



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
US OSHA Hazard Communication Standard (29 CFR 1910.1200)

Revision date 02-Oct-2025

Revision Number 1

## 1. Identification

### Product identifier

**Product Name** Sodium Hydroxide 50% Membrane

### Other means of identification

**Product Code(s)** 5059

**UN number or ID number** UN1824

**Synonyms** Caustic soda solution; Soda lye solution

### Recommended use of the chemical and restrictions on use

**Recommended use** Industrial use  
Laboratory use  
Industrial Manufacturing (all)

**Restrictions on use** No information available

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

#### Supplier Address

Columbus Chemical Industries, Inc.  
N4335 Temkin Rd.  
Columbus, WI 53925 USA  
Phone: (920) 623-2140  
Fax: (920) 623-2577  
www.columbuschemical.com

### Emergency telephone number

**24 Hour Emergency Phone Number** CHEMTREC: 1-800-424-9300 for US / 703-527-3887 outside US

**Emergency Telephone** 911

## 2. Hazard(s) identification

### Classification

|                                                  |                           |
|--------------------------------------------------|---------------------------|
| Acute toxicity - Oral                            | Category 3                |
| Skin corrosion/irritation                        | Category 1 Sub-category A |
| Serious eye damage/eye irritation                | Category 1                |
| Specific target organ toxicity (single exposure) | Category 3                |
| Corrosive to metals                              | Category 1                |

### Hazards not otherwise classified (HNOC)

Not applicable

**Label elements****Danger****Hazard statements**

H301 - Toxic if swallowed

H314 - Causes severe skin burns and eye damage

H335 - May cause respiratory irritation

H290 - May be corrosive to metals.

**Precautionary Statements - Prevention**

P264 - Wash face, hands and any exposed skin thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P260 - Do not breathe dusts or mists

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P271 - Use only outdoors or in a well-ventilated area

P234 - Keep only in original packaging

**Precautionary Statements - Response**

P310 - Immediately call a POISON CENTER or doctor/physician

P321 - Specific treatment (see First-Aid Measures on SDS)

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 doctor/physician

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

P363 - Wash contaminated clothing before reuse

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P310 - Immediately call a POISON CENTER or doctor/physician

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

P330 - Rinse mouth

P331 - Do NOT induce vomiting

P390 - Absorb spillage to prevent material damage

**Precautionary Statements - Storage**

P405 - Store locked up

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

P406 - Store in corrosion resistant container with a resistant inner liner

**Precautionary Statements - Disposal**

P501 - Dispose of contents/ container to an approved waste disposal plant

**Other information**

May be harmful in contact with skin. Harmful to aquatic life with long lasting effects.

**3. Composition/information on ingredients****Mixture****Synonyms**

Caustic soda solution; Soda lye solution.

| Chemical name    | CAS No    | Weight-% | Formula | Molecular Weight |
|------------------|-----------|----------|---------|------------------|
| Sodium Hydroxide | 1310-73-2 | 47-53    | NaOH    | 40.00 g/mol      |

|       |           |         |     |             |
|-------|-----------|---------|-----|-------------|
| Water | 7732-18-5 | Balance | H2O | 18.02 g/mol |
|-------|-----------|---------|-----|-------------|

## 4. First-aid measures

### Description of first aid measures

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General advice</b>                     | Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Inhalation</b>                         | Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical attention. |
| <b>Eye contact</b>                        | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical attention.                                                                                                                                                                                                               |
| <b>Skin contact</b>                       | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention.                                                                                                                                                                                                                                                                                                                                  |
| <b>Ingestion</b>                          | Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical attention.                                                                                                                                                                                                                                                                                                                                            |
| <b>Self-protection of the first aider</b> | Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.                                                                                                                                        |

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

|                 |                    |
|-----------------|--------------------|
| <b>Symptoms</b> | Burning sensation. |
|-----------------|--------------------|

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

|                           |                                                                                                                                                                                                                                                                                                                                        |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Note to physicians</b> | Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 5. Fire-fighting measures

|                                                   |                                                                                                                                        |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media</b>               | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.                                |
| <b>Large Fire</b>                                 | CAUTION: Use of water spray when fighting fire may be inefficient.                                                                     |
| <b>Unsuitable extinguishing media</b>             | Do not scatter spilled material with high pressure water streams.                                                                      |
| <b>Specific hazards arising from the chemical</b> | The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. |
| <b>Hazardous combustion products</b>              | Sodium oxides. Contact with metals may evolve flammable hydrogen gas.                                                                  |
| <b>Explosion data</b>                             |                                                                                                                                        |
| <b>Sensitivity to mechanical impact</b>           | None.                                                                                                                                  |

**Sensitivity to static discharge** None.

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**Personal precautions** Attention! Corrosive material. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Other information** Refer to protective measures listed in Sections 7 and 8.

### Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so. Keep out of drains, sewers, ditches and waterways.

**Methods for cleaning up** Soak up with inert absorbent material. Dilute with plenty of water. Neutralize with acid. Pick up and transfer to properly labeled containers.

## 7. Handling and storage

### Precautions for safe handling

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

## 8. Exposure controls/personal protection

### Control parameters

#### **Exposure Limits**

| Chemical name    | ACGIH TLV                    | OSHA PEL                                                           | NIOSH                                                      |
|------------------|------------------------------|--------------------------------------------------------------------|------------------------------------------------------------|
| Sodium Hydroxide | Ceiling: 2 mg/m <sup>3</sup> | TWA: 2 mg/m <sup>3</sup><br>(vacated) Ceiling: 2 mg/m <sup>3</sup> | IDLH: 10 mg/m <sup>3</sup><br>Ceiling: 2 mg/m <sup>3</sup> |

### Appropriate engineering controls

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems.

### Individual protection measures, such as personal protective equipment

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye/face protection</b>            | Tight sealing safety goggles. Face protection shield.                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Hand protection</b>                | Wear suitable gloves. Impervious gloves.                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Skin and body protection</b>       | Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Respiratory protection</b>         | No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.                                                                                                                                                                                                                                                                              |
| <b>General hygiene considerations</b> | Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product. |

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

|                       |                                  |
|-----------------------|----------------------------------|
| <b>Physical state</b> | Liquid                           |
| <b>Appearance</b>     | Clear to slightly cloudy Viscous |
| <b>Color</b>          | Colorless                        |
| <b>Odor</b>           | Odorless                         |
| <b>Odor threshold</b> | No information available         |

| <u>Property</u>                                | <u>Values</u>                                                                             | <u>Remarks • Method</u> |
|------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------|
| <b>pH</b>                                      | No data available                                                                         | None known              |
| <b>pH (as aqueous solution)</b>                | > 14                                                                                      | None known              |
| <b>Melting point / freezing point</b>          | No data available                                                                         | None known              |
| <b>Initial boiling point and boiling range</b> | No data available                                                                         | None known              |
| <b>Flash point</b>                             | No data available                                                                         | None known              |
| <b>Evaporation rate</b>                        | No data available                                                                         | None known              |
| <b>Flammability</b>                            | No data available                                                                         | None known              |
| <b>Flammability Limit in Air</b>               |                                                                                           | None known              |
| <b>Upper flammability or explosive limits</b>  | No data available                                                                         |                         |
| <b>Lower flammability or explosive limits</b>  | No data available                                                                         |                         |
| <b>Vapor pressure</b>                          | No data available                                                                         | None known              |
| <b>Relative vapor density</b>                  | No data available                                                                         | None known              |
| <b>Relative density</b>                        | 1.52 - 1.54                                                                               | None known              |
| <b>Water solubility</b>                        | Soluble in water                                                                          | None known              |
| <b>Solubility(ies)</b>                         | Soluble in Alcohol, Methanol. Slightly soluble Ethanol. Insoluble Acetone, Diethyl ether. | None known              |
| <b>Partition coefficient</b>                   | No data available                                                                         | None known              |
| <b>Autoignition temperature</b>                | No data available                                                                         | None known              |
| <b>Decomposition temperature</b>               |                                                                                           | None known              |
| <b>Kinematic viscosity</b>                     | No data available                                                                         | None known              |
| <b>Dynamic viscosity</b>                       | No data available                                                                         | None known              |

### Other information

|                             |                          |
|-----------------------------|--------------------------|
| <b>Explosive properties</b> | No information available |
| <b>Oxidizing properties</b> | No information available |
| <b>Softening point</b>      | No information available |
| <b>Molecular weight</b>     | 40.00 g/mol              |
| <b>VOC content</b>          | No information available |
| <b>Liquid Density</b>       | No information available |
| <b>Bulk density</b>         | No information available |

## 10. Stability and reactivity

|                                           |                                                                                                                |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Reactivity</b>                         | Contact with metals may evolve flammable hydrogen gas. Contact with water generates heat. Corrosive to metals. |
| <b>Chemical stability</b>                 | Stable under normal conditions.                                                                                |
| <b>Possibility of hazardous reactions</b> | Reacts vigorously, violently, or explosively with many organic and inorganic chemicals.                        |
| <b>Conditions to avoid</b>                | Exposure to air or moisture over prolonged periods. Excessive heat.                                            |
| <b>Incompatible materials</b>             | Metals. Acids. Chlorinated compounds. Flammable liquids.                                                       |
| <b>Hazardous decomposition products</b>   | Sodium oxides.                                                                                                 |

## 11. Toxicological information

### Information on likely routes of exposure

#### Product Information

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Inhalation</b>   | Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract. |
| <b>Eye contact</b>  | Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.                                                                                                                                                                                                                                                                                                  |
| <b>Skin contact</b> | Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May be harmful in contact with skin.                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Ingestion</b>    | Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.          |

### Symptoms related to the physical, chemical and toxicological characteristics

|                 |                                                                   |
|-----------------|-------------------------------------------------------------------|
| <b>Symptoms</b> | Redness. Burning. May cause blindness. Coughing and/ or wheezing. |
|-----------------|-------------------------------------------------------------------|

### Acute toxicity

#### Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

|                                      |                |
|--------------------------------------|----------------|
| <b>ATEmix (oral)</b>                 | 200.00 mg/kg   |
| <b>ATEmix (dermal)</b>               | 2,700.00 mg/kg |
| <b>ATEmix (inhalation-gas)</b>       | 99,999.00 ppm  |
| <b>ATEmix (inhalation-vapor)</b>     | 99,999.00 mg/l |
| <b>ATEmix (inhalation-dust/mist)</b> | 99,999.00 mg/l |

**Component Information**

| Chemical name    | Oral LD50               | Dermal LD50           | Inhalation LC50 |
|------------------|-------------------------|-----------------------|-----------------|
| Water            | >90 ml/kg (Rat)         | -                     | -               |
| Sodium Hydroxide | 140 - 340 mg/kg ( Rat ) | 1350 mg/kg ( Rabbit ) | -               |

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

|                                          |                                                                                                  |
|------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>Skin corrosion/irritation</b>         | Classification based on data available for ingredients. Causes severe skin burns and eye damage. |
| <b>Serious eye damage/eye irritation</b> | Classification based on data available for ingredients. Causes serious eye damage. Causes burns. |
| <b>Respiratory or skin sensitization</b> | No information available.                                                                        |
| <b>Germ cell mutagenicity</b>            | No information available.                                                                        |
| <b>Carcinogenicity</b>                   | No information available.                                                                        |
| <b>Reproductive toxicity</b>             | No information available.                                                                        |
| <b>STOT - single exposure</b>            | May cause respiratory irritation.                                                                |
| <b>STOT - repeated exposure</b>          | No information available.                                                                        |
| <b>Target organ effects</b>              | Respiratory system, Eyes, Skin.                                                                  |
| <b>Aspiration hazard</b>                 | No information available.                                                                        |
| <b>Other adverse effects</b>             | No information available.                                                                        |
| <b>Interactive effects</b>               | No information available.                                                                        |

**12. Ecological information**

|                    |                                                    |
|--------------------|----------------------------------------------------|
| <b>Ecotoxicity</b> | Harmful to aquatic life with long lasting effects. |
|--------------------|----------------------------------------------------|

| Chemical name    | Algae/aquatic plants | Fish                                         | Toxicity to microorganisms | Crustacea                                 |
|------------------|----------------------|----------------------------------------------|----------------------------|-------------------------------------------|
| Sodium Hydroxide | -                    | 96h, LC50: = 45.4 mg/L (Oncorhynchus mykiss) | -                          | 48h, EC50: = 40 mg/L (Ceriodaphnia dubia) |

|                                      |                                    |
|--------------------------------------|------------------------------------|
| <b>Persistence and degradability</b> | No information available.          |
| <b>Bioaccumulation</b>               | There is no data for this product. |
| <b>Other adverse effects</b>         | No information available.          |

**13. Disposal considerations****Disposal methods**

|                                            |                                                                                                                 |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Waste from residues/unused products</b> | Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. |
| <b>Contaminated packaging</b>              | Do not reuse empty containers. Dispose of contents/containers in accordance with local regulations.             |

**California Hazardous Waste Status** This product contains one or more substances that are listed with the State of California as a hazardous waste.

## 14. Transport information

**DOT** Regulated  
**UN number or ID number** UN1824  
**Proper shipping name** Sodium hydroxide solution  
**Transport hazard class(es)** 8  
**Packing group** II  
**DOT Marine Pollutant** No

**TDG** Regulated  
**UN number or ID number** UN1824  
**UN proper shipping name** Sodium hydroxide solution  
**Transport hazard class(es)** 8  
**Packing group** II

**ICAO (air)** Regulated  
**UN number or ID number** UN1824  
**UN proper shipping name** Sodium hydroxide solution  
**Transport hazard class(es)** 8  
**Packing group** II

**IATA** Regulated  
**UN number or ID number** UN1824  
**UN proper shipping name** Sodium hydroxide solution  
**Transport hazard class(es)** 8  
**Packing group** II

**IMDG** Regulated  
**UN number or ID number** UN1824  
**UN proper shipping name** Sodium hydroxide solution  
**Transport hazard class(es)** 8  
**Packing group** II

## 15. Regulatory information

### International Inventories

|                      |                                                   |
|----------------------|---------------------------------------------------|
| <b>TSCA</b>          | Complies.                                         |
| <b>DSL/NDL</b>       | Complies.                                         |
| <b>EINECS/ELINCS</b> | Contact supplier for inventory compliance status. |
| <b>ENCS</b>          | Contact supplier for inventory compliance status. |
| <b>IECSC</b>         | Contact supplier for inventory compliance status. |
| <b>KECL</b>          | Contact supplier for inventory compliance status. |
| <b>PICCS</b>         | Contact supplier for inventory compliance status. |
| <b>AIIC</b>          | Contact supplier for inventory compliance status. |
| <b>NZIoC</b>         | Contact supplier for inventory compliance status. |

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances  
**NZIoC** - New Zealand Inventory of Chemicals

### US Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

#### SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

#### CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

| Chemical name    | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Sodium Hydroxide | 1000 lb                     | -                      | -                         | X                          |

#### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

| Chemical name    | Hazardous Substances RQs | Extremely Hazardous Substances RQs | Reportable Quantity (RQ)                  |
|------------------|--------------------------|------------------------------------|-------------------------------------------|
| Sodium Hydroxide | 1000 lb                  | -                                  | RQ 1000 lb final RQ<br>RQ 454 kg final RQ |

### US State Regulations

#### California Proposition 65

This product does not contain any Proposition 65 chemicals.

#### U.S. State Right-to-Know Regulations

| Chemical name    | New Jersey | Massachusetts | Pennsylvania |
|------------------|------------|---------------|--------------|
| Sodium Hydroxide | X          | X             | X            |

### U.S. EPA Label Information

**EPA Pesticide Registration Number** Not applicable

## **16. Other information**

|             |                         |                       |                           |                              |
|-------------|-------------------------|-----------------------|---------------------------|------------------------------|
| <b>NFPA</b> | <b>Health hazards</b> 3 | <b>Flammability</b> 0 | <b>Instability</b> 0      | <b>Special hazards</b> -     |
| <b>HMIS</b> | <b>Health hazards</b> 3 | <b>Flammability</b> 0 | <b>Physical hazards</b> 0 | <b>Personal protection</b> X |

#### Key or legend to abbreviations and acronyms used in the safety data sheet

##### **Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

|         |                             |      |                                  |
|---------|-----------------------------|------|----------------------------------|
| TWA     | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value         | *    | Skin designation                 |

#### **Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)  
 U.S. Environmental Protection Agency ChemView Database  
 European Food Safety Authority (EFSA)

EPA (Environmental Protection Agency)  
Acute Exposure Guideline Level(s) (AEGL(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
National Institute of Technology and Evaluation (NITE)  
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
Organization for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

**Revision date** 02-Oct-2025  
**Revision Note** No information available.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**