

SECTION 1. PRODUCT IDENTIFICATION

1.1 TRADE NAME (AS LABELED):**VOLTIX™ PHOSPHORIC ACID 75-85%**SYNONYMS:

Orthophosphoric Acid

CAS#:

7664-38-2

EC NUMBER:

231-633-2

REACH REGISTRATION #:

01-2119485924-24-0037

1.2 PRODUCT USE:

For Lithium Iron Phosphate (LFP) and Lithium Manganese Iron Phosphate (LMFP) cathodes

1.3 MANUFACTURER'S NAME:**Innophos, Inc**ADDRESS:

259 Prospect Plains Rd. Bldg A, Cranbury, NJ 08512

BUSINESS PHONE:

609-495-2495

WEB SITE INFORMATION:www.innophos.comRESPONSIBLE PARTY - EU

Labcorp Early Development Services GmbH

Kesselfeld 29

48163 Münster

Germany

Tel: + 49-251-32749000

Email: or-eu@labcorp.com**1.4 EMERGENCY PHONE NUMBERS:**

800-424-9300 (CHEMTREC U.S. and Canada – 24 Hrs)

+1 703-527-3887 (CHEMTREC outside the USA and Canada – 24 Hrs)

01-800-00214 00 (SETIQ in Mexico – 24 hrs)

DATE OF PRIOR REVISION:

New

DATE OF LATEST REVISION:

July 11, 2024

SECTION 2. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This product is a colorless liquid with no odor.**Health Hazards:** May cause severe skin burns and eye damage. May cause respiratory irritation.**Flammability Hazards:** This product is not flammable.**Reactivity Hazards:** Corrosive.**Environmental Hazards:** The environmental effects of this product have not been investigated, however release may cause long term adverse environmental effects.**2.1 EU LABELING AND CLASSIFICATION:**

This product does meet the definition of a hazardous substance or preparation as defined by 29 CFR 1910. 1200 and regulation (EU) No. 2020/878 and regulation (EC) No. 1272/2008.

EU HAZARD CLASSIFICATION OF INGREDIENTS:**Index Number:**

EC# 231-633-2 is listed in Annex VI: Index #015-011-00-6

Substances not listed either individually or in group entries must be self-classified.

Component(s) Contributing to Classification(s)

Phosphoric Acid

2.2 LABEL ELEMENTS

GHS Hazard Symbol(s)

Signal Word: **Danger!**

GHS Hazard Classification(s):

Corrosive to Metals Category 1
 Acute Toxicity Category 4 (Oral)
 Skin Corrosion Category 1B
 Eye Damage Category 1

Hazard Statement(s):

H290 May be corrosive to metals
 H302 Harmful if swallowed
 H314 Causes severe burns and eye damage

Prevention Statement(s):

P234 Keep only in original container.
 P260 Do not breathe dusts or mists.
 P264 Wash thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P280 Wear protective gloves and eye/face protection.

Response Statement(s):

P390 Absorb spillage to prevent material damage.
 P301+P330+P331 IF SWALLOWED: Rinse mouth. Do not induce vomiting.
 P321 Specific treatment (see first aid section on this label).
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P363 Wash contaminated clothing before reuse.
 P310 Immediately call a POISON CENTER/doctor.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Storage Statement(s):

P406 Store in corrosive resistant container with a resistant inner liner.
 P405 Store locked up.

Disposal Statement(s):

P501 Dispose of contents/container in accordance with local/ regional/ national/ international regulations.

2.3 OTHER HAZARDS:

Endocrine Disruptor Information: This product does not contain chemicals on the Candidate List of substances of very high concern for Authorisation.

SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Hazardous Ingredients:	WT%	CAS#	EINECS #	Hazard Classification
Phosphoric Acid	75-85%	7664-38-2	231-633-2	Corr. To Metals 1, Acute Tox 4 (Oral), Skin Corr.1B, Eye Dam. 1
Balance of other ingredients are non-hazardous or below the applicable cut-off limit.				

SECTION 4. FIRST-AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. Seek medical attention.

SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder before re-use.

INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention.

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or SDS with the victim to the health professional.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing eye problems may be aggravated by prolonged contact.

4.2 SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

Contact with eyes and skin may cause burns. Inhalation may cause upper respiratory irritation.

4.3 RECOMMENDATIONS TO PHYSICIANS:

Treat symptoms and eliminate overexposure.

SECTION 5. FIRE-FIGHTING MEASURES**5.1 FIRE EXTINGUISHING MATERIALS:**

Use fire extinguishing methods below:

Water Spray:	Yes	Carbon Dioxide:	Yes
Foam:	Yes	Dry Chemical:	Yes
Halon:	Yes	Other:	Any "A" Class

5.2 UNUSUAL FIRE AND EXPLOSION HAZARDS:

None expected

Explosion Sensitivity to Mechanical Impact: No

Explosion Sensitivity to Static Discharge: No

5.3 SPECIAL FIRE-FIGHTING PROCEDURES:

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

SECTION 6. ACCIDENTAL RELEASE MEASURES**6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:**

Avoid breathing mist / spray. Provide adequate ventilation. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas.

6.2 ENVIRONMENTAL PRECAUTIONS:

Not applicable.

6.3 SPILL AND LEAK RESPONSE:

Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Prevent entry into sewers, water courses, basement or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor.

SECTION 7. HANDLING and STORAGE**7.1 PRECAUTIONS FOR SAFE HANDLING:**

To prevent skin and eye contact under the foreseeable conditions of use, wear appropriate protective clothing and safety eyewear. When handling, do not eat, drink, or smoke. Wash thoroughly after handling. Handle in a well-ventilated work area.

7.2 STORAGE AND HANDLING PRACTICES:

Keep away from incompatible materials. Eliminate all ignition sources. Keep in a dry, well-ventilated area in closed containers. Protect containers from physical damage. Keep container tightly closed and sealed until ready for use. Store in accordance with local regulations.

7.3 SPECIFIC USES:

See section 1.2.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**8.1 EXPOSURE PARAMETERS:**

Chemical Name	CAS#	ACGIH TLV	OSHA TWA	EH40 TWA
Phosphoric Acid	7664-38-2	1 mg/m ³	1 mg/m ³	1 mg/m ³

8.2 EXPOSURE CONTROLS:

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Not required for properly ventilated areas. Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the

U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses or goggles are required. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian Standards, and the European Standard EN166, Australian Standards, or relevant Japanese Standards.

HAND PROTECTION: Chemical resistant gloves are required to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138, the European Standard DIN EN 374, the appropriate Standards of Canada, Australian Standards, or relevant Japanese Standards.

BODY PROTECTION: Use body protect appropriate to task being performed. If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

SECTION 9. PHYSICAL and CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE (Physical State) and COLOR: This product is a colorless viscous liquid.

ODOR: Odorless

ODOR THRESHOLD: Not Available

pH: <1

MELTING/FREEZING POINT: 75% -17.5 °C (0.5 °F)
85% 21.1 °C (70.0 °F)

BOILING POINT: 75% 135 °C (275 °F)
85% 158 °C (316 °F)

FLASH POINT: Not Available

FLAMMABILITY (SOLID, GAS): Not Applicable

UPPER/LOWER FLAMMABILITY OR EXPLOSION LIMITS: Not Available

VAPOR PRESSURE (mm Hg @ 20°C (68°F)): 75% (mm Hg @ 20°C (68 °F): 5.7 mmHg @ 20 °C (68 °F)
85% (mm Hg @ 20°C (68 °F): 2.2 mmHg @ 20 °C (68 °F)

VAPOR DENSITY: Not Available

RELATIVE DENSITY: Not Available

SPECIFIC GRAVITY: 75% 1.57 @25 °C
85% 1.69 @25 °C

SOLUBILITY IN WATER: Miscible

WEIGHT PER GALLON: Not Available

PARTITION COEFFICIENT (n-octanol/water): Not Available

AUTO-IGNITION TEMPERATURE: Not Available

DECOMPOSITION TEMPERATURE: Not Available

VISCOSITY: Not Available

9.2.1 INFORMATION WITH REGARD TO PHYSICAL HAZARD CLASSES

EXPLOSIVES: Not Available

FLAMMABLE GASES: Not Available

AEROSOLS: Not Available

OXIDISING GASES: Not Available

GASES UNDER PRESSURE: Not Available

FLAMMABLE LIQUIDS: Not Available

FLAMMABLE SOLIDS: Not Available

SELF-REACTIVE SUBSTANCES AND MIXTURES: Not Available

PYROPHORIC LIQUIDS: Not Available

PYROPHORIC SOLIDS: Not Available

SELF-HEATING SUBSTANCES AND MIXTURES: Not Available

SUBSTANCES AND MIXTURES, WHICH EMIT FLAMMABLE GASES IN CONTACT WITH WATER: Not Available

OXIDISING LIQUID: Not Available

OXIDISING SOLID: Not Available

ORGANIC PEROXIDES: Not Available

CORROSIVE TO METALS: Not Available

DESENSITISED EXPLOSIVES: Not Available

GASES UNDER PRESSURE: Not Available

9.2.2 OTHER SAFETY CHARACTERISTICS

MECHANICAL SENSITIVITY: Not Available

SELF-ACCELERATING POLYMERISATION TEMPERATURE: Not Available
FORMATION OF EXPLOSIBLE DUST/AIR MIXTURES: Not Available
ACID/ALKALINE RESERVE: Not Available
EVAPORATION RATE: Not Available
MISCIBILITY: Not Available
CONDUCTIVITY: Not Available
CORROSIVENESS: Not Available
GAS GROUP: Not Available
REDOX POTENTIAL: Not Available
RADICAL FORMATION POTENTIAL: Not Available
PHOTOCATALYTIC PROPERTIES: Not Available

SECTION 10. STABILITY and REACTIVITY

10.1 REACTIVITY:

No dangerous reaction known under conditions of normal use.

10.2 STABILITY:

Stable.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS:

Hazardous reactions will not occur.

10.4 CONDITIONS TO AVOID:

Contact with incompatibles.

10.5 MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:

Strong caustics, solutions containing bleach or ammonia, and most metals.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS:

Oxides of phosphorus.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

TOXICITY DATA:

Phosphoric Acid CAS# 7664-38-2

Oral LD50	1,530 mg/kg	Rat
Skin LD50	2,740 mg/kg	Rabbit

Acute toxicity	Acute Toxicity Category 4 (Oral)
Skin corrosion / irritation	Skin Corrosion Category 1
Serious eye damage / irritation	Eye Damage Category 1
Respiratory or skin sensitization	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met
Carcinogenicity	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	Based on available data, the classification criteria are not met
STOT-repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	Based on available data, the classification criteria are not met

ROUTE OF EXPOSURE: The most significant routes of overexposure for this product are by contact with eyes, and skin and respiratory system. The symptoms of overexposure are described in the following paragraphs.

ACUTE:

INHALATION: May cause upper respiratory tract irritation.

CONTACT WITH SKIN: Corrosive, exposure to skin may cause burns.

EYE CONTACT: Corrosive, will cause serious eye damage.

INGESTION: May cause burns to mouth and esophagus, abdominal pain, nausea, vomiting.

CHRONIC: May cause Bronchial irritation with chronic cough.

TARGET ORGANS: **Acute:** Skin, Eyes, and Respiratory System **Chronic:** Respiratory System

SUSPECTED CANCER AGENT: Ingredients within this product are not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, or CAL/OSHA and therefore are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: This product may be irritating to the skin, eyes and respiratory system.

SENSITIZATION TO THE PRODUCT: This product is not expected to cause skin sensitization.

REPRODUCTIVE TOXICITY INFORMATION: No specific information is available concerning the effects of this product and its components on the human reproductive system.

SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE: Data not sufficient for classification.

SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE: Bronchial irritation with chronic cough.

ASPIRATION HAZARD: None

11.2 INFORMATION ON OTHER HAZARD CLASSES WHICH RELATES TO ENDOCRINE DISRUPTING PROPERTIES:

No specific data available for this product.

SECTION 12. ECOLOGICAL INFORMATION

12.1 TOXICITY:

Phosphoric Acid CAS# 7664-38-2

LC50 – 96hr 138 mg/L Mosquitofish

12.2 PERSISTENCE AND DEGRADABILITY:

No specific data available on this product.

12.3 BIOACCUMULATIVE POTENTIAL:

No specific data available on this product.

12.4 MOBILITY IN SOIL:

No specific data available on this product.

12.5 RESULTS OF PBT AND vPvB ASSESSMENT:

No specific data available on this product.

12.6 ENDOCRINE DISRUPTING PROPERTIES:

No specific data available on this product.

12.7 OTHER ADVERSE EFFECTS:

No specific data available on this product.

12.8 WATER ENDANGERMENT CLASS:

May be water endangering in accordance with EU Guideline 91/155-EWG. Do not allow product to reach ground water, water course or sewage system. At present there are no ecotoxicological assessments for this product.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS:

Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

13.2 EU WASTE CODE:

Not determined

SECTION 14. TRANSPORTATION INFORMATION

US DOT, IATA, IMO, ADR:

14.1 U.S. DEPARTMENT OF TRANSPORTATION (DOT) SHIPPING REGULATIONS: This product is classified (per 49 CFR 172.101) by the U.S. Department of Transportation, as follows.

UN IDENTIFICATION NUMBER: UN1805
PROPER SHIPPING NAME: Phosphoric Acid Solution
HAZARD CLASS NUMBER and DESCRIPTION: Class 8 Corrosive Liquid
PACKING GROUP: III
DOT LABEL(S) REQUIRED: Corrosive Liquid
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER: 154
RQ QUANTITY: 5000 LB

MARINE POLLUTANT: The components of this product are not designated by the Department of Transportation to be Marine Pollutants (49 CFR 172.101, Appendix B).

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): This product is considered as dangerous goods.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO):

UN IDENTIFICATION NUMBER: UN1805
PROPER SHIPPING NAME: Phosphoric Acid Solution
HAZARD CLASS NUMBER and DESCRIPTION: Class 8 Corrosive Liquid
PACKING GROUP: III

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This product is considered by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS SPECIFIC FOR THE SUBSTANCE OR MIXTURE:

UNITED STATES REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: The components of this product are not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA 311/312: Acute Health

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for the components of this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lbs (4,540 kg) therefore applies, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Phosphoric Acid - 5000 lb

U.S. TSCA INVENTORY STATUS: The components of this product are listed on the TSCA Inventory or are exempted from listing.

OTHER U.S. FEDERAL REGULATIONS: None known

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): This product does not contain ingredients on the Proposition 65 Lists.

15.2 CANADIAN REGULATIONS:

CANADIAN DSL/NDSL INVENTORY STATUS: Components are DSL Listed, NDSL Listed and/or are exempt from listing

OTHER CANADIAN REGULATIONS: Not applicable.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: Classified per WHMIS 2015 Hazardous Product Regulations.

15.3 EUROPEAN ECONOMIC COMMUNITY INFORMATION:

This product does meet the definition of a hazardous substance or preparation as defined by the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives.

See Section 2 for Details

CHEMICAL SAFETY ASSESSMENT:

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

15.4 AUSTRALIAN INFORMATION FOR PRODUCT: Components of this product are not listed on the International Chemical Inventory list.

15.5 JAPANESE INFORMATION FOR PRODUCT:

JAPAN INDUSTRIAL SAFETY AND HEALTH LAW: This product has been classified per the Japan Industrial Safety and Health Law. See Section 2 for the GHS Classification.

15.6 INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac: Listed

Australian Inventory of Chemical Substances (AICS): Listed

Korean Existing Chemicals List (ECL): Listed

Japanese Existing National Inventory of Chemical Substances (ENCS): Listed

Philippines Inventory of Chemicals and Chemical Substances (PICCS): Listed

Swiss Giftliste List of Toxic Substances: Listed

U.S. TSCA: Listed

Mexican Inventory of chemical substances (NOM 010 STPS 2015): Listed

SECTION 16. OTHER INFORMATION

HMIS Rating (Scale 0-4)

Health hazard: 3

Flammability: 0

Physical Hazard: 0

NFPA Rating (Scale 0-4)

Health hazard: 3

Flammability: 0

Physical Hazard: 0

Abbreviations and acronyms

ACGIH

American Conference of Governmental Industrial Hygienists

CFR

Code of Federal Regulations

DOT

Federal Department of Transportation

GHS

The Globally Harmonized System of Classification and Labelling of Chemicals

HMIS

Hazardous Material Identification System

HCS

Hazard Communication Standard

IARC	<i>International Agency for Research on Cancer</i>
IATA	<i>The International Air Transport Association</i>
ICAO	<i>The International Civil Aviation Organization</i>
IMDG	<i>International Maritime Dangerous Goods</i>
IMO	<i>International Maritime Organization</i>
LD50/LC50	<i>Lethal Concentration/Dose, 50 percent</i>
NFPA	<i>National Fire Protection Association</i>
NIOSH	<i>National Institute for Occupational Safety and Health</i>
NTP	<i>National Toxicology Program</i>
OSHA	<i>Occupational Safety and Health</i>
PEL	<i>Permissible Exposure Limit</i>
SARA	<i>Superfund Amendments and Reauthorization Act</i>
TLV	<i>ACGIH Threshold Limit Value</i>
TWA	<i>Time-Weighted Average</i>

PREPARED BY: Chris Eigbrett

MSDS to GHS Compliance
www.MSDStoGHS.com

The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of the need that information is current, applicable and suited to the circumstances of use. Innophos assumes no responsibility for injury to vendee or third party person proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, Innophos assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed.

REVISION HISTORY

July 11, 2024 - Document creation

END OF SDS SHEET