

## Safety Data Sheet

Revision date: 12/1/2022

### 1. Identification

**Product identifier** 12.5 – 15.6% Solution  
**Other means of identification**  
**Synonyms** Bleach 12.5% - Sodium Hypochlorite Solution, Bleach Solution, Liquid Chlorine Solution, Hypo-solution and Liquid Bleach.

#### Manufacturer/Importer/Supplier/Distributor Information

**Company name** INEOS KOH  
**Address** 3509 Middle Road  
Ashtabula, OH 44004  
**Telephone** 1-440-997-5221

**Emergency phone number** 1-800-424-9300 (24 hours)  
CHEMTREC

### 2. Hazard(s) identification

#### Label elements



**Signal word** DANGER  
**Hazard statement** Causes severe skin burns and eye damage.  
Very toxic to aquatic life.  
**Precautionary statement**  
**Prevention** Do not breathe mist, vapors, or spray.  
Wash hands thoroughly after handling.  
Avoid release to the environment.  
**Response** Wear protective gloves/protective clothing/eye protection/face protection.  
If Swallowed: Rinse mouth. DO NOT induce vomiting.  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
Wash contaminated clothing before re-use.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
Immediately call a POISON CONTROL CENTER or doctor/physician.  
Specific treatment (see First Aid Measures on Safety Data Sheet).  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
Collect spillage.  
**Storage** Store locked up  
**Disposal** Dispose of contents/containers in accordance with local/regional/national/international regulations.

#### Hazard(s) not otherwise classified (HNOC)

**Supplemental Information** Reacts violently with acids liberating chlorine gas. Also reacts with organic substance. When heated, gives off oxygen that may increase fire hazard

#### NFPA classification (scale 0-4):

**Health** 2  
**Fire** 0  
**Reactivity** 1

**EC classification (assigned):** C (Corrosive)

#### Emergency overview

**Major health hazards:** Respiratory Tract Burns, Skin Burns, Mucous Membrane Burns, and Eye Irritation  
**Potential health effects**

<b>Short term exposure</b>	Irritation to respiratory tract. May have same as effects reported in other routes of exposure, burns, blisters, nausea, difficulty breathing, and lung congestion.
<b>Long term exposure</b>	Same as effects reported in short term exposure.
<b>Skin contact:</b>	
<b>Short term exposure</b>	Irritant, reddening of the skin. May have burns, blisters, and itching
<b>Long term exposure</b>	Same as effects reported in short term exposure.
<b>Eye contact:</b>	
<b>Short term exposure</b>	Irritation (possible severe), possible eye damage
<b>Long term exposure</b>	Same as effects reported in short term exposure.
<b>Ingestion:</b>	
<b>Short term exposure</b>	Burns, vomiting stomach pain, disorientation, bluish skin color, convulsions, and coma
<b>Long term exposure</b>	Same as effects reported in short term exposure.
<b>Carcinogen status</b>	
<b>OSHA:</b>	No
<b>NTP:</b>	No
<b>IARC:</b>	No

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	CAS number	%
Sodium Hypochlorite (NaOCl)	7681-52-9	12.5 – 15.6
Sodium Hydroxide (NaOH)	1310-73-2	0.2 – 1.5
Water (H <sub>2</sub> O)	7732-18-5	Balance

### 4. First-aid measures

#### Inhalation

Remove from exposure and get fresh air. Use bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Keep warm and at rest. Get medical attention immediately if artificial respiration required

#### Skin contact

Remove contaminated clothing, jewelry, and shoes immediately. Flush affected area with large amounts of water, preferable a safety shower. Use soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). For burns, cover affected area securely with sterile, dry, loose fitting dressing. If skin is burned, get medical attention immediately.

#### Eye contact

Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains (at least 15 minutes). Continue irrigating with a normal saline solution until ready to transport to physician. Cover with sterile bandages. Get medical attention immediately

#### Ingestion

Rinse mouth with water. Drink large quantities of milk (water if no milk is available). Milk of magnesia may be helpful. **DO NOT USE ACIDIC ANTIDOTES SUCH AS SODIUM BICARBONATE.** When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, do not induce vomiting and turn their head to the side. Never make an unconscious person vomit or drink fluids. Get medical attention.

#### General information

**NOTE TO PHYSICIAN:** For inhalation, consider oxygen. For ingestion, avoid gastric lavage, emesis, sodium bicarbonate and acidic solutions. Consider the use of antacids.

### 5. Fire-fighting measures

#### Suitable extinguishing media

Regular dry chemical, carbon dioxide, water, or foam suitable for surrounding fire. For large fires, use regular foam or flood with fine water spray.

#### Specific hazards arising from the chemical

Negligible fire hazard. Oxidizer, this material will react with some metals and cause liberation of oxygen. May ignite or explode on contact with combustible materials. Toxic fumes can be liberated by contact with acid or heat.

#### Fire-fighting equipment/instructions

Wear self-contained breathing apparatus and full protective clothing. Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Use extinguishing agents appropriate for surrounding fire. Do not get water directly on material. For large fires, flood with fine water spray. Reduce vapors with water spray. Apply water from a protected location or from a same distance. Avoid body contact or inhalation of material or combustion by –products. Stay upwind and keep out of low areas.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Do not touch spilled material. Stop leak if possible without personal risk, keep unnecessary people away, isolate hazard area and deny entry.
<b>Methods and materials for containment and cleaning up</b>	For small spills, collect spilled material in appropriate container for disposal and consider absorbing with sand or other non-combustible material (e.g., do not use sawdust or other combustible material). Be advised, however, that the use of absorbing material is creating hazardous waste and this absorbing material must now be disposed of properly. Collect spilled material in appropriate container for disposal. For small dry spills, move containers away from spill to a safe area. For large spills, dike for later disposal. Contain in as small an area as possible, such as a holding area for dilution and neutralization. Contain spill in plastic drums when available. Dispose of in accordance with Federal, State, and local regulations. Personnel engaged in cleanup operations must be equipped with NIOSH approved respirator protection, rubber boots, gloves, and clothing to avoid body contact. Reportable Quantity (RQ): 100 pounds. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 394). If release occurs in the U.S. and reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).
<b>Environmental precautions</b>	If possible, do not allow material to enter sewers, streams, ponds or storm conduits, as concentrated solutions will seriously injure aquatic life.
<b>Advance planning</b>	Plan in advance for an occupational release and have necessary equipment and neutralization agents on-site. Contact Odyssey Manufacturing for assistance.
<b>Dot emergency guide number</b>	154

## 7. Handling and storage

<b>Precautions for safe handling</b>	Store in vented, closed containers that provide protection from direct sunlight. Store and handle in accordance with all current regulations and standards including NFPA 430 Code for the Storage of Liquid and Oxidizing materials. Do not mix old bleach with new bleach.
<b>Condition for safe storage, including any incompatibilities</b>	Keep separated from incompatible substances and do not store near acids, heat, or oxidizable materials or organics. When handling, do not mix with other cleaning agents that may liberate chlorine gas vapors (e.g., acidic agents). Contact with metals will accelerate decomposition and generate oxygen potentially generating pressure in closed vessels.

## 8. Exposure controls/personal protection

<b>Occupational exposure limits</b>	2 mg/m <sup>3</sup> AIHA recommended STEL 15 minutes for Sodium Hypochlorite
<b>Appropriate engineering controls</b>	Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Splash goggles are preferred to a face shield. Another option is to wear splash resistant safety goggles with a face shield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves.
<b>Other</b>	It is recommended to wear appropriate chemical resistant clothing to avoid body contact such as a rubber apron or rain suit. Boots are preferred footwear.
<b>Respiratory protection</b>	Any self-contained breathing apparatus with a full face piece (use for High Concentrations or those which are Immediately Dangerous to life or Health). Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. <ul style="list-style-type: none"><li>• Any chemical cartridge respirator with organic vapor cartridge(s).</li><li>• Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).</li><li>• Any air-purifying respirator with a full facepiece and an organic vapor canister.</li><li>• Any supplied-air respirator with a full facepiece and operated in a pressure-demand or other positive pressure mode in combination with a separate escape supply (use for Unknown Concentrations of those that may be Immediately Dangerous to Life or Health)</li></ul>

## 9. Physical and chemical properties

### Appearance

Physical state	Liquid
Form	Liquid
Color	Pale yellow

**Odor** Chlorine odor like household bleach

**Odor threshold** 0.9 mg/m<sup>3</sup>

**pH** 11.5 – 13 (68°F)

**Melting point/freezing point** - 10°F

**Initial boiling point and boiling range** Not available

**Flash point** Not applicable

**Evaporation rate** No data available

**Flammability (solid, gas)** Not available

**Upper/lower flammability or explosive limits**

**Flammability limit – lower (%)** Not available

**Flammability limit – lower (%) temperature** Not available

**Flammability limit – upper (%)** Not available

**Flammability limit – upper (%) temperature** Not available

**Explosive limit – lower (%)** Not available

**Explosive limit – upper (%)** Not available

**Vapor pressure** Vapor Pressure of water + decomposition product vapor pressure

**Vapor density** Not Available

**Relative density** 1.19 – 1.28 (60°F)

**Solubility(ies)**

**Solubility (water)** Completely miscible

**Partition coefficient (n-octanol/water)** Not available

**Auto-ignition temperature** Not applicable

**Decomposition temperature** Not available (The degradation rate doubles for every 10°F above 70°F)

**Viscosity** Not Available

### Other information

**Molecular weight** 74.44

**Chemical family** Alkali

## 10. Stability and reactivity

### Reactivity

Stable at normal temperature and pressure. Will slowly decompose over time. Rate of decomposition is dependent upon initial strength, temperature, metal contaminants and sunlight exposure.

### Conditions to avoid

Avoid heat, flames, sparks and other sources of ignition. Dangerous gases may accumulate in confined spaces. May ignite or explode on contact with combustible materials. Contamination with metals will decompose to form sodium chloride and oxygen gas.

### Incompatible materials

Acids, metals, amines, combustible materials, reducing agents. Specific reactions with sodium Hypochlorite include the following: ACIDS: Violent reaction, ALUMINUM: Corrosive action, AMINES: Form explosive chloramines, AMMONIA: Form explosive chloramines, AMMONIUM SALTS: May form explosive product, BENZYL CYANIDE (ACIDIFIED): explosive reaction, ETHYLENEAMINE: Forms explosive 1-chloroethyleneamine, FORMIC ACID: Explosive mixture, METHANOL: May form explosive compound, NITROGEN COMPOUNDS: Forms explosive N-chloro compounds, ORGANIC AND COMBUSTIBLE MATERIALS: Fire and explosion hazard, OXALIC ACID: Intense reaction, REDUCING AGENTS: Fire and explosion hazard, ZINC: Corrosive

### Hazardous decomposition products

Thermal decomposition products-Chlorine and Hydrochloric Acid Vapors.  
Decomposition products - Hypochlorous Acid Vapors

### Polymerization

Will not polymerize

## 11. Toxicological information

### Information on likely routes of exposure

#### Ingestion

##### Acute

May cause irritation and erosion of the mucous membranes, vomiting (possibly bloody) and abdominal pain and spasms. A drop in blood pressure, shallow respiration, edema (possibly severe) of pharynx, larynx, and glottis, confusion, convulsions, delirium and coma may occur. Cyanosis and circulatory collapse are possible. Esophageal or gastric perforation and strictures are rare. Death may occur, usually due to complications of severe local injury such as toxemia, shock, perforations, hemorrhage, infection and obstruction. Massive ingestions may produce fatal hyperchloremic metabolic acidosis or aspiration pneumonitis.

##### Chronic

Sensitization reactions are reported in individuals who are exposed in small amounts through their water supply. High doses have caused sperm abnormality in mice

#### Inhalation

##### Acute

May cause severe bronchial irritation, sore throat with possible blistering, coughing, stomatitis, nausea labored breathing, shortness of breath and pulmonary edema. 10-20 mg/m<sup>3</sup> causes burning of the nose and throat; 40-60 mg/m<sup>3</sup> may be fatal. If sufficient amounts are absorbed, may cause effects as detailed in acute ingestion.

##### Chronic

No data available

#### Skin contact

##### Acute

Extent of damage depends on concentration, pH, volume of solution, and time of contact. May cause redness, pain, blistering, itchy eczema & chemical burns. Sensitization reactions possible in previously exposed persons.

##### Chronic

Allergic dermatitis has also been reported

#### Eye contact

##### Acute

May cause redness, pain, & blurred vision. Solutions of 5% splashed in human eyes have caused a burning sensation and later only slight superficial disturbance of the corneal epithelium, which cleared completely in the next day or two without special treatment. However, one animal study reports a 5% solution causing only moderate irritation with clearing within 7 days. A higher concentration of 15% tested on rabbit eyes caused immediate severe pain, hemorrhages, rapid onset of ground-glass appearance of the corneal epithelium, moderate bluish edema of the whole cornea, chemosis and discharge for several days. Such eyes have sometimes healed in 2-3 weeks with slight or no residual corneal damage but they had neovascularization of the conjunctiva and distortion of the nictitating membrane by scarring.

##### Chronic

Depending on concentration and time of exposure, symptoms may be as those of acute exposure.

### Information on toxicological effects

#### Acute Toxicity

##### Test

Oral-TDLo

##### Species

Woman

##### Test results

1gm/kg

Oral-LD50

Mouse

5800 mg/kg

Intravenous-TDLo

Man

45 mg/kg

Oral continuous-TDLo

Rat

140 mg/kg/9 weeks

#### Carcinogenicity

According to the IARC, animal inadequate evidence, human no adequate data, Group 3 (Hypochlorite salts)

#### Irritation data

10 mg eyes-rabbit moderate

#### Local effects

Corrosive: inhalation, skin contact, eye, ingestion hazards

#### Acute toxicity level

Slightly Toxic if ingested

#### Mutagenic data

Mutation in micro organisms-Salmonella typhimurium 1 mg/plate (-S9); DNA repair-Escherichiacoli 20 µg/disc; DNA damage-Esoherichiacoli 420 µmol/L: phage inhibition capacity-Esoherichiacoli 103 µg/well; micronucleus test-non-mammalian species multiple 200 ppb; cytogenetic analysis-non-mammalian species multiple 120 µg/L; cytogenetic analysis-hamster lung 100 mg/l

## 12. Ecological information

### Ecotoxicity

Fish toxicity

LC50 (Mortality)

Cutthroat trout (*Oncorhynchus clarki*)

94.0 µg/L 96 hour(s)

Invertebrate toxicity

LC50 (Species Diversity) protozoan phylum (Protozoa)

31.6 µg/L 7 hour(s)

Daphnia magna

LC50

Daphnia magna

0.37 – 2.3 ppm (48 hour)

Algal toxicity

LC50 (Mortality)

Algae, phytoplankton, algal mat (Algae)

90 µg/L 96 hour(s)

Phytotoxicity

(Biomass)

Curled pondweed (*Potamogeton crispus*)

230µg/L 35 hour(s)

Other toxicity

(Chlorophyll)

Aquatic community (Aquatic community)

2.1 µg/L 28 day(s)

### 13. Disposal considerations

**Disposal instructions** Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262.  
**Hazardous waste code** Hazardous Waste Number(s): D001.

### 14. Transport information

#### DOT

**UN number** UN1791  
**UN proper shipping name** Sodium Hypochlorite  
**Transport hazard class(es)**  
**Class** 8  
**Subsidiary risk**  
**Packing group** III (less than 16% available chlorine)/ II (16% or more available chlorine)  
**Marine pollutant** Yes  
**Packaging exceptions** 49 CFR 173.154  
**Packaging non bulk** 49 CFR 173.203 (less than 16% available chlorine)/ 49 CFR 173.202 (16% or more available chlorine)  
**Packaging bulk** 49 CFR 173.241 (less than 16% available chlorine)/ 49 CFR 173.242 (16% or more available chlorine)

#### U.S. DOT 49 CFR 172.101 and subpart E

**Labeling requirements** Corrosive

#### U.S. DOT 49 CFR 172.101 quantity limitations

**Passenger aircraft or railcar** 5 LITERS (less than 16% available chlorine) / 1 LITERS (16% or more available chlorine)  
**Cargo aircraft only:** 60 liters (less than 16% available chlorine) / 30 liters (16% or more available chlorine)

### 15. Regulatory information

#### U.S. regulations

**TSCA inventory status** Yes  
**TSCA 12(b) export notification** Not listed.  
**CERCLA section 103 (40CFR302.4)** Yes

**Sodium hypochlorite** 100 lbs RQ

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**SARA section 302 (40CFR355.30)** No  
**SARA section 304 (40CFR355.40)** No  
**SARA section 313 (40CFR372.65)** No

#### SARA hazard categories, SARA sections 311/312 (40CFR370.21):

**Acute** Yes  
**Chronic** No  
**Fire** No  
**Reactive** No  
**Sudden release** No

**OSHA process safety (29CFR1910.19)** No

#### State regulations

**California Proposition 65** No

#### European regulations

**EC Number (BINECS)** 231-668-3

#### EC risk and safety phrases:

**R 31** Contact with acids liberates toxic gas.  
**R 34** Causes burns  
**S ½** Keep locked-up and out of reach of children.  
**S 28b** After contact with skin, wash immediately with plenty of soap and water.  
**S 45** In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

S 50

Do not mix with incompatible materials.

**Concentration limits:**

C>10%

C

R 31-34

5%<=C<=10%

Xi

R 31-36/38

**German regulations**

**Water hazard class (WGK)** 2 (Official German Classification)

**FIFRA information**

**INEOS KOH product is not registered as a pesticide with the EPA under FIFRA regulations.** This chemical is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**Warning**

May be fatal if swallowed or if absorbed through skin.

Harmful if inhaled.

Causes skin irritation.

Causes substantial but temporary eye injury.

This pesticide is extremely toxic to fish

**16. Other information**

For additional information, contact our Quality Assurance / Technical Service Department.

Information contained in this MSDS refers only to the specific material designated and does not relate to any process or use involving other materials. This information is based on data believed to be reliable, and the Product is intended to be used in a manner that is customary and reasonably foreseeable. Since actual use and handling are beyond our control, no warranty, expressed or implied, is made and no liability is assumed by INEOS KOH in connection with the use of this information.