# SAFETY DATA SHEET

**Revision date** 10-Nov-2022 **Revision Number** 1

## 1. Identification

**Product identifier**

**Product Name** E-Phos 660

**Other means of identification**

**Product Code(s)** EPI-0336C

**UN number or ID number** UN1760

**Synonyms** None

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

**Manufacturer Address**
Electrochemical Products Inc.
17000 West Lincoln Ave
New Berlin, WI 53151
Phone: 262-786-9330
E-mail: us-sales@epi.com
www.epi.com
Fax: 262-786-9403

**Emergency telephone number**

**Emergency Telephone** NCEC (#EPI-29003) +1 202 464 2554, +44 1865 407333

## 2. Hazard(s) identification

**Classification**

| | |
|---|---|
| Acute toxicity - Inhalation (Dusts/Mists) | Category 2 |
| Skin corrosion/irritation | Category 1 Sub-category B |
| Serious eye damage/eye irritation | Category 1 |
| Skin sensitization | Category 1 |
| Carcinogenicity | Category 1A |

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

**Label elements**

**Danger**

**Hazard statements**
Causes severe skin burns and eye damage
Toxic if inhaled
May cause an allergic skin reaction
May cause cancer

**Appearance** Clear liquid **Physical state** Liquid **Odor** Acidic

**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/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear respiratory protection
Wash face, hands and any exposed skin thoroughly after handling
Contaminated work clothing must not be allowed out of the workplace

**Precautionary Statements - Response**
IF exposed or if you feel unwell:
Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
Wash contaminated clothing before reuse
If skin irritation or rash occurs: Get medical advice/attention
IF INHALED: Remove person to fresh air and keep comfortable for breathing
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

**Precautionary Statements - Storage**
Store locked up
Store in a well-ventilated place. Keep container tightly closed

**Precautionary Statements - Disposal**
Dispose of contents/container to an approved waste disposal plant

**Unknown acute toxicity**

**Other information**
May be harmful if swallowed. Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

## 3. Composition/information on ingredients

**Substance**

Not applicable.

**Mixture**

| Chemical name | CAS No | Weight-% | Trade secret |
|---|---|---|---|
| Water | 7732-18-5 | 40-50 | * |
| Phosphoric acid | 7664-38-2 | 22-30 | * |
| Calcium nitrate.4H2O | 13477-34-4 | 20-25 | * |
| Zinc oxide | 1314-13-2 | 5-10 | * |
| Nitric acid | 7697-37-2 | 3-5 | * |
| Trade secret | Trade secret | 0.1-0.3 | * |
| Nickel, inorganic compounds | Trade secret | 0.1-0.5 | * |

*The exact percentage (concentration) of composition has been withheld as a trade secret.

## 4. First-aid measures

**Description of first aid measures**

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

**Inhalation** If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. 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 medical attention immediately if symptoms 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 advice/attention.

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

**Ingestion** Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get medical attention immediately if symptoms occur.

**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. Do not breathe vapor or mist. 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. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing.

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

**Symptoms** Coughing and/ or wheezing. Difficulty in breathing. Burning sensation. Itching. Rashes. Hives.

**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.

**Large Fire** CAUTION: Use of water spray when fighting fire may be inefficient.

**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 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** Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Do not breathe vapor or mist. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Attention! Corrosive material.

**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.

## 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 breathe vapor or mist. 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. Store locked up. Keep out of the reach of children. Protect from moisture. Store away from other materials.

## 8. Exposure controls/personal protection

**Control parameters**

**Exposure Limits**

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH |
|---|---|---|---|
| Phosphoric acid<br>7664-38-2 | STEL: 3 mg/m³<br>TWA: 1 mg/m³ | TWA: 1 mg/m³<br>(vacated) TWA: 1 mg/m³<br>(vacated) STEL: 3 mg/m³ | IDLH: 1000 mg/m³<br>TWA: 1 mg/m³<br>STEL: 3 mg/m³ |
| Zinc oxide<br>1314-13-2 | STEL: 10 mg/m³ respirable particulate matter<br>TWA: 2 mg/m³ respirable particulate matter | TWA: 5 mg/m³ fume<br>TWA: 15 mg/m³ total dust<br>TWA: 5 mg/m³ respirable fraction<br>(vacated) TWA: 5 mg/m³ fume<br>(vacated) TWA: 10 mg/m³ total dust<br>(vacated) TWA: 5 mg/m³ respirable fraction | IDLH: 500 mg/m³<br>Ceiling: 15 mg/m³ dust<br>TWA: 5 mg/m³ dust and fume<br>STEL: 10 mg/m³ fume |

| | | | |
|---|---|---|---|
| | | (vacated) STEL: 10 mg/m³ fume | |
| Nitric acid 7697-37-2 | STEL: 4 ppm TWA: 2 ppm | TWA: 2 ppm TWA: 5 mg/m³ (vacated) TWA: 2 ppm (vacated) TWA: 5 mg/m³ (vacated) STEL: 4 ppm (vacated) STEL: 10 mg/m³ | IDLH: 25 ppm TWA: 2 ppm TWA: 5 mg/m³ STEL: 4 ppm STEL: 10 mg/m³ |
| Nickel, inorganic compounds | TWA: 1.5 mg/m³ inhalable particulate matter | TWA: 1 mg/m³ (vacated) TWA: 1 mg/m³ | IDLH: 10 mg/m³ TWA: 0.015 mg/m³ |

**Biological occupational exposure limits**

| Chemical name | ACGIH |
|---|---|
| Nickel, inorganic compounds | 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** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

**General hygiene considerations** Avoid contact with skin, eyes or clothing. Do not breathe vapor or mist. 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.

## 9. Physical and chemical properties

**Information on basic physical and chemical properties**

**Physical state** Liquid
**Appearance** Clear liquid
**Color** blue/green
**Odor** Acidic

| Property | Values | Remarks • Method |
|---|---|---|
| **pH** | < 1 | None known |
| **Melting point / freezing point** | 0 °C / 32 °F | None known |
| **Boiling point / boiling range** | 100 °C / 212 °F | None known |
| **Flash point** | No data available | None known |
| **Relative density** | 1.4 - 1.55 | None known |
| **Water solubility** | Completely | None known |

**Other information**

**VOC Content (%)** 0

## 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** Excessive heat. 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**

**Inhalation** Specific test data for the substance or mixture is not available. Toxic if inhaled. (based on components). Corrosive by inhalation. 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. 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** Coughing and/ or wheezing. Difficulty in breathing. Redness. Burning. May cause blindness. Itching. Rashes. Hives.

**Acute toxicity**

**Numerical measures of toxicity**
No information available

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

| | |
|---|---|
| **ATEmix (oral)** | 4,498.70 mg/kg |
| **ATEmix (dermal)** | 5,948.60 mg/kg |
| **ATEmix (inhalation-dust/mist)** | 0.084 mg/l |
| **ATEmix (inhalation-vapor)** | 36.70 mg/l |

**Unknown acute toxicity**

**Component Information**

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Water<br>7732-18-5 | > 90 mL/kg ( Rat ) | - | - |
| Phosphoric acid<br>7664-38-2 | = 1530 mg/kg ( Rat ) | = 2740 mg/kg ( Rabbit ) | > 850 mg/m³ ( Rat ) 1 h |
| Calcium nitrate.4H2O<br>13477-34-4 | = 3900 mg/kg ( Rat ) | - | - |
| Zinc oxide<br>1314-13-2 | > 5000 mg/kg ( Rat ) | > 2000 mg/kg ( Rat ) | > 5700 mg/m³ ( Rat ) 4 h |
| Nitric acid<br>7697-37-2 | - | - | = 2500 ppm ( Rat ) 1 h |
| Trade secret | = 4950 mg/kg ( Rat )<br>= 6250 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | > 5.59 mg/L ( Rat ) 4.5 h |
| Nickel, inorganic compounds | > 9000 mg/kg ( Rat ) | - | > 10.2 mg/L ( Rat ) 1 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 burns.

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

**Respiratory or skin sensitization** May cause sensitization by skin contact.

**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 | ACGIH | IARC | NTP | OSHA |
|---|---|---|---|---|
| Calcium nitrate.4H2O<br>13477-34-4 | - | Group 2A | - | X |
| Nitric acid<br>7697-37-2 | - | Group 2A<br>Group 1 | - | X |
| Nickel, inorganic compounds | - | Group 2B | Reasonably Anticipated | X |

**Legend**

**IARC (International Agency for Research on Cancer)**
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans
**NTP (National Toxicology Program)**
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
**OSHA (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** No information available.

**Target organ effects** Respiratory system, Eyes, Skin, Teeth.

**Aspiration hazard** No information available.

**Other adverse effects** No information available.

**Interactive effects** No information available.

## 12. Ecological information

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

| Chemical name | Algae/aquatic plants | Fish | Toxicity to microorganisms | Crustacea |
|---|---|---|---|---|
| Calcium nitrate.4H2O<br>13477-34-4 | - | LC50: =10000mg/L (96h, Lepomis macrochirus) | - | - |
| Zinc oxide<br>1314-13-2 | - | LC50: =1.55mg/L (96h, Danio rerio) | - | - |
| Trade secret | - | LC50: =13500mg/L (96h, Pimephales promelas)<br>LC50: =1750mg/L (96h, Oncorhynchus mykiss)<br>LC50: =7090mg/L (96h, Cyprinus carpio) | - | - |
| Nickel, inorganic compounds | EC50: 0.174 - 0.311mg/L (96h, Pseudokirchneriella subcapitata)<br>EC50: =0.18mg/L (72h, Pseudokirchneriella subcapitata) | LC50: =1.3mg/L (96h, Cyprinus carpio)<br>LC50: =10.4mg/L (96h, Cyprinus carpio)<br>LC50: >100mg/L (96h, Brachydanio rerio) | - | EC50: =1mg/L (48h, Daphnia magna)<br>EC50: >100mg/L (48h, Daphnia magna) |

**Persistence and degradability** No information available.

**Bioaccumulation** There is no data for this product.

**Component Information**

| Chemical name | Partition coefficient |
|---|---|
| Phosphoric acid<br>7664-38-2 | -0.9 |
| Nitric acid<br>7697-37-2 | -2.3 |
| Trade secret | <-2.9 |

**Other adverse effects** No information available.

## 13. Disposal considerations

**Waste treatment 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.

## 14. Transport information

**DOT**

| | |
|---|---|
| **UN number or ID number** | UN1760 |
| **Proper shipping name** | Corrosive liquids, n.o.s. |
| **Transport hazard class(es)** | 8 |
| **Packing group** | II |
| **Reportable Quantity (RQ)** | (Phosphoric acid: RQ (kg)= 2270.00, Nitric acid: RQ (kg)= 454.00, Nickel Salt: RQ (kg)= 45.40) Phosphoric acid: RQ (lb)= 5000.00, Nitric acid: RQ (lb)= 1000.00, Nickel Salt: RQ (lb)= 100.00 |
| **DOT reportable quantity kg (calculated)** | Phosphoric acid: RQ (kg)= 9956.00, Nitric acid: RQ (kg)= 11046.00, Nickel Salt: RQ (kg)= 22700.00 |
| **DOT Reportable Quantity lbs. (calculated)** | Phosphoric acid: RQ (lb)= 21930.00, Nitric acid: RQ (lb)= 24331.00, Nickel Salt: RQ (lb)= 50000.00 |
| **Special Provisions** | B2, IB2, T11, TP2, TP27 |
| **DOT Marine Pollutant** | I |
| **Marine pollutant** | Zinc oxide, Nitric acid |
| **Description** | UN1760, Corrosive liquids, n.o.s. (Phosphoric acid, Nitric acid), 8, II, Marine pollutant (Zinc oxide, Nitric acid) |
| **Emergency Response Guide Number** | 154 |

**TDG**

| | |
|---|---|
| **UN number or ID number** | UN1760 |
| **UN proper shipping name** | Corrosive liquid, n.o.s. |
| **Transport hazard class(es)** | 8 |
| **Packing group** | II |
| **Special Provisions** | 16 |
| **Marine pollutant** | Zinc oxide, Nitric acid. |
| **Description** | UN1760, Corrosive liquid, n.o.s. (Phosphoric acid, Nitric acid), 8, II |

**MEX**

| | |
|---|---|
| **UN number or ID number** | UN1760 |
| **UN proper shipping name** | Corrosive liquid, n.o.s. |
| **Transport hazard class(es)** | 8 |
| **Packing group** | II |
| **Technical Name** | Phosphoric acid, Nitric acid |
| **Description** | UN1760, Corrosive liquid, n.o.s. (Phosphoric acid, Nitric acid), 8, II |
| **Special Provisions** | 274 |

**ICAO (air)**

| | |
|---|---|
| **UN number or ID number** | UN1760 |
| **UN proper shipping name** | Corrosive liquid, n.o.s. |
| **Transport hazard class(es)** | 8 |
| **Packing group** | II |
| **Description** | UN1760, Corrosive liquid, n.o.s. (Phosphoric acid, Nitric acid), 8, II |
| **Special Provisions** | A3 |

**IATA**

| | |
|---|---|
| **UN number or ID number** | UN1760 |
| **UN proper shipping name** | Corrosive liquid, n.o.s. |
| **Transport hazard class(es)** | 8 |
| **Packing group** | II |
| **Technical Name** | Phosphoric acid, Nitric acid |
| **Description** | UN1760, Corrosive liquid, n.o.s. (Phosphoric acid, Nitric acid), 8, II |
| **Special Provisions** | A3, A803 |
| **ERG Code** | 8L |

**IMDG**

| | |
|---|---|
| **UN number or ID number** | UN1760 |
| **UN proper shipping name** | Corrosive liquid, n.o.s. |

| | |
|---|---|
| **Transport hazard class(es)** | 8 |
| **Packing group** | II |
| **EmS-No** | F-A, S-B |
| **Special Provisions** | 274 |
| **Marine pollutant** | P |
| **Marine Pollutant** | Zinc oxide |
| **Description** | UN1760, Corrosive liquid, n.o.s. (Phosphoric acid, Nitric acid, Zinc oxide), 8, II, Marine pollutant |

**RID**

| | |
|---|---|
| **UN number or ID number** | UN1760 |
| **UN proper shipping name** | Corrosive liquid, n.o.s. |
| **Transport hazard class(es)** | 8 |
| **Packing group** | II |
| **Classification code** | C9 |
| **Special Provisions** | 274 |
| **Description** | UN1760, Corrosive liquid, n.o.s. (Phosphoric acid, Nitric acid), 8, II, Environmentally Hazardous |

**ADR**

| | |
|---|---|
| **UN number or ID number** | UN1760 |
| **UN proper shipping name** | Corrosive liquid, n.o.s. |
| **Transport hazard class(es)** | 8 |
| **Packing group** | II |
| **Classification code** | C9 |
| **Tunnel restriction code** | (E) |
| **Special Provisions** | 274 |
| **Description** | UN1760, Corrosive liquid, n.o.s. (Phosphoric acid, Nitric acid), 8, II, (E), Environmentally Hazardous |

**ADN**

| | |
|---|---|
| **UN number or ID number** | UN1760 |
| **UN proper shipping name** | Corrosive liquid, n.o.s. |
| **Transport hazard class(es)** | 8 |
| **Packing group** | II |
| **Classification code** | C9 |
| **Special Provisions** | 274 |
| **Description** | UN1760, Corrosive liquid, n.o.s. (Phosphoric acid, Nitric acid), 8, II, Environmentally Hazardous |
| **Equipment Requirements** | PP, EP |

## 15. Regulatory information

**International Inventories**

**TSCA** Complies

| Chemical name | CAS No | US TSCA Inventory listing | US TSCA inactive/active designation |
|---|---|---|---|
| Water | 7732-18-5 | Present | Active |
| Phosphoric acid | 7664-38-2 | Present | Active |
| Calcium nitrate.4H2O | 13477-34-4 | Present | Active |
| Zinc oxide | 1314-13-2 | Present | Active |
| Nitric acid | 7697-37-2 | Present | Active |
| Trade secret | - | Present | Active |
| Nickel, inorganic compounds | - | Present | Active |

**DSL/NDSL** Does not comply
**EINECS/ELINCS** Does not comply

| | |
|---|---|
| **ENCS** | Complies |
| **IECSC** | Complies |
| **KECL** | Does not comply |
| **PICCS** | Complies |
| **AICS** | Complies |

**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 and Evaluated Chemical Substances
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances
**AICS** - Australian Inventory of Chemical Substances

**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 does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**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) |
|---|---|---|---|
| Phosphoric acid<br>7664-38-2 | 5000 lb | - | RQ 5000 lb final RQ<br>RQ 2270 kg final RQ |
| Nitric acid<br>7697-37-2 | 1000 lb | 1000 lb | RQ 1000 lb final RQ<br>RQ 454 kg final RQ |
| Nickel, inorganic compounds | 100 lb | - | RQ 100 lb final RQ<br>RQ 45.4 kg final RQ |

**US State Regulations**

**California Proposition 65**
This product contains the following Proposition 65 chemicals:.

| Chemical name | California Proposition 65 |
|---|---|
| Nickel, inorganic compounds - | Carcinogen |

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

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|---|---|---|---|
| Water<br>7732-18-5 | - | - | X |
| Phosphoric acid<br>7664-38-2 | X | - | X |
| Calcium nitrate.4H2O<br>13477-34-4 | X | - | - |

| | | | |
|---|---|---|---|
| Zinc oxide<br>1314-13-2 | X | - | X |
| Nitric acid<br>7697-37-2 | X | - | X |
| Trade secret | X | - | X |
| Nickel, inorganic compounds | X | - | X |

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

## 16. Other information

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **NFPA** | **Health hazards** 4 | **Flammability** 0 | **Instability** 0 | **Special hazards** - |
| **HMIS** | **Health hazards** 4 * | **Flammability** 0 | **Physical hazards** 0 | **Personal protection** X |

*Chronic Hazard Star Legend* * = Chronic Health Hazard

**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)
Japan GHS Classification
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

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**End of Safety Data Sheet**