# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
US OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canada WHMIS which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR)

**Issuing Date** 22-Aug-2025 **Revision date** 22-Aug-2025 **Revision Number** 1

## 1. Identification

**Product identifier**

**Product Name** Rechargeable Li-ion Battery L24X3PG3 by CosMX

**Other means of identification**

**Product Code(s)** 1870827

**Synonyms** None

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

**Recommended use** Lithium Ion Battery

**Restrictions on use** No information available

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

**Supplier Name** Lenovo LNB laptops

**Supplier Address**
Songtao Road 696
shanghai
shanghai
201203
CN

**Emergency telephone number**

**Supplier Phone Number** Phone:18116118603

**24 Hour Emergency Phone Number** 18116118603

**Emergency Telephone** No information available

## 2. Hazard(s) identification

**Classification of the substance or mixture**

| | |
|---|---|
| Skin corrosion/irritation | Category 1 Sub-category B |
| Serious eye damage/eye irritation | Category 1 |
| Skin sensitization | Category 1 |
| Carcinogenicity | Category 1B |
| Specific target organ toxicity (repeated exposure) | Category 1 |

**Label elements**



**Danger**

**Hazard statements**
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause cancer.
Causes 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.
Do not breathe dust.
Wash face, hands and any exposed skin thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Do not eat, drink or smoke when using this product.
Wear protective gloves.
**Precautionary Statements - Response**
IF exposed or concerned: Get medical advice/attention.
Immediately call a POISON CENTER or doctor.
Specific treatment (see supplemental first aid instructions on this label).
**Eyes**
Immediately call a POISON CENTER or doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
**Skin**
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Wash contaminated clothing before reuse.
IF ON SKIN: Wash with plenty of water and soap.
If skin irritation or rash occurs: Get medical advice and attention.
Take off contaminated clothing and wash it before reuse.
**Inhalation**
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor.
**Ingestion**
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

**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.

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200**
No information available.

**Other information**
May be harmful if swallowed. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects. This is a battery. In case of rupture: the above hazards exist.

## 3. Composition/information on ingredients

**Substance**

Not applicable.

**Mixture**

| Chemical name | CAS No. | Weight-% | Hazardous Material Information Review Act registry number (HMIRA registry #) | Date HMIRA filed and date exemption granted (if applicable) |
|---|---|---|---|---|
| Lithium Cobalt Oxide (CoLiO2) | 12190-79-3 | 50 | - | - |
| Graphite | 7782-42-5 | 25 | - | - |
| Copper | 7440-50-8 | 10 | - | - |
| Aluminum | 7429-90-5 | 10 | - | - |
| Phosphate(1-), hexafluoro-, lithium | 21324-40-3 | 5 | - | - |
| Ethylene carbonate | 96-49-1 | 5 | - | - |
| Glass, oxide | 65997-17-3 | 3 | - | - |
| Nickel | 7440-02-0 | 2 | - | - |
| Carbon black | 1333-86-4 | 2 | - | - |
| Poly(acrylic acid) | 9003-01-4 | 1.5 | - | - |
| 1,3-Propane sultone | 1120-71-4 | 0.5 | - | - |
| Acrylic acid | 79-10-7 | 0.2 | - | - |
| Titanium dioxide | 13463-67-7 | 0.1 | - | - |
| Oxirane, 2,2`-4-butylidenebisphenyleneoxymethylene (DGEBA) | 25085-99-8 | 0.1 | - | - |

## 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. First aid is upon rupture of sealed battery. In case of rupture:

**Inhalation** 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.

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention. May cause an allergic skin reaction.

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

**Self-protection of the first aider** Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Wear personal protective clothing (see section 8).

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

**Symptoms** Burning sensation. Itching. Rashes. Hives.

**Effects of Exposure** May cause cancer. Causes damage to organs through prolonged or repeated exposure.

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

**Note to physicians** 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. 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** The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Product is or contains a sensitizer. May cause sensitization by skin contact.

**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** Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. 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** In case of rupture: Handle in accordance with good industrial hygiene and safety practice. 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.

**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. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

**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 |
|---|---|---|---|
| Lithium Cobalt Oxide (CoLiO2)<br>12190-79-3 | TWA: 0.02 mg/m³ | - | - |
| Graphite<br>7782-42-5 | TWA: 2 mg/m³ respirable particulate matter all forms except graphite fibers | TWA: 15 mg/m³ total dust synthetic<br>TWA: 5 mg/m³ respirable fraction synthetic<br>TWA: 15 mppcf respirable dust natural<br>(vacated) TWA: 2.5 mg/m³ respirable dust natural<br>(vacated) TWA: 10 mg/m³ total dust synthetic<br>(vacated) TWA: 5 mg/m³ respirable fraction synthetic<br>TWA: 15 mppcf natural | IDLH: 1250 mg/m³<br>TWA: 2.5 mg/m³ respirable dust |
| Copper<br>7440-50-8 | TWA: 0.2 mg/m³ fume | TWA: 0.1 mg/m³ fume<br>TWA: 1 mg/m³ dust and mist<br>(vacated) TWA: 0.1 mg/m³ Cu dust, fume, mist | TWA: 1 mg/m³; dust and mist<br>TWA: 0.1 mg/m³; fume<br>IDLH: 100 mg/m³ dust, fume and mist |
| Aluminum<br>7429-90-5 | TWA: 1 mg/m³ respirable particulate matter | TWA: 15 mg/m³ total dust<br>TWA: 5 mg/m³ respirable fraction<br>(vacated) TWA: 15 mg/m³ total dust<br>(vacated) TWA: 5 mg/m³ respirable fraction | TWA: 10 mg/m³; total dust<br>TWA: 5 mg/m³; respirable dust |
| Phosphate(1-), hexafluoro-, lithium<br>21324-40-3 | TWA: 2.5 mg/m³ F | TWA: 2.5 mg/m³ F<br>(vacated) TWA: 2.5 mg/m³ | IDLH: 250 mg/m³ F |
| Glass, oxide<br>65997-17-3 | TWA: 1 fiber/cm3 respirable fibers: length >5 µm, aspect ratio >=3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination | - | - |

| | | | |
|---|---|---|---|
| | TWA: 5 mg/m³ inhalable fraction | | |
| Nickel<br>7440-02-0 | TWA: 1.5 mg/m³ | TWA: 1 mg/m³<br>(vacated) TWA: 1 mg/m³ | IDLH: 10 mg/m³<br>TWA: 0.015 mg/m³ |
| Carbon black<br>1333-86-4 | TWA: 3 mg/m³ inhalable particulate matter | TWA: 3.5 mg/m³<br>(vacated) TWA: 3.5 mg/m³ | TWA: 3.5 mg/m³;<br>TWA: 0.1 mg/m³; Carbon black in presence of Polycyclic aromatic hydrocarbons PAH<br>IDLH: 1750 mg/m³ |
| 1,3-Propane sultone<br>1120-71-4 | Exposure by all routes should be carefully controlled to levels as low as possible | - | - |
| Acrylic acid<br>79-10-7 | TWA: 2 ppm<br>pSk | (vacated) TWA: 10 ppm<br>(vacated) TWA: 30 mg/m³<br>Sdv | TWA: 2 ppm;<br>TWA: 6 mg/m³; |
| Titanium dioxide<br>13463-67-7 | TWA: 10 mg/m³ | TWA: 15 mg/m³ total dust<br>(vacated) TWA: 10 mg/m³ total dust | IDLH: 5000 mg/m³ |

| Chemical name | Alberta | British Columbia | Ontario | Quebec |
|---|---|---|---|---|
| Lithium Cobalt Oxide (CoLiO2)<br>12190-79-3 | TWA: 0.02 mg/m³; | TWA: 0.02 mg/m³; inhalable<br>DS<br>RS | TWA: 0.02 mg/m³; | TWAEV: 0.02 mg/m³; inhalable aerosol fraction |
| Graphite<br>7782-42-5 | TWA: 2 mg/m³; respirable | TWA: 2 mg/m³; respirable | TWA: 2 mg/m³; respirable particulate matter | TWAEV: 2 mg/m³; respirable dust |
| Copper<br>7440-50-8 | TWA: 0.2 mg/m³; fume<br>TWA: 1 mg/m³; dust and mist | TWA: 1 mg/m³; dust and mist<br>TWA: 0.2 mg/m³; fume | TWA: 0.2 mg/m³; fume<br>TWA: 1 mg/m³; dust and mist | TWAEV: 0.2 mg/m³; fume<br>TWAEV: 1 mg/m³; dust and mist |
| Aluminum<br>7429-90-5 | TWA: 10 mg/m³; dust | TWA: 1.0 mg/m³; respirable | TWA: 1 mg/m³; respirable particulate matter | TWAEV: 10 mg/m³; |
| Phosphate(1-), hexafluoro-, lithium<br>21324-40-3 | TWA: 2.5 mg/m³; | TWA: 2.5 mg/m³; | TWA: 2.5 mg/m³; | TWAEV: 2.5 mg/m³; |
| Glass, oxide<br>65997-17-3 | TWA: 5 mg/m³; total particulate<br>TWA: 1 fibre/cm3; | TWA: 1 fibre/cm3;<br>TWA: 5 mg/m³; inhalable | TWA: 1 fibre/cm3; respirable<br>TWA: 5 mg/m³; inhalable fraction | TWAEV: 1 fibre/cm3; respirable<br>TWAEV: 5 mg/m³; inhalable aerosol fraction |
| Nickel<br>7440-02-0 | TWA: 1.5 mg/m³; | TWA: 0.05 mg/m³; | TWA: 1 mg/m³; inhalable fraction | TWAEV: 1.5 mg/m³; inhalable dust |
| Carbon black<br>1333-86-4 | TWA: 3.5 mg/m³; | TWA: 3 mg/m³; inhalable | TWA: 3 mg/m³; inhalable particulate matter | TWAEV: 3 mg/m³; inhalable dust |
| 1,3-Propane sultone<br>1120-71-4 | - | : ; | : ; | : ; |
| Acrylic acid<br>79-10-7 | TWA: 2 ppm;<br>TWA: 5.9 mg/m³; pSk | TWA: 2 ppm; Adverse reproductive effect<br>Sk | TWA: 2 ppm; dSk | TWAEV: 2 ppm;<br>TWAEV: 5.9 mg/m³; Sd |
| Titanium dioxide<br>13463-67-7 | TWA: 10 mg/m³; | TWA: 10 mg/m³; total dust<br>TWA: 3 mg/m³; respirable fraction | TWA: 10 mg/m³; | TWAEV: 10 mg/m³; total dust |

| Chemical name | Manitoba | New Brunswick | Newfoundland and Labrador | Nova Scotia |
|---|---|---|---|---|
| Lithium Cobalt Oxide (CoLiO2) | TWA: 0.02 mg/m³; inhalable particulate matter<br>DS<br>RS | TWA: 0.02 mg/m³; | TWA: 0.02 mg/m³; inhalable particulate matter<br>DS<br>RS | TWA: 0.02 mg/m³; inhalable particulate matter<br>DS<br>RS |
| Graphite | TWA: 2 mg/m³; respirable particulate matter | TWA: 2 mg/m³; respirable fraction | TWA: 2 mg/m³; respirable particulate matter | TWA: 2 mg/m³; respirable particulate matter |
| Copper | TWA: 0.2 mg/m³; fume | TWA: 0.2 mg/m³; fume | TWA: 0.2 mg/m³; fume | TWA: 0.2 mg/m³; fume |
| Aluminum | TWA: 1 mg/m³; respirable particulate matter | TWA: 1 mg/m³; respirable fraction | TWA: 1 mg/m³; respirable particulate matter | TWA: 1 mg/m³; respirable particulate matter |
| Phosphate(1-), hexafluoro-, lithium | TWA: 2.5 mg/m³; | TWA: 2.5 mg/m³; | TWA: 2.5 mg/m³; | TWA: 2.5 mg/m³; |
| Glass, oxide | TWA: 1 fiber/cm3; respirable fibers<br>TWA: 5 mg/m³; inhalable particulate matter | TWA: 1 fiber/cm3; respirable fibers<br>TWA: 5 mg/m³; inhalable fraction | TWA: 1 fiber/cm3; respirable fibers<br>TWA: 5 mg/m³; inhalable particulate matter | TWA: 1 fiber/cm3; respirable fibers<br>TWA: 5 mg/m³; inhalable particulate matter |
| Nickel | TWA: 1.5 mg/m³; inhalable particulate matter | TWA: 1.5 mg/m³; inhalable fraction | TWA: 1.5 mg/m³; inhalable particulate matter | TWA: 1.5 mg/m³; inhalable particulate matter |
| Carbon black | TWA: 3 mg/m³; inhalable particulate matter | TWA: 3 mg/m³; inhalable fraction | TWA: 3 mg/m³; inhalable particulate matter | TWA: 3 mg/m³; inhalable particulate matter |
| Acrylic acid | TWA: 2 ppm;<br>pSk | TWA: 2 ppm;<br>pSk | TWA: 2 ppm;<br>pSk | TWA: 2 ppm;<br>pSk |
| Titanium dioxide | TWA: 0.2 mg/m³; nanoscale respirable particulate matter<br>TWA: 2.5 mg/m³; finescale respirable particulate matter | TWA: 10 mg/m³; | TWA: 0.2 mg/m³; nanoscale respirable particulate matter<br>TWA: 2.5 mg/m³; finescale respirable particulate matter | TWA: 0.2 mg/m³; nanoscale respirable particulate matter<br>TWA: 2.5 mg/m³; finescale respirable particulate matter |

| Chemical name | Nunavut | Prince Edward Island | Saskatchewan | Yukon |
|---|---|---|---|---|
| Lithium Cobalt Oxide (CoLiO2) | TWA: 0.02 mg/m³; STEL: 0.06 mg/m³; Designated substance | TWA: 0.02 mg/m³; inhalable particulate matter | TWA: 0.02 mg/m³; STEL: 0.06 mg/m³; Designated Chemical Substance | - |
| Graphite | TWA: 2 mg/m³; respirable fraction<br>STEL: 4 mg/m³; respirable fraction | TWA: 2 mg/m³; respirable particulate matter | TWA: 2 mg/m³; respirable fraction<br>STEL: 4 mg/m³; respirable fraction | TWA: 20 mppcf; TWA: 30 mppcf; TWA: 10 mg/m³; |
| Copper | TWA: 0.2 mg/m³; fume<br>TWA: 1 mg/m³; dust and mist<br>STEL: 3 mg/m³; dust and mist<br>STEL: 0.6 mg/m³; fume | TWA: 0.2 mg/m³; fume | TWA: 0.2 mg/m³; fume<br>TWA: 1 mg/m³; dust and mist<br>STEL: 0.6 mg/m³; fume<br>STEL: 3 mg/m³; dust and mist | TWA: 0.2 mg/m³; fume<br>TWA: 1 mg/m³; dust and mist<br>STEL: 0.2 mg/m³; fume<br>STEL: 2 mg/m³; dust and mist |
| Aluminum | TWA: 10 mg/m³; dust<br>STEL: 20 mg/m³; dust | TWA: 1 mg/m³; respirable particulate matter | TWA: 10 mg/m³; dust<br>STEL: 20 mg/m³; dust | - |
| Phosphate(1-), hexafluoro-, lithium | - | TWA: 2.5 mg/m³; | TWA: 2.5 mg/m³;<br>STEL: 5 mg/m³; | TWA: 2.5 mg/m³;<br>STEL: 2.5 mg/m³; |
| Glass, oxide | TWA: 1 fibre/cm3; | TWA: 1 fiber/cm3; | TWA: 5 mg/m³; | TWA: 30 mppcf; dust or |

| Chemical name | Nunavut | Prince Edward Island | Saskatchewan | Yukon |
|---|---|---|---|---|
| | respirable fibres<br>TWA: 5 mg/m³;<br>inhalable fraction<br>STEL: 3 fibre/cm3;<br>respirable fibres<br>STEL: 10 mg/m³;<br>inhalable fraction | respirable fibers<br>TWA: 5 mg/m³;<br>inhalable particulate matter | inhalable fraction<br>TWA: 1 fibre/cm3;<br>respirable fibres<br>STEL: 3 fibre/cm3;<br>respirable fibres<br>STEL: 10 mg/m³;<br>inhalable fraction | fibrous<br>TWA: 10 mg/m³; dust or fibrous |
| Nickel | TWA: 1.5 mg/m³;<br>inhalable fraction<br>STEL: 3 mg/m³;<br>inhalable fraction<br>Designated substance | TWA: 1.5 mg/m³;<br>inhalable particulate matter | TWA: 1.5 mg/m³;<br>inhalable fraction<br>STEL: 3 mg/m³;<br>inhalable fraction<br>Designated Chemical Substance | TWA: 1 mg/m³;<br>STEL: 3 mg/m³; |
| Carbon black | TWA: 3.5 mg/m³;<br>STEL: 7 mg/m³; | TWA: 3 mg/m³;<br>inhalable particulate matter | TWA: 3.5 mg/m³;<br>STEL: 7 mg/m³; | TWA: 3.5 mg/m³;<br>STEL: 7 mg/m³; |
| 1,3-Propane sultone | Designated substance | - | Designated Chemical Substance | - |
| Acrylic acid | TWA: 2 ppm;<br>STEL: 4 ppm;<br>Sk | TWA: 2 ppm; | TWA: 2 ppm;<br>STEL: 4 ppm;<br>pSd | - |
| Titanium dioxide | TWA: 10 mg/m³;<br>STEL: 20 mg/m³; | TWA: 0.2 mg/m³;<br>nanoscale respirable particulate matter<br>TWA: 2.5 mg/m³;<br>finescale respirable particulate matter | TWA: 10 mg/m³;<br>STEL: 20 mg/m³; | TWA: 30 mppcf;<br>TWA: 10 mg/m³;<br>STEL: 20 mg/m³; |

**Note** See section 16 for terms and abbreviations.

**Other information on limit values** Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

**Biological occupational exposure limits**

| Chemical name | ACGIH |
|---|---|
| Lithium Cobalt Oxide (CoLiO2)<br>12190-79-3 | 15 µg/L - urine (Cobalt) - end of shift at end of workweek |
| Phosphate(1-), hexafluoro-, lithium<br>21324-40-3 | 2 mg/L - urine (Fluoride) - prior to shift<br>3 mg/L - urine (Fluoride) - end of shift |
| Nickel<br>7440-02-0 | 5 µg/L - urine (Nickel) - post-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. Face protection shield.

**Hand protection** Wear suitable gloves. Impervious gloves.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

**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** | Black |
| **Physical state** | Solid |
| **Color** | No information available |
| **Odor (includes odor threshold)** | Odorless |
| **Odor threshold** | No information available |

| **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** | Insoluble in water | None known |
| **Partition coefficient n-octanol/water (log value)** | 1 | None known |
| **Vapor pressure (includes evaporation rate)** | No data available | None known |
| **Evaporation rate** | No data available | None known |
| **Density and/or relative density** | No data available | 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**

| | |
|---|---|
| **Miscible** | No |
| Heat of combustion | 3.415 |

## 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** Exposure to air or moisture over prolonged periods.

**Incompatible materials** Acids. Bases. Oxidizing agent.

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

## 11. Toxicological information

**Information on likely routes of exposure**

**Product Information** Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:

**Inhalation** 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.

**Eye contact** 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.

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

**Ingestion** 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**

**Symptoms** Redness. Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives.

**Acute toxicity** No information available.

**Numerical measures of toxicity**

The following ATE values have been calculated for the mixture

| | |
|---|---|
| ATEmix (oral) | 3,333.30 mg/kg |
| ATEmix (dermal) | 6,000.00 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 | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Lithium Cobalt Oxide (CoLiO2)<br>12190-79-3 | > 5000 mg/kg ( Rat ) | > 2000 mg/kg ( Rat ) | > 5.05 mg/L ( Rat ) 4 h |
| Graphite<br>7782-42-5 | - | - | > 2000 mg/m³ ( Rat ) 4 h |
| Copper<br>7440-50-8 | - | - | > 5.11 mg/L ( Rat ) 4 h |
| Aluminum | - | - | > 0.888 mg/L ( Rat ) 4 h |

| | | | |
|---|---|---|---|
| 7429-90-5 | | | |
| Ethylene carbonate<br>96-49-1 | = 10 g/kg ( Rat ) | > 26420 mg/kg ( Rabbit ) | > 730 mg/m³ ( Rat ) 8 h |
| Nickel<br>7440-02-0 | > 9000 mg/kg ( Rat ) | - | > 10.2 mg/L ( Rat ) 1 h |
| Carbon black<br>1333-86-4 | > 10000 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | > 4.6 mg/m³ ( Rat ) 4 h |
| Poly(acrylic acid)<br>9003-01-4 | = 2500 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | > 5.1 mg/L ( Rat ) 4 h |
| 1,3-Propane sultone<br>1120-71-4 | = 157 mg/kg ( Rat ) | - | - |
| Acrylic acid<br>79-10-7 | = 1500 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | = 3.6 mg/L ( Rat ) 4 h<br>= 11.1 mg/L ( Rat ) 1 h |
| Titanium dioxide<br>13463-67-7 | > 2000 mg/kg ( Rat ) | - | > 5.09 mg/L ( Rat ) 4 h |

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

**Skin corrosion/irritation** Classification based on data available for ingredients. Causes severe skin burns and eye damage.

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

**Respiratory or skin sensitization** 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. This product contains titanium dioxide in a non-respirable form. Inhalation of titanium dioxide is unlikely to occur from exposure to this product.

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

| Chemical name | ACGIH | IARC | NTP | OSHA |
|---|---|---|---|---|
| Lithium Cobalt Oxide (CoLiO2)<br>12190-79-3 | A3<br>A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans | Group 2B | Reasonably Anticipated | X |
| Aluminum<br>7429-90-5 | A4 - Not Classifiable as a Human Carcinogen | - | - | - |
| Phosphate(1-), hexafluoro-, lithium<br>21324-40-3 | A4 - Not Classifiable as a Human Carcinogen | - | - | - |
| Glass, oxide<br>65997-17-3 | A4 - Not Classifiable as a Human Carcinogen (listed under Synthetic vitreous fibers) | Group 3 | - | - |
| Nickel<br>7440-02-0 | A5 - Not Suspected as a Human Carcinogen | Group 2B | Reasonably Anticipated | X |
| Carbon black<br>1333-86-4 | A3<br>A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans | Group 2B | - | X |
| Poly(acrylic acid) | - | Group 3 | - | - |

| | | | | |
|---|---|---|---|---|
| 9003-01-4 | | | | |
| 1,3-Propane sultone<br>1120-71-4 | A3<br>A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans | Group 2A | Reasonably Anticipated | X |
| Acrylic acid<br>79-10-7 | A4 - Not Classifiable as a Human Carcinogen | Group 3 | - | - |
| Titanium dioxide<br>13463-67-7 | A3<br>A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans | Group 2B | - | X |

**Legend**

**ACGIH (American Conference of Governmental Industrial Hygienists)**
A3 - Animal Carcinogen
A4 - Not classifiable as a human carcinogen
**IARC (International Agency for Research on Cancer)**
Group 2A - Probably carcinogenic to humans
Group 2B - Possibly carcinogenic to humans
Group 3 - Not classifiable as to carcinogenicity in humans
**NTP (National Toxicology Program)**
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
**Occupational Safety and Health Administration of the US Department of Labor**
X - Present

**Reproductive toxicity** No information available.

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

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

**Aspiration hazard** No information available.

## 12. Ecological information

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

| Chemical name | Algae/aquatic plants | Fish | Toxicity to microorganisms | Crustacea |
|---|---|---|---|---|
| Graphite<br>7782-42-5 | - | 96h LC50: > 100 mg/L (Danio rerio) | - | - |
| Copper<br>7440-50-8 | 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)<br>96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) | 96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas)<br>96h LC50: < 0.3 mg/L (Pimephales promelas)<br>96h LC50: = 0.2 mg/L (Pimephales promelas)<br>96h LC50: = 0.052 mg/L (Oncorhynchus mykiss)<br>96h LC50: = 1.25 mg/L (Lepomis macrochirus)<br>96h LC50: = 0.3 mg/L | - | 48h EC50: = 0.03 mg/L (Daphnia magna) |

| | | | | |
|---|---|---|---|---|
| | | (Cyprinus carpio)<br>96h LC50: = 0.8 mg/L<br>(Cyprinus carpio)<br>96h LC50: = 0.112 mg/L<br>(Poecilia reticulata) | | |
| Ethylene carbonate<br>96-49-1 | - | 96h LC50: > 100 mg/L<br>(Oncorhynchus mykiss) | - | - |
| Nickel<br>7440-02-0 | 72h EC50: = 0.18 mg/L<br>(Pseudokirchneriella subcapitata)<br>96h EC50: 0.174 - 0.311 mg/L<br>(Pseudokirchneriella subcapitata) | 96h LC50: > 100 mg/L<br>(Brachydanio rerio)<br>96h LC50: = 1.3 mg/L<br>(Cyprinus carpio)<br>96h LC50: = 10.4 mg/L<br>(Cyprinus carpio) | - | 48h EC50: > 100 mg/L<br>(Daphnia magna)<br>48h EC50: = 1 mg/L<br>(Daphnia magna) |
| Poly(acrylic acid)<br>9003-01-4 | - | 96h LC50: = 580 mg/L<br>(Lepomis macrochirus) | - | - |
| Acrylic acid<br>79-10-7 | 96h EC50: = 0.17 mg/L<br>(Pseudokirchneriella subcapitata)<br>72h EC50: = 0.04 mg/L<br>(Desmodesmus subspicatus) | 96h LC50: = 222 mg/L<br>(Brachydanio rerio) | - | 48h EC50: = 95 mg/L<br>(Daphnia magna) |

**Persistence and degradability** No information available.

**Bioaccumulation**

**Component Information**

| Chemical name | Partition coefficient |
|---|---|
| Ethylene carbonate<br>96-49-1 | 0.11 |
| Poly(acrylic acid)<br>9003-01-4 | 0.27 |
| Acrylic acid<br>79-10-7 | 0.46 |

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

## 14. Transport information

**Note:** The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime

Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)
Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

**DOT** NOT REGULATED

| | |
|---|---|
| **Hazard Class** | N/A |
| **Reportable quantity (lbs)** | Copper: RQ (lb)= 5000.00, Nickel: RQ (lb)= 100.00, 1,3-Propane sultone: RQ (lb)= 10.00 |
| **Reportable quantity (lbs) (calculated)** | Copper: RQ (lb)= 50000.00, Nickel: RQ (lb)= 5000.00, 1,3-Propane sultone: RQ (lb)= 2000.00 |
| **Reportable Quantity (RQ)** | (Copper: RQ (kg)= 2270.00, Nickel: RQ (kg)= 45.40, 1,3-Propane sultone: RQ (kg)= 4.54) |
| **Reportable quantity (kg) (calculated)** | Copper: RQ (kg)= 22700.00, Nickel: RQ (kg)= 2270.00, 1,3-Propane sultone: RQ (kg)= 908.00 |
| **DOT Marine Pollutant** | PP |
| **Marine pollutant** | Copper |
| **Emergency Response Guide Number** | 147 |

**TDG** Not applicable

**MEX** Not applicable

**ICAO (air)**

| | |
|---|---|
| **UN number or ID number** | UN3480 |
| **UN proper shipping name** | LITHIUM ION BATTERIES |
| **Transport hazard class(es)** | 9 |
| **Description** | UN3480, LITHIUM ION BATTERIES, 9 |
| **Special Provisions** | A88, A99, A154, A183, A201, A213 |

**IATA**

| | |
|---|---|
| **UN number or ID number** | UN3480 |
| **UN proper shipping name** | LITHIUM ION BATTERIES |
| **Transport hazard class(es)** | 9 |
| **Environmental hazards** | Yes |
| **ERG Code** | 12FZ |
| **Description** | UN3480, LITHIUM ION BATTERIES, 9 |

**IMDG** Not applicable

| | |
|---|---|
| **Transport hazard class(es)** | N/A |
| **Marine pollutant indicator** | NP |
| **EmS-No.** | F-A, S-I |

## 15. Regulatory information

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

**International Regulations**

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

**International Inventories**

| | |
|---|---|
| **TSCA** | Contact supplier for inventory compliance status. |
| **DSL/NDSL** | Contact supplier for inventory compliance status. |
| **EINECS/ELINCS** | Contact supplier for inventory compliance status. |
| **ENCS** | Contact supplier for inventory compliance status. |
| **IECSC** | Contact supplier for inventory compliance status. |
| **KECI** | Contact supplier for inventory compliance status. |
| **PICCS** | Contact supplier for inventory compliance status. |
| **AIIC** | Contact supplier for inventory compliance status. |
| **NZIoC** | Contact supplier for inventory compliance status. |
| **TCSI** | Contact supplier for inventory compliance status. |

**Legend:**
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**DSL/NDSL** - 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 Chemicals Inventory
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances
**AIIC** - Australian Inventory of Industrial Chemicals
**NZIoC** - New Zealand Inventory of Chemicals
**TCSI** - Taiwan Chemical Substance Inventory

**US Federal Regulations**

**SARA 313**
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

| Chemical name | SARA 313 - Threshold Values % |
|---|---|
| Lithium Cobalt Oxide (CoLiO2) - 12190-79-3 | 0.1 |
| Aluminum - 7429-90-5 | 1.0 |
| Copper - 7440-50-8 | 1.0 |
| Nickel - 7440-02-0 | 0.1 |
| 1,3-Propane sultone - 1120-71-4 | 0.1 |

**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 |
|---|---|---|---|---|
| Copper<br>7440-50-8 | - | X | X | - |
| Nickel<br>7440-02-0 | - | X | X | - |

**CAA (Clean Air Act)**
This product contains the following substances which are regulated pollutants to the Clean Air Act (CAA).

| Chemical name | Hazardous air pollutants (HAPs) | Ozone-depleting substances (ODS) |
|---|---|---|
| Lithium Cobalt Oxide (CoLiO2)<br>12190-79-3 | Present | - |
| 1,3-Propane sultone<br>1120-71-4 | Present | - |
| Acrylic acid<br>79-10-7 | Present | - |

**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) |
|---|---|---|---|
| Copper<br>7440-50-8 | 5000 lb | - | RQ 5000 lb final RQ<br>RQ 2270 kg final RQ |
| Nickel<br>7440-02-0 | 100 lb | - | RQ 100 lb final RQ<br>RQ 45.4 kg final RQ |
| 1,3-Propane sultone<br>1120-71-4 | 10 lb | - | RQ 10 lb final RQ<br>RQ 4.54 kg final RQ |
| Acrylic acid<br>79-10-7 | 5000 lb | - | RQ 5000 lb final RQ<br>RQ 2270 kg final RQ |

**US State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals:.

| Chemical name | California Proposition 65 |
|---|---|
| Carbon black - 1333-86-4 | Carcinogen |
| Nickel - 7440-02-0 | Carcinogen |
| 1,3-Propane sultone - 1120-71-4 | Carcinogen |
| Titanium dioxide - 13463-67-7 | Carcinogen |

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

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|---|---|---|---|
| Lithium Cobalt Oxide (CoLiO2)<br>12190-79-3 | X | - | X |
| Graphite<br>7782-42-5 | X | X | X |
| Aluminum<br>7429-90-5 | X | X | X |
| Copper<br>7440-50-8 | X | X | X |
| Phosphate(1-), hexafluoro-, lithium<br>21324-40-3 | X | - | - |
| Diethyl carbonate<br>105-58-8 | X | X | X |
| Ethylene carbonate<br>96-49-1 | - | X | X |
| Carbon black<br>1333-86-4 | X | X | X |
| Nickel<br>7440-02-0 | X | X | X |
| 1,3-Propane sultone<br>1120-71-4 | X | X | X |
| Acrylic acid<br>79-10-7 | X | X | X |
| Titanium dioxide | X | X | X |

| | | | |
|---|---|---|---|
| 13463-67-7 | | | |
| Tin<br>7440-31-5 | X | X | X |

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

## 16. Other information

| | | | | |
|---|---|---|---|---|
| **NFPA** | **Health hazards** 1 | **Flammability** 0 | **Instability** 0 | **Special hazards** - |
| **HMIS** | **Health hazards** 0 | **Flammability** 0 | **Physical hazards** 0 | **Personal protection** X |

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

**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

| | |
|---|---|
| **Prepared By** | Product Stewardship<br>23 British American Blvd.<br>Latham, NY 12110<br>1-800-572-6501. |
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| **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**