

# Material Safety Data Sheet

Revision Date: 10.12.2021

## SODIUM HYPOCHLORITE

### 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

#### 1.1 Product identifier

**Product name** : Sodium Hypochlorite  
**Synonyms / Other names** : Sodium salt of hypochlorous acid, Sodium oxychloride

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

**Recommended Use** : Drinking water disinfectant, Pool water disinfectant

#### 1.3 Details of the supplier of the safety data sheet

**Supplier** : Novichem Co.  
30 Magnolia Str, Qaem Maqam Farahani Ave.  
Tehran15886/13941 IRAN

#### 1.4. Emergency and contact telephone numbers

Contact telephone number : +98-21-88329799 (Product information)

### 2. HAZARDS IDENTIFICATION

#### 2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)

- Warning, Met. Corr. 1, May be corrosive to metals.
- Danger, Skin Corr. 1B, Causes severe skin burns and eye damage.
- Danger, Eye Dam. 1, Causes serious eye damage.
- Warning, Aquatic Chronic 1, Very toxic to aquatic life with long lasting effects.
- Warning, Aquatic Acute 1, Very toxic to aquatic life.

EUH031 Contact with acids liberates toxic gas.

Adverse physicochemical, human health and environmental effects:

- No other hazards

#### 2.2. Label elements

Hazard pictograms:



#### Danger

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:

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

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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 doctor.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

### Special Provisions:

EUH031 Contact with acids liberates toxic gas.

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

### 2.3. Other hazards

vPvB Substances: None - PBT Substances: None

Other Hazards:

No other hazards

## 3. COMPOSITION AND INFORMATION ON INGREDIENTS

### 3.1. Substances

Trade name:	Sodium Hypochlorite
Chemical formula:	NaOCl
CAS number:	7681-52-9
EC number:	231-668-3
Hazardous components within the meaning of the CLP regulation and related classification:	
QTY:	>= 90%
Classification:	2.16/1 Met. Corr. 1 H290 3.2/1B Skin Corr. 1B H314 3.3/1 Eye Dam. 1 H318 4.1/C1 Aquatic Chronic 1- H410 4.1/A1 Aquatic Acute 1 H400 - M=10. EUH031

### 3.2. Mixtures

N.A.

## 4. FIRST AID MEASURES

### 4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

OBTAIN IMMEDIATE MEDICAL ATTENTION.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

Gastrointestinal disorders

Gastric perforation

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

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Treatment:

Treat symptomatically.

### 5. FIRE FIGHTING MEASURES

#### 5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO<sub>2</sub>).

Extinguishing media which must not be used for safety reasons:

None in particular.

#### 5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

#### 5.3. Advice for firefighters

Use suitable breathing apparatus.

Move undamaged containers from immediate hazard area if it can be done safely.

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

### 6. ACCIDENTAL RELEASE MEASURES

#### 6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

#### 6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

#### 6.3. Methods and material for containment and cleaning up

After the product has been recovered, rinse the area and materials involved with water.

Wash with plenty of water.

#### 6.4. Reference to other sections

See also section 8 and 13

### 7. HANDLING AND STORAGE

#### 7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

#### 7.2. Conditions for safe storage, including any incompatibilities

Always keep in a well ventilated place.

Keep away from food, drink and feed.

Incompatible materials:

Keep away from acids.

Instructions as regards storage premises:

Cool and adequately ventilated.

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### 7.3. Specific end use(s)

None in particular

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

SODIUM HYPOCHLORITE, SOLUTION - CAS: 7681-52-9

EU - STEL: 0.5 mg/m<sup>3</sup>, 1.5 ppm - Notes: Ref. to Cl<sub>2</sub>

#### DNEL Exposure Limit Values

SODIUM HYPOCHLORITE, SOLUTION - CAS: 7681-52-9

Worker Industry: 1.55 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, local effectsWorker Industry: 1.55 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, systemic effectsWorker Industry: 3.1 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Short Term, local effectsWorker Industry: 3.1 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Short Term, systemic effectsConsumer: 1.55 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, local effects

Consumer: 0.26 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

Consumer: 1.55 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, systemic effectsConsumer: 3.1 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Short Term, local effectsConsumer: 3.1 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Short Term, systemic effects

#### PNEC Exposure Limit Values

Sodium Hypochlorite, SOLUTION - CAS: 7681-52-9

Target: Fresh Water - Value: 0.00021 mg/l

Target: Marine water - Value: 0.000042 mg/l

Target: STP - Value: 4.69 mg/l

### 8.2. Exposure controls

#### Individual protection measures

Personal protective equipment selections vary based on potential exposure conditions and working conditions.

The final choice of protective equipment will depend upon a risk assessment.

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Please see both sections 5 and 6 for information about personal protective equipment to be worn in an emergency (e.g.: fire or unintentional release of the substance).

#### Eye protection:

Eye glasses with side protection.

#### Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

#### Protection for hands:

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Glove suitability and breakthrough time will differ depending on the specific use conditions.

Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

Suitable material:

Butyl caoutchouc (butyl rubber).

NBR (nitrile rubber).

PVC (polyvinyl chloride).

UNI EN 420/UNI EN 374

Use protective gloves that provides comprehensive protection.

Thermal Hazards: None

Environmental exposure controls: None

Appropriate engineering controls: None

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1. Information on basic physical and chemical properties

Appearance and colour:	Liquid
Odour:	Characteristic
Odour threshold:	N.A.
pH:	>11
Relative density:	1.26 g/cm <sup>3</sup>
Solubility in water:	100%

### 10. STABILITY AND REACTIVITY

#### 10.1. Reactivity

Contact with acids liberates chlorine, toxic gas.

#### 10.2. Chemical stability

The stability of the solution decreases with the action of heat, light and in the presence of some traces of impurities.

#### 10.3. Possibility of hazardous reactions

Contact with acids liberates chlorine, toxic gas. Reacts with ammonia in solution and amines forming explosive compounds. It can react violently in contact with many metals, in particular: copper, nickel, iron.

#### 10.4. Conditions to avoid

Keep away from heat and direct sunlight.

#### 10.5. Incompatible materials

Acids (violent decomposition with release of chlorine), metals (decomposition with release of oxygen), combustible materials.  
None in particular.

#### 10.6. Hazardous decomposition products

Chlorine, hypochlorous acid, sodium chloride.

### 11. TOXICOLOGICAL INFORMATION

#### 11.1. Information on toxicological effects

##### a) acute toxicity

Not classified

Based on available data, the classification criteria are not met

Test: LD50 - Route: Oral - Species: Rat > 1100 mg/kg - Notes: Ref. to Cl

Test: LC50 - Route: Inhalation - Species: Rat > 10.5 mg/l - Notes: Ref. to Cl

Test: LD50 - Route: Skin - Species: Rabbit > 20000 mg/kg - Notes: Ref. to Cl

##### b) skin corrosion/irritation

The product is classified: Skin Corr. 1B H314

Test: Skin Corrosive - Route: Skin Positive

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**c) serious eye damage/irritation**

The product is classified: Eye Dam. 1 H318

Test: Eye Corrosive - Route: Skin Positive

**d) respiratory or skin sensitisation**

Not classified

Based on available data, the classification criteria are not met

**e) germ cell mutagenicity**

Not classified

Based on available data, the classification criteria are not met

**f) carcinogenicity**

Not classified

Based on available data, the classification criteria are not met

**g) reproductive toxicity**

Not classified

Based on available data, the classification criteria are not met

**h) STOT-single exposure Not classified**

Based on available data, the classification criteria are not met

**i) STOT-repeated exposure**

Not classified

Based on available data, the classification criteria are not met

**j) aspiration hazard Not classified**

Based on available data, the classification criteria are not met

## 12. ECOLOGICAL INFORMATION

### 12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

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The product is classified: Aquatic Chronic 1 - H410; Aquatic Acute 1 - H400

**a) Aquatic acute toxicity:**

Endpoint: LC50 - Species: Fish = 0.06 mg/l - Duration h: 96

Endpoint: LC50 - Species: Fish = 0.032 mg/l - Duration h: 96

Endpoint: EC50 - Species: Daphnia = 0.141 mg/l - Duration h: 48

Endpoint: EC50 - Species: Crustaceans = 0.026 mg/l - Duration h: 48

### 12.2. Persistence and degradability

N.A.

### 12.3. Bioaccumulative potential

N.A.

### 12.4. Mobility in soil

## 13. DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

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## 14. TRANSPORT INFORMATION



### 14.1. UN number

ADR-UN Number: 1791  
IATA-UN Number: 1791  
IMDG-UN Number: 1791

### 14.2. UN proper shipping name

ADR-Shipping Name: HYPOCHLORITE SOLUTION  
IATA-Shipping Name: HYPOCHLORITE SOLUTION  
IMDG-Shipping Name: HYPOCHLORITE SOLUTION

### 14.3. Transport hazard class(es)

ADR-Class: 8  
ADR - Hazard identification number: 80  
IATA-Class: 8  
IATA-Label: 8  
IMDG-Class: 8

### 14.4. Packing group

ADR-Packing Group: II  
IATA-Packing group: II  
IMDG-Packing group: II

### 14.5. Environmental hazards

ADR-Environmental Pollutant: Yes  
IMDG-Marine pollutant: Marine Pollutant

### 14.6. Special precautions for user

ADR-Subsidiary hazards: -  
ADR-S.P.: 521  
ADR-Transport category (Tunnel restriction code): (E)  
  
IATA-Passenger Aircraft: 851  
IATA-Subsidiary hazards: -  
IATA-Cargo Aircraft: 855  
IATA-S.P.: A3 A803  
IATA-ERG: 8L  
IMDG-EmS: F-A , S-B  
IMDG-Subsidiary hazards: -  
IMDG-Stowage and handling: Category B  
IMDG-Segregation: "Away from" acids.

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### 15. REGULATORY INFORMATION

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

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Regulation (EC) n. 1907/2006 (REACH)

Regulation (EC) n. 1272/2008 (CLP)

Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013

Regulation (EU) 2015/830

Regulation (EU) n. 286/2011 (ATP 2 CLP)

Regulation (EU) n. 618/2012 (ATP 3 CLP)

Regulation (EU) n. 487/2013 (ATP 4 CLP)

Regulation (EU) n. 944/2013 (ATP 5 CLP)

Regulation (EU) n. 605/2014 (ATP 6 CLP)

Regulation (EU) n. 2015/1221 (ATP 7 CLP)

Regulation (EU) n. 2016/918 (ATP 8 CLP)

Regulation (EU) n. 2016/1179 (ATP 9 CLP)

Regulation (EU) n. 2017/776 (ATP 10 CLP)

Regulation (EU) n. 2018/699 (ATP 11 CLP)

Regulation (EU) n. 2018/1480 (ATP 13 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation

(EC) 1907/2006 (REACH) and subsequent modifications:Restrictions related to the product: Restriction 3

Restrictions related to the substances contained: No restriction.

Where applicable, refer to the following regulatory provisions :

Directive 2012/18/EU (Seveso III)

Regulation (EC) nr 648/2004 (detergents).

1999/13/EC (VOC directive)

Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1

Product belongs to category: E1

#### 15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for the substance.

### 16. OTHER INFORMATION

Information contained herein is provided in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.