# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

Issuing Date 18-Dec-2024 **Revision date** 24-Oct-2025 **Revision Number** 1.01

## 1. Identification

**Product identifier**

**Product Name** Crop+

**Other means of identification**

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

**Recommended use** Foliar applications for agricultural and horticultural crops.

**Restrictions on use** No information available

**Details of the supplier of the safety data sheet**

**Manufacturer Address**
Verdesian Life Sciences U.S., LLC
1001 Winstead Drive, Suite 480
Cary, NC 27513
United States
Telephone: 1-800-868-6446

**E-mail** sds@vlsci.com

**Emergency telephone number**

**Emergency Telephone** INFOTRAC 1-800-535-5053 (North America)
INFOTRAC +1-352-323-3500 (International)

## 2. Hazard(s) identification

**Classification**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 1 |
| Respiratory sensitization | Category 1 |
| Skin sensitization | Category 1 |
| Carcinogenicity | Category 1B |
| Reproductive toxicity | Category 1B |
| Specific target organ toxicity (repeated exposure) | Category 2 |

**Hazards not otherwise classified (HNOC)**
Not applicable.

**Label elements**

Danger

**Hazard statements**
Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause cancer.
May damage fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

**Precautionary Statements - Prevention**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves, protective clothing, eye protection and face protection.
In case of inadequate ventilation wear respiratory protection.
Contaminated work clothing must not be allowed out of the workplace.
Do not breathe dust.

**Precautionary Statements - Response**
Specific treatment (see supplemental first aid instructions on this label).
IF exposed or concerned: Get medical advice/attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.
IF ON SKIN: Wash with plenty of water and soap.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

**Precautionary Statements - Storage**
Store locked up.

**Precautionary Statements - Disposal**
Dispose of contents and container in accordance with local, regional, national, and international regulations as applicable.

**Other information**
May be harmful if swallowed. Causes mild skin irritation. Very toxic to aquatic life with long lasting effects.

## 3. Composition/information on ingredients

**Substance**

Not applicable.

**Mixture**

| Chemical name | CAS No. | Weight-% |
|---|---|---|
| Zinc sulfate | 7733-02-0 | 5 - <10 |
| Ferrous sulfate | 7720-78-7 | 3 - <5 |
| Manganese sulfate | 7785-87-7 | 3 - <5 |
| Copper sulfate | 7758-98-7 | 1 - <3 |
| Citric acid | 77-92-9 | 1 - <3 |
| Tetrasodium EDTA | 64-02-8 | 1 - <3 |
| Proprietary acid | Trade secret | 0.1 - <1 |

| Chemical name | CAS No. | Weight-% |
|---|---|---|
| Boric acid | 10043-35-3 | 0.1 - <1 |
| Cobalt(II) nitrate | 10141-05-6 | 0.1 - <1 |

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

## 4. First-aid measures

**Description of first aid measures**

**General advice** Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.

**Inhalation** Remove to fresh air. May cause allergic respiratory reaction. If breathing has stopped, give artificial respiration. Get medical attention immediately. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

**Eye contact** Get immediate medical attention. 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.

**Skin contact** Wash off immediately with soap and plenty of water for at least 15 minutes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.

**Ingestion** Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. May produce an allergic reaction. Get immediate medical attention.

**Self-protection of the first aider** Avoid contact with skin, eyes or clothing. 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. Use personal protective equipment as required. See section 8 for more information.

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

**Symptoms** Burning sensation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/ or wheezing. Itching. Rashes. Hives. Prolonged contact may cause redness and irritation.

**Effects of Exposure** May cause cancer. May cause adverse reproductive effects - such as birth defect, miscarriages, or infertility. May cause damage to organs through prolonged or repeated exposure.

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

**Note to physicians** May cause sensitization in susceptible persons. Treat symptomatically.

## 5. Fire-fighting measures

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

**Unsuitable extinguishing media** Do not scatter spilled material with high pressure water streams.

**Specific hazards arising from the chemical** Product is or contains a sensitizer. May cause sensitization by inhalation. May cause sensitization by skin contact.

**Hazardous combustion products** Carbon oxides. Metal oxides. Oxides of sulfur. Oxides of boron.

**Explosion data**

**Sensitivity to mechanical impact** 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** Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. 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.

**Methods for cleaning up** Pick up and transfer to properly labeled containers.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

## 7. Handling and storage

**Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Take off contaminated clothing and wash before reuse. Remove contaminated clothing and shoes.

**General hygiene considerations** Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and immediately after handling the product.

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

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

## 8. Exposure controls/personal protection

**Control Parameters**

**Exposure Limits** The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH |
|---|---|---|---|
| Ferrous sulfate<br>7720-78-7 | TWA: 1 mg/m³ Fe | (vacated) TWA: 1 mg/m³ Fe | TWA: 1 mg/m³ Fe |
| Manganese sulfate<br>7785-87-7 | TWA: 0.02 mg/m³ Mn respirable particulate matter<br>TWA: 0.1 mg/m³ Mn inhalable particulate matter | (vacated) Ceiling: 5 mg/m³<br>Ceiling: 5 mg/m³ Mn | IDLH: 500 mg/m³ Mn<br>TWA: 1 mg/m³ Mn<br>STEL: 3 mg/m³ Mn |

| | | | |
|---|---|---|---|
| Copper sulfate<br>7758-98-7 | TWA: 1 mg/m³ Cu dust and mist | - | IDLH: 100 mg/m³ Cu dust and mist<br>TWA: 1 mg/m³ Cu dust and mist |
| Boric acid<br>10043-35-3 | TWA: 2 mg/m³ inhalable particulate matter<br>STEL: 6 mg/m³ inhalable particulate matter | - | - |
| Cobalt(II) nitrate<br>10141-05-6 | TWA: 0.02 mg/m³ Co inhalable particulate matter | - | - |

**Biological occupational exposure limits**

| Chemical name | ACGIH |
|---|---|
| Cobalt(II) nitrate<br>10141-05-6 | 15 µg/L - urine (Cobalt) - end of shift at end of workweek |

**Appropriate engineering controls**

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

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

**Eye/face protection** Tight sealing safety goggles.

**Hand protection** Wear suitable gloves.

**Skin and body protection** Wear suitable protective clothing.

**Respiratory protection** Appropriate respiratory protection should be selected and used according to the chemical nature, hazards and use of this product and safety requirements of the local jurisdiction. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

## 9. Physical and chemical properties

**Information on basic physical and chemical properties**

**Appearance** Brown
**Physical state** Liquid
**Color** Brown
**Odor (includes odor threshold)** Characteristic

| Property | Values | | Remarks • Method |
|---|---|---|---|
| **Melting point / freezing point** | No data available | | None known |
| **Boiling point (or initial boiling point or boiling range)** | No data available | | None known |
| **Flammability** | No data available | | None known |
| **Flammability Limit in Air** | | | None known |
| **Upper flammability or explosive limits** | No data available | | |
| **Lower flammability or explosive limits** | No data available | | |
| **Flash point** | No data available | | None known |
| **Autoignition temperature** | No data available | | None known |
| **Decomposition temperature** | No data available | | None known |
| **SADT (°C)** | No data available | | None known |
| **pH** | No data available | - | None known |
| **pH (as aqueous solution)** | No data available | | None known |
| **Kinematic viscosity** | No data available | | None known |
| **Dynamic viscosity** | No data available | | None known |
| **Solubility** | No data available | | None known |

| | | |
|---|---|---|
| **Water solubility** | No data available | None known |
| **Partition coefficient n-octanol/water (log value)** | No data available | None known |
| **Vapor pressure (includes evaporation rate)** | No data available | None known |
| **Evaporation rate** | No data available | None known |
| **Density and/or relative density** | 1.32 - 1.37 | None known |
| **Bulk density** | No data available | |
| **Liquid Density** | No data available | |
| **Relative vapor density** | No data available | None known |
| **Particle characteristics** | | None known |
| **Particle Size** | No data available | |
| **Particle Size Distribution** | No data available | |

**Other information**

## 10. Stability and reactivity

**Reactivity** No information available.

**Chemical stability** Stable under normal conditions.

**Possibility of hazardous reactions** None under normal processing.

**Conditions to avoid** None known based on information supplied.

**Incompatible materials** Strong acids. Strong bases. Strong oxidizing agents.

**Hazardous decomposition products** None known based on information supplied.

## 11. Toxicological information

**Information on likely routes of exposure**

**Product Information**

**Inhalation** Specific test data for the substance or mixture is not available. May cause sensitization in susceptible persons. (based on components).

**Eye contact** Specific test data for the substance or mixture is not available. Causes serious eye damage. May cause irreversible damage to eyes.

**Skin contact** Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). May cause sensitization by skin contact. Causes mild skin irritation.

**Ingestion** Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause additional effects as listed under "Inhalation".

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

**Symptoms** Redness. Burning. May cause blindness. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Coughing and/ or wheezing. Itching. Rashes. Hives. Prolonged contact may cause redness and irritation.

**Acute toxicity** No information available.

**Numerical measures of toxicity**

The following ATE values have been calculated for the mixture

| | |
|---|---|
| ATEmix (oral) | 2,878.90 mg/kg |
| ATEmix (dermal) | 13,371.60 mg/kg |
| ATEmix (inhalation-gas) | 99,999.00 ppm |
| ATEmix (inhalation-vapor) | 99,999.00 mg/l |
| ATEmix (inhalation-dust/mist) | 99,999.00 mg/l |

**Component Information**

| Chemical name | CAS No. | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|---|
| Zinc sulfate | 7733-02-0 | = 1,710 mg/kg ( Rat ) | > 2,000 mg/kg ( Rat ) | - |
| Ferrous sulfate | 7720-78-7 | = 319 mg/kg ( Rat ) | - | - |
| Manganese sulfate | 7785-87-7 | = 782 mg/kg ( Rat ) | - | > 4.45 mg/L ( Rat ) 4 h |
| Copper sulfate | 7758-98-7 | = 300 mg/kg ( Rat ) | > 2,000 mg/kg ( Rat ) | - |
| Citric acid | 77-92-9 | = 3 g/kg ( Rat ) | > 2,000 mg/kg ( Rat ) | - |
| Tetrasodium EDTA | 64-02-8 | = 1,658 mg/kg ( Rat ) | - | - |
| Proprietary acid | | = 891 mg/kg ( Rat ) | > 2,000 mg/kg ( Rat ) | > 900 mg/m³ ( Rat ) 1 h |
| Boric acid | 10043-35-3 | = 2,660 mg/kg ( Rat ) | > 2,000 mg/kg ( Rabbit ) | > 2.12 mg/L ( Rat ) 4 h (No deaths) |

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

**Skin corrosion/irritation** May cause skin irritation. Classification based on data available for ingredients. Causes mild skin irritation.

**Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes burns. Causes serious eye damage.

**Respiratory or skin sensitization** May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Chemical name | CAS No. | ACGIH | IARC | NTP | OSHA |
|---|---|---|---|---|---|
| Boric acid | 10043-35-3 | - | Group 2A | - | X |
| Cobalt(II) nitrate | 10141-05-6 | A3 | Group 2B | Reasonably Anticipated | X |

**Reproductive toxicity** Classification based on data available for ingredients. May damage fertility or the unborn child.

**STOT - single exposure** No information available.

**STOT - repeated exposure** May cause damage to organs through prolonged or repeated exposure.

**Aspiration hazard** No information available.

**Other adverse effects** No information available.

**Interactive effects** No information available.

## 12. Ecological information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

| Chemical name | Algae/aquatic plants | Fish | Toxicity to microorganisms | Crustacea |
|---|---|---|---|---|
| Zinc sulfate<br>7733-02-0 | EC50: =0.056mg/L (72h, Pseudokirchneriella subcapitata) | LC50: =0.162mg/L (96h, Oncorhynchus mykiss)<br>LC50: 0.03 - 0.05mg/L (96h, Oncorhynchus mykiss)<br>LC50: 0.34 - 0.93mg/L (96h, Oncorhynchus mykiss)<br>LC50: 0.218 - 0.42mg/L (96h, Pimephales promelas)<br>LC50: =0.06mg/L (96h, Pimephales promelas)<br>LC50: 0.23 - 0.48mg/L (96h, Pimephales promelas)<br>LC50: 0.168 - 0.25mg/L (96h, Pimephales promelas)<br>LC50: =0.15mg/L (96h, Cyprinus carpio)<br>LC50: 16.85 - 27.18mg/L (96h, Cyprinus carpio)<br>LC50: 3 - 4.6mg/L (96h, Lepomis macrochirus)<br>LC50: 3.55 - 6.32mg/L (96h, Lepomis macrochirus)<br>LC50: =0.63mg/L (96h, Poecilia reticulata)<br>LC50: 49.23 - 64.16mg/L (96h, Poecilia reticulata)<br>LC50: 0.48 - 1.72mg/L (96h, Poecilia reticulata) | - | EC50: =0.75mg/L (48h, Daphnia magna)<br>EC50: 0.538 - 0.908mg/L (48h, Daphnia magna) |
| Ferrous sulfate<br>7720-78-7 | - | LC50: =925mg/L (96h, Poecilia reticulata) | - | EC50: =152mg/L (48h, Daphnia magna) |
| Copper sulfate<br>7758-98-7 | - | LC50: =0.1mg/L (96h, Oncorhynchus mykiss) | - | EC50: 0.007mg/L (48h, Daphnia magna) |
| Citric acid<br>77-92-9 | - | LC50: =1,516mg/L (96h, Lepomis macrochirus) | - | - |
| Tetrasodium EDTA<br>64-02-8 | - | LC50: =41mg/L (96h, Lepomis macrochirus)<br>LC50: =59.8mg/L (96h, Pimephales promelas) | - | - |
| Proprietary acid | - | - | - | EC50: =870mg/L (48h, Daphnia magna) |
| Boric acid<br>10043-35-3 | - | - | - | EC50: 115 - 153mg/L (48h, Daphnia magna) |

**Persistence and degradability** No information available.

**Bioaccumulation**

**Component Information**

| Chemical name | Partition coefficient |
|---|---|

| | |
|---|---|
| Citric acid<br>77-92-9 | -1.72 |
| Proprietary acid | 2.25 |
| Boric acid<br>10043-35-3 | -1.09 |

**Other adverse effects** No information available.

## 13. Disposal considerations

**Disposal methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

**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**

**UN number or ID number** UN3082
**Proper shipping name** Environmentally hazardous substance, liquid, n.o.s.
**Transport hazard class(es)** 9
**Packing group** III
**Reportable quantity (lbs)** Zinc sulfate monohydrate: RQ (lb)= 1000.00, Ferrous sulfate monohydrate: RQ (lb)= 1000.00, Copper sulfate pentahydrate: RQ (lb)= 10.00
**Special Provisions** 8, 146, 173, 335, 441, IB3, T4, TP1, TP29
**DOT Marine Pollutant** PP
**Marine pollutant** Copper sulfate
**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s. (Copper sulfate), 9, III
**Emergency Response Guide Number** 171
**Notes** **RQ will not be exceeded in packages less than 30 gallons.**

**IATA**

**UN number or ID number** UN3082
**UN proper shipping name** Environmentally hazardous substance, liquid, n.o.s.
**Transport hazard class(es)** 9
**Packing group** III
**Technical Name** Zinc sulfate, Copper sulfate
**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s.(Zinc sulfate, Copper sulfate), 9, III
**Special Provisions** A97, A158, A197, A215
**ERG Code** 9L
**Notes** **May be shipped as not regulated in quantities not more than 5 L / 5 kg in accordance with IATA SP A197.**

**IMDG**

**UN number or ID number** UN3082
**UN proper shipping name** Environmentally hazardous substance, liquid, n.o.s.
**Transport hazard class(es)** 9
**Packing group** III

| | |
|---|---|
| **EmS-No.** | F-A, S-F |
| **Special Provisions** | 274, 335, 375, 969 |
| **Marine pollutant** | P |
| **Marine pollutant name** | Zinc sulfate, Copper sulfate |
| **Description** | UN3082, Environmentally hazardous substance, liquid, n.o.s.(Zinc sulfate, Copper sulfate), 9, III, Marine pollutant |
| **Notes** | **May be shipped as not regulated in quantities not more than 5 L / 5 kg in accordance with IMDG Special Provision 375.** |

## 15. Regulatory information

Contact supplier for inventory compliance status

## 16. Other information

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **NFPA** | **Health hazards** 0 | **Flammability** 0 | **Instability** 0 | **Special hazards** - |
| **HMIS** | **Health hazards** 0 | **Flammability** 0 | **Physical hazards** 0 | **Personal protection** - |

*Chronic Hazard Star Legend* ** = Chronic Health Hazard*

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

*List may include phrases which are not applicable to this product*

**Legend**

| | |
|---|---|
| ACGIH | American Conference of Governmental Industrial Hygienists |
| ADN | Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Europe) |
| ADR | Agreement concerning the International Carriage of Dangerous Goods by Road (Europe) |
| AIIC | Australian Inventory of Industrial Chemicals |
| ATE | Acute Toxicity Estimate |
| ASTM | American Society for the Testing of Materials |
| bar | Biological Reference Values for Chemical Compounds in the Work Area |
| BAT | Biological tolerance values for occupational exposure |
| BEL | Biological exposure limits |
| bw | Body weight |
| Ceiling | Maximum limit value |
| CMR | Carcinogen, Mutagen or Reproductive Toxicant |
| DOT | Department of Transportation (United States) |
| DSL | Domestic Substances List (Canada) |
| EmS | Emergency Schedule |
| ENCS | Existing and New Chemical Substances (Japan) |
| EPA | Environmental Protection Agency |
| GHS | Globally Harmonized System |
| HMIS | Hazardous Materials Identification System |
| IARC | International Agency for Research on Cancer |
| IATA | International Air Transport Association |
| IBC | International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk |
| ICAO | International Civil Aviation Organization |
| IECSC | Inventory of Existing Chemical Substances in China |
| IMDG | International Maritime Dangerous Goods |
| IMO | International Maritime Organization |
| ISO | International Organization for Standardization |
| KECI | Korean Existing Chemicals Inventory |
| LC50 | Lethal Concentration to 50% of a test population |
| LD50 | Lethal Dose to 50% of a test population (Median Lethal Dose) |
| MARPOL | International Convention for the Prevention of Pollution from Ships |
| NFPA | National Fire Protection Association |
| NIOSH | National Institute for Occupational Safety and Health |
| n.o.s. | Not Otherwise Specified |
| NOAEC | No Observed Adverse Effect Concentration |

| | |
|---|---|
| NOAEL | No Observed Adverse Effect Level |
| NOELR | No Observable Effect Loading Rate |
| NTP | National Toxicology Program (United States) |
| NZIoC | New Zealand Inventory of Chemicals |
| OECD | Organization for Economic Cooperation and Development |
| OEL | Occupational exposure limits |
| OSHA | Occupational Safety and Health Administration of the US Department of Labor |
| PBT | Persistent, Bioaccumulative and Toxic substance |
| PICCS | Philippines Inventory of Chemicals and Chemical Substances |
| PMT | Persistent, Mobile and Toxic |
| PPE | Personal protective equipment |
| QSAR | Quantitative Structure Activity Relationship |
| RID | Agreement concerning the International Carriage of Dangerous Goods by Rail (Europe) |
| SADT | Self-Accelerating Decomposition Temperature |
| SAR | Structure-activity relationship |
| SARA | Superfund Amendments and Reauthorization Act |
| SDS | Safety Data Sheet |
| SL | Surface Limit |
| STEL | Short Term Exposure Limit |
| STOT RE | Specific target organ toxicity - Repeated exposure |
| STOT SE | Specific target organ toxicity - Single exposure |
| TCSI | Taiwan Chemical Substance Inventory |
| TDG | Transport of Dangerous Goods (Canada) |
| TSCA | Toxic Substances Control Act (United States) |
| TWA | Time-Weighted Average |
| UN | United Nations |
| VOC | Volatile organic compounds |
| vPvB | Very Persistent and Very Bioaccumulative |
| vPvM | Very Persistent and Very Mobile |
| As | Allergenic substance |
| DS | Dermal Sensitizer |
| Ot | Ototoxicant |
| pOt | Ototoxicant - potential to cause hearing disorders |
| PS | Photosensitizer |
| RS | Respiratory Sensitizer |
| S | Sensitizer |
| poS | Sensitizer - capable of causing occupational asthma |
| Sa | Simple asphyxiant |
| Sd | Skin designation |
| pSd | Skin designation - potential for cutaneous absorption |
| Sdv | Skin designation - vacated |
| Sk | Skin notation |
| dSk | Skin notation - danger of cutaneous absorption |
| pSk | Skin notation - potential for cutaneous absorption |

**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)
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)
U.S. 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

| | |
|---|---|
| **Issuing Date** | 18-Dec-2024 |
| **Revision date** | 24-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**