety data sheet.

8. Exposure Controls/Personal Protection

Control parameters

Components with occupational exposure limits

1310-73-2: Sodium hydroxide
7647-14-5: Sodium chloride

Exposure controls

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Self-contained breathing apparatus.

Hand protection:
Chemical resistant protective gloves (EN ISO 374-1)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):
polyvinylchloride (PVC) - 0.7 mm coating thickness
nitrile rubber (NBR) - 0.4 mm coating thickness
chloroprene rubber (CR) - 0.5 mm coating thickness
butyl rubber (butyl) - 0.7 mm coating thickness
fluoroelastomer (FKM) - 0.7 mm coating thickness
Manufacturer's directions for use should be observed because of great diversity of types.
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Eye protection:
Tightly fitting safety goggles (cage goggles) (e.g. EN 166) and face shield.

Body protection:
Protective suit, chemical-protection suit (f.e. according to EN 14605)

General safety and hygiene measures
Take off immediately all contaminated clothing.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

State of matter:	liquid	
Form:	solution, liquid	
Colour:	yellow to green	
Odour:	pungent, of chlorine	
Odour threshold:		
	Not determined due to potential health hazard by inhalation.	
Melting point:	-30 - -20 °C	(other)
Boiling point:	100 °C (1.013 mbar) Information applies to the solvent. The substance / product decomposes.	
Flammability:	not flammable	(other)
Lower explosion limit:		
	For liquids not relevant for classification and labelling.	
Upper explosion limit:		
	For liquids not relevant for classification and labelling.	
Flash point:		
	not applicable	

Auto-ignition temperature:		
	not applicable	
Thermal decomposition:	Decomposes on heating.	
pH value:	12	(OECD Guideline 122)
	(160 g/l)	
Viscosity, dynamic:	3 - 4 mPa.s	(OECD Guideline 114)
	(20 °C)	
Solubility in water:	readily soluble	
	(15 °C)	
Partitioning coefficient n-octanol/water (log Kow):		
	The value has not been determined because the substance is inorganic.	
Vapour pressure:	20 mbar	(measured)
	(20 °C)	
Density:	1,24 - 1,26 g/cm3	
	(20 °C)	
Relative vapour density (air):		
	not determined	
Particle characteristics		
Particle size distribution:	The substance / product is marketed or used in a non solid or granular form. -	

9.2. Other information

Information with regard to physical hazard classes

Explosives
Explosion hazard: not explosive
Oxidizing properties
Fire promoting properties: not fire-propagating

Other safety characteristics

Miscibility with water:
completely (e.g. >=90%)
Evaporation rate:
Value can be approximated from Henry's Law Constant or vapor pressure.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

Reacts with acids. Exothermic reaction.

Conditions to avoid

Avoid extreme temperatures.

Incompatible materials

Substances to avoid:
acids, metal

Hazardous decomposition products

Hazardous decomposition products:
Chlorine

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Experimental/calculated data:
LD50 rat (oral): > 5.000 mg/kg
The statement for acute oral toxicity was derived from products of similar composition. Literature data.

LD50 rabbit (dermal): > 5.000 mg/kg
The statement for acute dermal toxicity was derived from products of similar composition. Literature data.

Information on: Sodium hypochlorite
Assessment of acute toxicity:
The toxicity of the product is based on its corrosivity.

Irritation

Assessment of irritating effects:
Corrosive! Damages skin and eyes. Risk of serious damage to eyes.

Experimental/calculated data:
Skin corrosion/irritation rabbit: Corrosive.
The product has not been tested. The statement has been derived from the properties of the individual components.

Serious eye damage/irritation rabbit: irreversible damage
The product has not been tested. The statement has been derived from the properties of the individual components.

Respiratory/Skin sensitization

Experimental/calculated data:

No data available.

Information on: Sodium hypochlorite
Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies.

Germ cell mutagenicity

Information on: Sodium hypochlorite
Assessment of mutagenicity:
The substance was mutagenic in various test systems with microorganisms and cell cultures; however, these results could not be confirmed in tests with mammals.

Carcinogenicity

Information on: Sodium hypochlorite
Assessment of carcinogenicity:
In long-term studies in rats and mice in which the substance was given by drinking-water, a carcinogenic effect was not observed.

Reproductive toxicity

Information on: Sodium hypochlorite
Assessment of reproduction toxicity:
No data available. The chemical structure does not suggest a specific alert for such an effect.

Aspiration hazard

Study does not need to be conducted.

12. Ecological Information

Toxicity

Assessment of aquatic toxicity:
Very toxic (acute effect) to aquatic organisms. Very toxic to aquatic life with long lasting effects.

Toxicity to fish:
LC50 (96 h) 0,01 - 0,1 mg/l, Fish
The ecological data given are those of the active ingredient.

Aquatic invertebrates:
EC50 (48 h) 0,01 - 0,1 mg/l, daphnia
The ecological data given are those of the active ingredient.

Microorganisms/Effect on activated sludge:
Toxic limit concentration 0,375 mg/l, activated sludge
Literature data.

Information on: Sodium hypochlorite
Assessment of aquatic toxicity:
Very toxic (acute effect) to aquatic organisms. Depending on local conditions and existing concentrations, disturbances in the biodegradation process of activated sludge are possible.

Information on: Sodium hypochlorite
Aquatic plants:
EC50 (168 h) approx. 0,023 mg/l (other), unspecified algae (other, Flow through.)
Literature data.

No observed effect concentration (168 h) 0,0021 mg/l (other), unspecified algae (other, Flow through.)
Literature data.

Persistence and degradability

Assessment biodegradation and elimination (H2O):
Inorganic product which cannot be eliminated from water by biological purification processes. The product can be degraded abiotically, e.g. chemical or photolytic processes.

Information on Stability in Water (Hydrolysis):
$t_{1/2}$ 2 h
The action of light on the surface strat in water will induce decomposition.

Bioaccumulative potential

Bioaccumulation potential:
Accumulation in organisms is not to be expected.

Mobility in soil

Assessment transport between environmental compartments:
Adsorption in soil: No data available.

Other adverse effects

The product does not contain substances that are listed in Regulation (EU) 2024/590 on substances that deplete the ozone layer.

Additional information

Adsorbable organically-bound halogen (AOX):
The Substance/product may have a halogenizing effect and therefore contribute to the OBH.

Other ecotoxicological advice:
Because of harmful effects on water organisms should not be introduced into drains. Do not discharge product into the environment without control. Do not discharge substance/product into sewer system. The substance/ product may be toxic to aquatic organisms in effluent treatment plants

or surface waters by splitting of reactive substance groups. Very toxic (acute effect) to aquatic organisms.

13. Disposal Considerations

Waste treatment methods

Reduce with sodium sulphite, sodium pyrosulphite or sodium thiosulphate.

Contaminated packaging:
Transport containers should be completely emptied and returned.

14. Transport Information

Land transport

ADR

UN number or ID number:	UN1791
UN proper shipping name:	HYPOCHLORITE SOLUTION
Transport hazard class(es):	8, EHSM
Packing group:	II
Environmental hazards:	yes
Special precautions for user:	Tunnel code: E

RID

UN number or ID number:	UN1791
UN proper shipping name:	HYPOCHLORITE SOLUTION
Transport hazard class(es):	8, EHSM
Packing group:	II
Environmental hazards:	yes
Special precautions for user:	None known

Inland waterway transport

ADN

UN number or ID number:	UN1791
UN proper shipping name:	HYPOCHLORITE SOLUTION
Transport hazard class(es):	8, EHSM
Packing group:	II
Environmental hazards:	yes
Special precautions for user:	None known

Transport in inland waterway vessel
Not evaluated

Sea transport

IMDG

UN number or ID number:	UN 1791
UN proper shipping name:	HYPOCHLORITE SOLUTION
Transport hazard class(es):	8, EHSM
Packing group:	II
Environmental hazards:	yes Marine pollutant: YES
Special precautions for user:	EmS: F-A; S-B

Air transport

IATA/ICAO

UN number or ID number:	UN 1791
UN proper shipping name:	HYPOCHLORITE SOLUTION
Transport hazard class(es):	8
Packing group:	II
Environmental hazards:	No Mark as dangerous for the environment is needed
Special precautions for user:	None known

Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

15. Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

16. Other Information

Assessment of the hazard classes according to UN GHS criteria (most recent version)

M-factor acute: 10

Full text of classifications, hazard symbols and hazard statements, if mentioned in section 2 or 3:

Met. Corr.	Corrosive to metals
Skin Corr.	Skin corrosion
Eye Dam.	Serious eye damage
Aquatic Acute	Hazardous to the aquatic environment - acute
Aquatic Chronic	Hazardous to the aquatic environment - chronic
STOT SE	Specific target organ toxicity — single exposure
Acute Tox.	Acute toxicity
Skin Irrit.	Skin irritation
Eye Irrit.	Eye irritation
H290	May be corrosive to metals.
H335	May cause respiratory irritation.
H314	Causes severe skin burns and eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H303	May be harmful if swallowed.
EUH031	Contact with acids liberates toxic gas.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.