

SAFETY DATA SHEET



Revision date 01-Apr-2022

Revision Number 1

1. Identification

Product identifier

Product Name E-Phos 661

Other means of identification

Product Code(s) EPI-0420C

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 (Vapors) | Category 3 |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 1 |
| Skin corrosion/irritation | Category 1 Sub-category A |
| Serious eye damage/eye irritation | Category 1 |
| Carcinogenicity | Category 1A |

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Danger

Hazard statements

Fatal if inhaled
Toxic if inhaled
Causes severe skin burns and eye damage
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
 Use only outdoors or in a well-ventilated area
 Do not breathe dust/fume/gas/mist/vapors/spray
 Wear respiratory protection
 Wash face, hands and any exposed skin thoroughly after handling

Precautionary Statements - Response

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
 Immediately call a POISON CENTER or doctor
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
 Wash contaminated clothing before reuse
 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 Immediately call a POISON CENTER or doctor
 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**

Very toxic to aquatic life. Very 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 | 41-45 | * |
| Trizinc diphosphate | 7779-90-0 | 23-27 | * |
| Nitric acid | 7697-37-2 | 23-27 | * |
| Phosphoric acid | 7664-38-2 | 5-8 | * |

*The exact percentage (concentration) 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 | 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 immediate medical advice/attention. Immediate medical attention is required. |
| 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. |
| 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 immediate medical advice/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. 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.

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.

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. |
| 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 |
|------------------------------|---|---|---|
| Nitric acid 7697-37-2 | STEL: 4 ppm TWA: 2 ppm | TWA: 2 ppm TWA: 5 mg/m ³ (vacated) TWA: 2 ppm (vacated) TWA: 5 mg/m ³ (vacated) STEL: 4 ppm (vacated) STEL: 10 mg/m ³ | IDLH: 25 ppm TWA: 2 ppm TWA: 5 mg/m ³ STEL: 4 ppm STEL: 10 mg/m ³ |
| Phosphoric acid 7664-38-2 | STEL: 3 mg/m ³ TWA: 1 mg/m ³ | TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³ (vacated) STEL: 3 mg/m ³ | IDLH: 1000 mg/m ³ TWA: 1 mg/m ³ STEL: 3 mg/m ³ |

Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

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 | amber |
| Odor | Acidic |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|---------------------------------------|-------------------|-------------------------|
| pH | 0 - 2 | 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 | 1.57 - 1.63 | 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. Fatal 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. (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.

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.

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) | 7,832.80 mg/kg |
| ATEmix (dermal) | 19,571.40 mg/kg |
| ATEmix (inhalation-dust/mist) | 0.015 mg/l |
| ATEmix (inhalation-vapor) | 8.76 mg/l |

Unknown acute toxicity

Component Information

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|----------------------------------|----------------------|-------------------------|-------------------------------------|
| Water 7732-18-5 | > 90 mL/kg (Rat) | - | - |
| Trizinc diphosphate 7779-90-0 | > 5000 mg/kg (Rat) | - | - |
| Nitric acid 7697-37-2 | - | - | = 2500 ppm (Rat) 1 h |
| Phosphoric acid 7664-38-2 | = 1530 mg/kg (Rat) | = 2740 mg/kg (Rabbit) | > 850 mg/m ³ (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 No information available.

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 |
|--------------------------|-------|---------------------|-----|------|
| Nitric acid 7697-37-2 | - | Group 2A Group 1 | - | X |

Legend

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

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 Very toxic to aquatic life with long lasting effects.

Persistence and degradability No information available.

Bioaccumulation There is no data for this product.

Component Information

| Chemical name | Partition coefficient |
|--------------------------|-----------------------|
| Nitric acid 7697-37-2 | -2.3 |

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) | (Nitric acid: RQ (kg)= 454.00) Nitric acid: RQ (lb)= 1000.00 |
| DOT reportable quantity kg (calculated) | Nitric acid: RQ (kg)= 1816.00 |
| DOT Reportable Quantity lbs. (calculated) | Nitric acid: RQ (lb)= 4000.00 |
| Special Provisions | B2, IB2, T11, TP2, TP27 |
| DOT Marine Pollutant | I |
| Marine pollutant | Trizinc diphosphate |
| Description | UN1760, Corrosive liquids, n.o.s. (Nitric acid, Phosphoric acid), 8, II, Marine pollutant (Trizinc diphosphate) |
| 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 | Trizinc diphosphate. |
| Description | UN1760, Corrosive liquid, n.o.s. (Nitric acid, Phosphoric 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 | Nitric acid, Phosphoric acid |
| Description | UN1760, Corrosive liquid, n.o.s. (Nitric acid, Phosphoric 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. (Nitric acid, Phosphoric 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 | Nitric acid, Phosphoric acid |
| Description | UN1760, Corrosive liquid, n.o.s. (Nitric acid, Phosphoric 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 | Trizinc diphosphate |
| Description | UN1760, Corrosive liquid, n.o.s. (Nitric acid, Phosphoric acid, Trizinc diphosphate), 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. (Nitric acid, Phosphoric 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. (Nitric acid, Phosphoric 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. (Nitric acid, Phosphoric 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 |
| Trizinc diphosphate | 7779-90-0 | Present | Active |
| Nitric acid | 7697-37-2 | Present | Active |
| Phosphoric acid | 7664-38-2 | Present | Active |

| | |
|----------------------|----------|
| DSL/NDSL | Complies |
| EINECS/ELINCS | Complies |
| ENCS | Complies |
| IECSC | Complies |
| KECL | Complies |
| 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) |
|------------------------------|--------------------------|------------------------------------|--|
| Nitric acid 7697-37-2 | 1000 lb | 1000 lb | RQ 1000 lb final RQ RQ 454 kg final RQ |
| Phosphoric acid 7664-38-2 | 5000 lb | - | RQ 5000 lb final RQ RQ 2270 kg final RQ |

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|----------------------------------|------------|---------------|--------------|
| Water 7732-18-5 | - | - | X |
| Trizinc diphosphate 7779-90-0 | X | - | X |
| Nitric acid 7697-37-2 | X | - | X |
| Phosphoric acid 7664-38-2 | 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 |
| <i>Chronic Hazard Star Legend</i> | <i>* = Chronic Health Hazard</i> | | | |

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

Revision date 01-Apr-2022

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