

## 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

**Product Identifier:**

**Trade Name:** Sodium Hypochlorite  
**Substance Name:** Hypo. Bleach, concentrated. Sodium hypochlorite liquor, concentrated.  
**Index Number:** 017-011-00-1  
**CAS Number:** 7681-52-9  
**EINECS Number:** 231-668-3  
**REACH Registration Number:** 01-2119488154-34-XXXX

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

**Identified use(s):** Bleaching agent, oxidising agents, intermediate, Industrial and professional cleaning.  
**Uses advised against:** None identified.

**Company name:** Nexchem Ltd  
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## 2. HAZARDS IDENTIFICATION

**Classification of the substance or mixture:** Aquatic Acute 1: Very toxic to aquatic life.  
Aquatic Chronic 2: Toxic to aquatic life with long lasting effects.  
Eye Dam. 1: Causes serious eye damage.  
Met. Corr. 1: May be corrosive to metals.  
Skin Corr. 1B: Causes severe skin burns and eye damage.

For the full text of the H-Statements mentioned in this Section, see Section 16.

**Label elements:**

**According to Regulation (EC) No. 1272/2008 (CLP):**

**Hazard Pictogram:**



**Signal word(s):** Danger.

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<b>Hazard statement(s):</b>	H290: May be corrosive to metals. H314: Causes severe skin burns and eye damage. H400: Very toxic to aquatic life. H411: Toxic to aquatic life with long lasting effects.
<b>Precautionary statement(s):</b>	P260: Do not breathe vapour. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353: IF ON SKIN (or hair): 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. Continue rinsing.
<b>Additional Labelling:</b>	EUH031: Contact with acids liberates toxic gas.
<b>Other hazards:</b>	None known.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Substances:**

**Chemical nature:** Sodium hypochlorite.  
Aqueous solution.

Chemical Name	Identification Number	Amount (%)
Sodium hypochlorite, solution	Index No.	017-011-00-1
	CAS No.	7681-52-9
	EC No.	231-668-3
	REACH Reg. No.	01-2119488154-34-XXXX

**Classification:** Met. Corr. 1 H290  
Skin Corr. 1B H314  
Aquatic Acute 1 H400  
Aquatic Chronic 2 H411 EUH031

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 4. FIRST AID MEASURES

**Description of first aid measures:**

**Inhalation:** Remove patient from exposure, keep warm and at rest. Administer oxygen if necessary. Obtain medical attention.

**Skin contact:** Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If symptoms develop, obtain medical attention.

**Eye contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor.

**Ingestion:** Do NOT induce vomiting. Provided the patient is conscious, wash out mouth with water and give 200-300 ml (half a pint) of water to drink. Immediately call a POISON CENTRE/doctor.

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**Most important symptoms and effects, both acute and delayed:**

- Inhalation:** May cause breathing difficulty. Cough. Gas (chlorine) produced under fire or acidic conditions is toxic by inhalation.
- Skin Contact:** Causes burns.
- Eye Contact:** Risk of serious damage to eyes.
- Ingestion:** Will cause corrosion of and damage to the upper gastrointestinal tract.

**Indication of any immediate medical attention and special treatment needed:**

In cases of severe exposure, pulmonary oedema may develop. Fluid build-up on the lung (pulmonary oedema) may occur up to 48 hours after exposure and could prove fatal. Immediately call a POISON CENTER/doctor. Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

**Extinguishing Media:**

**Suitable extinguishing media:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media:** High volume water jet.

**Special hazards arising from the substance or mixture:** Non-combustible. May decompose in a fire, giving off toxic and irritant vapours. (chlorine). Chlorine is an oxidising agent.

**Advice for fire-fighters:** Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Use water spray or fog to knock down and absorb corrosive fumes. Keep fire exposed containers cool by spraying with water. Dike fire control water for later disposal.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures:** Provide adequate ventilation. Do not use metal containers for spilled liquid. Wear appropriate personal protective equipment, avoid direct contact.

**Environmental precautions:** Avoid release to the environment. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

**Methods and material for containment and cleaning up:** Collect spillage.

**Small spillages:** Wash the spillage area with water.

**Large spillages:** Contain spillages with sand, earth or any suitable adsorbent material. Earth may be shovelled to contain spillage and to avoid contamination of sewers and watercourses.

**Reference to other sections:** See also Section 8, 13.

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**7. HANDLING AND STORAGE**

**Precautions for safe handling:** Avoid contact with skin and eyes.  
Avoid inhalation of mists.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Ensure adequate ventilation.

**Conditions for safe storage, including any incompatibilities:**

**For small quantities:** Vented containers made from glass or PVC are suitable.  
**For large quantities:** Glass reinforced plastic tanks with a PVC lining, rubber lined mild steel or high-density polyethylene tanks are suitable. Storage tanks should be completely enclosed except for vents and overflows. Provision should be made to wash tanks clear of sludge, which can build up due to salting out of solids during natural decomposition.  
**Storage temperature:** Ambient. Keep away from heat and direct sunlight.  
**Storage life:** Stable under normal conditions.  
**Incompatible materials:** Do not mix with acid. Avoid contact with other cleaning agents.

**Specific end use(s):** No further relevant information.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Control parameters:**

**Sodium Hypochlorite:** Not Listed (UK HSE EH40).

In case of chlorine emission, the occupational exposure limit for chlorine should be observed.

**Chlorine:** CAS No. 7782-50-0 STEL 0.5 ppm 1.5 mg/m<sup>3</sup>

Region	Source
Europe	EU Occupational Exposure Limits
United Kingdom	
Workplace Exposure Limits (WEL)	

**Sodium Hypochlorite solution:**

**Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL):**

DNEL/DMEL	Oral	Inhalation	Dermal
Industry - Long Term - Local effects		1.55 mg/m <sup>3</sup>	0.5%
Industry - Long Term - Systemic effects		1.55 mg/m <sup>3</sup>	
Industry - Short term - Local effects		3.1 mg/m <sup>3</sup>	
Industry - Short term - Systemic effects		3.1 mg/m <sup>3</sup>	
Consumer - Long Term - Local effects		1.55 mg/m <sup>3</sup>	
Consumer - Long Term - Systemic effects		1.55 mg/m <sup>3</sup>	
Consumer - Short term - Local effects	0.26 mg/kg bw/day	3.1 mg/m <sup>3</sup>	
Consumer - Short term - Systemic effects		3.1 mg/m <sup>3</sup>	

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**Predicted No Effect Concentration (PNEC)**

Environment	PNEC
Aquatic Compartment (including sediment)	0.21 µg/l Fresh water, 0.042 µg/l Marine water, 0.26 µg/l Intermittent releases, 30 µg/l Sewage treatment plant
Terrestrial Compartment	No data
Atmospheric Compartment	No data

**Exposure controls:**

**Appropriate engineering controls:** Provide adequate ventilation, including appropriate local extraction. A washing facility/water for eye and skin cleaning purposes should be present.

**Respiratory protection:** Normally no personal respiratory protection is necessary. When required to spray sodium hypochlorite solutions or to work in mists adequate respiratory protection should be provided. Where a cartridge/canister respirator is suitable use: Type B P3

**Eye protection:** Wear eye protection with side protection (EN166). Goggles giving complete protection to eyes. If splashes are likely to occur: Full face shield.

**Skin and body protection:** Wear protective clothing and gloves: The following materials are suitable for protective gloves (permeation time  $\geq$  8 hours): PVC (0.5mm), Neoprene (0.5mm), Butyl rubber (0.5mm), Nitrile rubber (0.35mm), Natural rubber (0.5mm).

**Thermal hazards:** None known.

**Environmental Exposure Controls:** Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties:**

<b>Appearance:</b>	Liquid.
<b>Colour:</b>	Greenish yellow
<b>Odour:</b>	Faintly chlorinous
<b>Odour threshold:</b>	Not known.
<b>pH:</b>	>12.5
<b>Melting point/freezing point:</b>	-17 °C Initial boiling point and boiling range 110 °C
<b>Flash Point:</b>	Not applicable.
<b>Evaporation rate:</b>	Not available.
<b>Flammability (solid, gas):</b>	Not flammable
<b>Upper/lower flammability or explosive limits:</b>	Not applicable.
<b>Vapour pressure:</b>	2.5 kPa (20°C)
<b>Vapour density:</b>	2.5
<b>Density (g/ml):</b>	Not available.
<b>Relative density:</b>	1.26 approx (20°C)
<b>Solubility(ies):</b>	Solubility (Water) : Miscible
<b>Solubility (Other):</b>	Not available.
<b>Partition coefficient: n-octanol/water:</b>	Log Pow: -3.42 (20°C)

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**Auto-ignition temperature:** Not applicable.  
**Decomposition Temperature (°C):** Not available.  
**Viscosity:** 2.6mPa.s (20°C)  
**Explosive properties:** Not explosive.  
**Oxidising properties:** May liberate chlorine under certain conditions: chlorine is an oxidising agent.

**Other information:**  
**Molecular weight:** 74.44 g/mol

## 10. STABILITY AND REACTIVITY

**Reactivity:** Contact with acids liberates very toxic gas. (chlorine). Chlorine is an oxidising agent.

**Chemical stability:** Stable under normal conditions. Stability of the solution decreases with the action of heat, light and in the presence of some trace impurities.

**Possibility of hazardous reactions:** Contact with acids liberates very toxic gas. (chlorine). Chlorine is an oxidising agent. Reacts with ammonia solutions and amines to form explosive compounds. Can react violently if in contact with methanol. Decomposition with evolution of oxygen is accelerated by light and heat and by contact with many metals, particularly copper, nickel, iron and 'monel'.

**Conditions to avoid:** Incompatible materials. Keep away from heat and direct sunlight.

**Incompatible materials:** Decomposition with evolution of oxygen is accelerated by light and heat and by contact with many metals, particularly copper, nickel, iron and 'monel'.

**Hazardous decomposition products:** Chlorine. Oxygen.

## 11. TOXICOLOGICAL INFORMATION

### Information on toxicological effects:

#### Acute toxicity:

**Ingestion:** Not classified.  
Data from sodium hypochlorite solution, at the highest industrially produced concentration of around 15%, shows low oral toxicity. LD50 value (rat, oral) used for Chemical Safety Assessment, 1100 mg/kg bw (as available chlorine) Will cause corrosion of and damage to the upper gastrointestinal tract.

**Skin contact:** Not classified. LD50 (rat) >20,000 mg/kg bw

**Inhalation:** Not classified. LC50 (rat) (1 hr) >10,500 mg/m<sup>3</sup> (as available chlorine)

**Skin corrosion/irritation:** Calculation method: Causes severe skin burns and eye damage.

**Serious eye damage/irritation:** Self classification: Causes serious eye damage.

[cont...]

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<b>Skin sensitisation data:</b>	Not classified. Human Patch testing suggests that sodium hypochlorite is unlikely to be a skin sensitiser. Reliable test data indicates that sodium hypochlorite has no potential for skin sensitisation in animals.
<b>Respiratory sensitisation data:</b>	Not classified. May be irritant to the respiratory tract.
<b>Germ cell mutagenicity:</b>	Not classified. On the basis of a weight of evidence approach, sodium hypochlorite should not be classified as genotoxic as the majority of the relevant in-vitro and in-vivo mutagenicity studies were negative.
<b>Carcinogenicity:</b>	Not classified. On the basis of a weight of evidence approach, sodium hypochlorite has been shown not to be carcinogenic in animal studies or in humans.
<b>Reproductive toxicity:</b>	Not classified. There is no evidence from animal studies that sodium hypochlorite has any adverse effects on development or fertility.
<b>Lactation:</b>	Not classified.
<b>STOT - single exposure:</b>	Not classified. May be irritant to the respiratory tract.
<b>Note:</b>	≥20% solution Classified as irritating to the respiratory system.( STOT SE 3)
<b>STOT - repeated exposure:</b>	Not classified. Studies in animals have shown that repeated exposures produce no significant effects.
<b>Aspiration hazard Self classification:</b>	Not an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

### Acute Toxicity:

#### Aquatic invertebrates:

**Acute aquatic toxicity:** Daphnia magna, Fresh water. EC50 (48 hour): 0.141 mg/l (Crassostrea virginica), Marine water. EC50 (48 hour): 0.026 mg/l Ceriodaphnia dubia, Fresh water. EC50 (48 hour): 0.035 mg/l.

**Chronic:** Oyster, Marine water. NOEC (7 day): 0.007 mg/l.

#### Fish:

**Acute aquatic toxicity:** Fish, Fresh water. LC50 (96 hour): 0.06 mg/l Fish, Marine water. LC50 (96 hour): 0.032 mg/l.

**Chronic:** Fish, Marine water. NOEC (28 days): 0.04 mg/l

#### Algae:

**Acute aquatic toxicity:** Algae (Pseudokirchnerella subcapitata) (Liedtke, 2013) EC50: 0.04 mg/l Myriophyllum spicatum, Fresh water. EC50 (96 hour): 0.1 mg/l.

[cont...]

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**Chronic:** Algae (*Pseudokirchnerella subcapitata*) (Liedtke, 2013)ErC10: 0.03 mg/l; NOEC: 0.017 mg/l  
Algae (periphyton), Fresh water. NOEC (7 days): 0.0021 mg/l

**Toxicity:**

**Sediment Compartment:** Not classified.

**Terrestrial Compartment:** Not classified.

**Persistence and degradability:** Sodium hypochlorite is a strong oxidiser. It will react with organic substances present in soil and sediments and degrades rapidly to chloride. Sodium hypochlorite is substantially removed in biological treatment processes.

**Bio accumulative potential:** Sodium hypochlorite has low potential for bioaccumulation and decomposes in water.  
log P (calculated) -3.42

**Mobility in soil:** Sodium hypochlorite is mobile in soil and sediments.

**Results of PBT and vPvB assessment:** Not classified as PBT or vPvB.

**Other adverse effects:** Sodium hypochlorite is substantially removed in biological treatment processes. There is evidence of inhibition to the aerobic treatment process at a concentration (mg/l) of 0.05 mg/l.

### 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods:** Dispose of contents in accordance with local, state or national legislation. Send to a licensed recycler, reclaimer or incinerator. Dispose of this material and its container to hazardous or special waste collection point.

**Additional information:** Disposal should be in accordance with local, state or national legislation.

### 14. TRANSPORT INFORMATION

**UN Number:**

**ADR:** 1791

**RID:** 1791

**IMDG:** 1791

**UN Proper Shipping Name:**

**ADR:** HYPOCHLORITE SOLUTION

**RID:** HYPOCHLORITE SOLUTION

**IMDG:** HYPOCHLORITE SOLUTION

[cont...]



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**Transport hazard class:**

**ADR/RID Class:** 8

**IMDG Class:** 8

**IMDG EMS:** Not available.

**ICAO/IATA:**

**Excepted Quantities:** E2

**Passenger and Cargo Aircraft Limited Quantities Packing Instructions:** Y840

**Passenger and Cargo Aircraft Limited Quantities Max net Qty:** 0.5L

**Passenger and Cargo Aircraft Packing Instructions:** 851

**Passenger and Cargo Aircraft Max net Qty:** 1L

**Cargo Aircraft Packing Instructions:** 855

**Cargo Aircraft Max net Qty:** 30L

**Special Provisions:** A3

**Emergency Response Guidebook (ERG) Code:** 8L

**ADR Classification Code:** C9

**ADR HIN:** 80

**ADR Transport Category:** 2

**Tunnel Restriction Code:** E

**Emergency Action Code:** 2X

**APP Advice on Additional Personal Protection (APP):** Not applicable.

**Packing group:**

**Packing group:** II

**Labels:** 8



**Special provision:** 521

**Limited quantities:** 1L

**Mixed Packing Instructions for Packages:** P001 IBC02

**Special Packing Provisions for Packages:** PP10 B5

**Mixed Packing Instructions for Packages:** MP15

**Environmental hazards:**

**Environmentally hazardous:** Classified as a Marine Pollutant

**Special precautions for users:** Not applicable

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**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:**

**Product Name:** SODIUM HYPOCHLORITE SOLUTION

**Ship Type:** 2

**Pollution Category:** Y

**Packing Instructions for Portable Tanks:** T7

**Special Provisions for Portable Tanks:** TP2

**TP24 Tank Code for Tanks:** L4BV(+)

**Special Provisions for Tanks:** TE11

**Vehicle for Tank Carriage:** AT

**Special Provisions for Carriage – Packages:** Not applicable

**Special Provisions for Carriage - Bulk Loading:** Not applicable

**Special Provisions for Carriage – Loading:** Not applicable

**Unloading and Handling:**

**Special Provisions for Carriage – Operation:** Not applicable

**15. REGULATORY INFORMATION**

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

**European Regulations:**

**Authorisations and/or Restrictions On Use:** Not listed.

**Candidate List of Substances of Very High Concern for Authorisation:**

**REACH: ANNEX XIV list of substances subject to authorisation:** Not listed.

**REACH: Annex XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles:** Not listed.

**Community Rolling Action Plan (CoRAP):** Not listed.

**Regulation (EC) N° 850/2004 of the European Parliament and of the Council on persistent organic pollutants:** Not listed.

**Regulation (EC) N° 2037/2000 on substances that deplete the ozone layer:** Not listed.

**Regulation (EU) N° 649/2012 of the European Parliament and of the Council concerning the export and import of hazardous chemicals:** Not listed.

**Chemical safety assessment:** A Chemical Safety Assessment has been performed.

**Note:** The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

**16. OTHER INFORMATION**

**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.
- H410: Very toxic to aquatic life with long lasting effects.
- H411: Toxic to aquatic life with long lasting effects.

[cont...]

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**Abbreviations and acronyms:**

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

CAS: Chemical Abstracts Service.

CLP: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.

DNEL: Derived No Effect Level.

EC: European Community.

EINECS: European Inventory of Existing Commercial Chemical Substances.

IATA: International Air Transport Association.

IBC: Intermediate Bulk Container.

ICAO: International Civil Aviation Organization.

IMDG : International Maritime Dangerous Goods.

LTEL: Long term exposure limit.

PBT: Persistent, Bioaccumulative and Toxic.

PNEC: Predicted No Effect Concentration.

REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals.

RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.

STEL: Short term exposure limit.

STOT: Specific Target Organ Toxicity.

UN: United Nations.

vPvB: very Persistent and very Bioaccumulative.

**Legal disclaimer:**

The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.