

Safety Data Sheet

Issue Date: 04-May-2015

Revision Date: 29-Apr-2016

Version 2

1. IDENTIFICATION

Product Identifier

Product Name Oxi-Phos

Other means of identification

SDS # FFN: 00468

Recommended use of the chemical and restrictions on use

Recommended Use Plant Nutrients.

Details of the supplier of the safety data sheet

Supplier Address

Verdesian Life Sciences, U.S., LLC.
1001 Winstead Drive, Suite 480
Cary, NC 27513

Emergency Telephone Number

Company Phone Number Business Phone: (800) 868-6446
Fax Phone: (919) 535-3652
Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance Brown liquid

Physical State Liquid

Classification

Hazards Not Otherwise Classified (HNOC)

May be harmful if swallowed

Other Hazards

Toxic to aquatic life with long lasting effects

Unknown Acute Toxicity

2.25% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Please also refer to subsequent sections of this SDS for additional information regarding the components of this product.

| Chemical Name | CAS No | Weight-% |
|--------------------|------------|----------|
| Ammonium hydroxide | 1336-21-6 | 10-20 |
| Phosphoric Acid | 7664-38-2 | 10-20 |
| Iron HEDTA | 17084-02-5 | 1-5 |

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

| | |
|-----------------------|--|
| General Advice | Provide this SDS to medical personnel for treatment. |
| Eye Contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Seek immediate medical attention/advice. |
| Skin Contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician. |
| Inhalation | Remove exposed individual(s) to fresh air for 20 minutes. Consult a physician / poison center if individual's condition declines or if symptoms persist. |
| Ingestion | Do not induce vomiting. Induce vomiting only if advised by medical personnel. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. |

Most important symptoms and effects

| | |
|-----------------|---|
| Symptoms | May cause discomfort if swallowed. May cause skin and eye irritation. Will cause gastrointestinal tract irritation. |
|-----------------|---|

Indication of any immediate medical attention and special treatment needed

| | |
|---------------------------|------------------------|
| Notes to Physician | 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 Not determined.

Specific Hazards Arising from the Chemical

None.

Hazardous Combustion Products Nitrogen oxides (NO_x).

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

| | |
|----------------------------------|---|
| Personal Precautions | Use personal protective equipment as required. |
| Environmental Precautions | See Section 12 for additional Ecological Information. |

Methods and material for containment and cleaning up

| | |
|--------------------------------|---|
| Methods for Containment | Prevent further leakage or spillage if safe to do so. Soak up and contain spill with an absorbent material. |
|--------------------------------|---|

| | |
|--|--|
| Methods for Clean-Up | Sweep up and shovel into suitable containers for disposal. Discard any product, residue, disposable container or liner in full compliance with federal, state, and local regulations. For waste disposal, see section 13 of the SDS. |
| Prevention of Secondary Hazards | Spills may present a slipping hazard. |

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. Use personal protection recommended in Section 8. Wash face, hands, and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. |
|--------------------------------|---|

Conditions for safe storage, including any incompatibilities

| | |
|-------------------------------|--|
| Storage Conditions | Keep container tightly closed and store in a cool, dry and well-ventilated place. Protect from direct sunlight. Keep out of the reach of children. |
| Incompatible Materials | Strong oxidizing agents. Bases. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|------------------------------|---|---|---|
| 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 |
| Iron HEDTA 17084-02-5 | TWA: 1 mg/m ³ Fe | (vacated) TWA: 1 mg/m ³ Fe | TWA: 1 mg/m ³ Fe |

Appropriate engineering controls

| | |
|-----------------------------|--|
| Engineering Controls | Apply technical measures to comply with the occupational exposure limits. Eyewash stations. Showers. |
|-----------------------------|--|

Individual protection measures, such as personal protective equipment

| | |
|---------------------------------|---|
| Eye/Face Protection | Safety goggles. |
| Skin and Body Protection | Wear suitable protective clothing. |
| Respiratory Protection | In case of inadequate ventilation wear respiratory protection. Wear an appropriate NIOSH/MSHA approved respirator if ventilation is inadequate. |

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | | | |
|-----------------------|--------------|-----------------------|----------------|
| Physical State | Liquid | Odor | Not determined |
| Appearance | Brown liquid | Odor Threshold | Not determined |
| Color | Dark brown | | |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|------------------------------|------------------|-------------------------|
| pH | 5.85 | |
| Melting Point/Freezing Point | Not applicable | |
| Boiling Point/Boiling Range | 100 °C / 212 °F | |
| Flash Point | Not applicable | |
| Evaporation Rate | Not applicable | |
| Flammability (Solid, Gas) | Not determined | |
| Upper Flammability Limits | Not determined | |
| Lower Flammability Limit | Not determined | |
| Vapor Pressure | Not determined | |
| Vapor Density | Not determined | |
| Specific Gravity | 1.2 | |
| Water Solubility | Soluble in water | |
| Solubility in other solvents | Not determined | |
| Partition Coefficient | Not determined | |
| Auto-ignition Temperature | Not determined | |
| Decomposition Temperature | Not determined | |
| Kinematic Viscosity | Not determined | |
| Dynamic Viscosity | Not determined | |
| Explosive Properties | Not determined | |
| Oxidizing Properties | Not determined | |

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to Avoid

Keep out of reach of children.

Incompatible Materials

Strong oxidizing agents. Bases.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

| | |
|---------------------|--|
| Eye Contact | May cause temporary irritation on eye contact. |
| Skin Contact | Avoid contact with skin. |
| Inhalation | Avoid breathing vapors or mists. |
| Ingestion | May cause discomfort if swallowed. |

Component Information

| Chemical Name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|--------------------------------------|----------------------|-------------------------|-------------------------------------|
| Mono-ammonium Phosphate 7722-76-1 | = 5750 mg/kg (Rat) | > 7940 mg/kg (Rabbit) | - |
| Ammonium hydroxide 1336-21-6 | = 350 mg/kg (Rat) | - | - |
| Phosphoric Acid 7664-38-2 | = 1530 mg/kg (Rat) | = 2740 mg/kg (Rabbit) | > 850 mg/m ³ (Rat) 1 h |
| Urea 57-13-6 | = 8471 mg/kg (Rat) | - | - |

Information on physical, chemical and toxicological effects**Symptoms**

Please see section 4 of this SDS for symptoms.

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

Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical measures of toxicity

Not determined

Unknown Acute Toxicity

2.25% of the mixture consists of ingredient(s) of unknown toxicity.

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Toxic to aquatic life with long lasting effects.

Component Information

| Chemical Name | Algae/aquatic plants | Fish | Toxicity to microorganisms | Crustacea |
|---------------------------------|----------------------|---|----------------------------|---|
| Ammonium hydroxide 1336-21-6 | | 8.2: 96 h Pimephales promelas mg/L LC50 | | 0.66: 48 h water flea mg/L EC50 0.66: 48 h Daphnia pulex mg/L EC50 |
| Phosphoric Acid 7664-38-2 | | 3 - 3.5: 96 h Gambusia affinis mg/L LC50 | | 4.6: 12 h Daphnia magna mg/L EC50 |
| Urea 57-13-6 | | 16200 - 18300: 96 h Poecilia reticulata mg/L LC50 | | 3910: 48 h Daphnia magna mg/L EC50 Static 10000: 24 h Daphnia magna Straus mg/L EC50 |

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

| Chemical Name | Partition Coefficient |
|-----------------|-----------------------|
| Urea 57-13-6 | -1.59 |

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

California Hazardous Waste Status

| Chemical Name | California Hazardous Waste Status |
|---------------------------------|-----------------------------------|
| Ammonium hydroxide 1336-21-6 | Toxic Corrosive |
| Phosphoric Acid 7664-38-2 | Corrosive |

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT Not regulated

IATA Not regulated

IMDG
Marine Pollutant This material may meet the definition of a marine pollutant

15. REGULATORY INFORMATION

International Inventories

| Chemical Name | TSCA | DSL | NDSL | EINECS | ELINCS | ENCS | IECSC | KECL | PICCS | AICS |
|--------------------|---------|-----|------|---------|--------|---------|-------|---------|-------|------|
| Ammonium hydroxide | Present | X | | Present | | Present | X | Present | X | X |
| Phosphoric Acid | Present | X | | Present | | Present | X | Present | X | X |
| Iron HEDTA | Present | X | | Present | | | X | | | X |

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 - Phillipines Inventory of Chemicals and Chemical Substances*
- AICS - Australian Inventory of Chemical Substances*

US Federal Regulations

CERCLA

| Chemical Name | Hazardous Substances RQs | CERCLA/SARA RQ | Reportable Quantity (RQ) |
|---------------------------------|--------------------------|----------------|---|
| Ammonium hydroxide 1336-21-6 | 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 |
|------------------------------|---------|--|--|

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 | CAS No | Weight-% | SARA 313 - Threshold Values % |
|-------------------------------------|-----------|----------|-------------------------------|
| Mono-ammonium Phosphate - 7722-76-1 | 7722-76-1 | 10-20 | 1.0 |
| Ammonium hydroxide - 1336-21-6 | 1336-21-6 | 10-20 | 1.0 |

CWA (Clean Water Act)

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|--------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Ammonium hydroxide | 1000 lb | | | X |
| Phosphoric Acid | 5000 lb | | | X |

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 |
|---------------------------------|------------|---------------|--------------|
| Ammonium hydroxide 1336-21-6 | X | X | X |
| Phosphoric Acid 7664-38-2 | X | X | X |

16. OTHER INFORMATION**NFPA****Health Hazards****Flammability****Instability****Special Hazards**

Not determined

Not determined

Not determined

Not determined

HMIS**Health Hazards****Flammability****Physical Hazards****Personal Protection**

Not determined

Not determined

Not determined

Not determined

Issue Date:

04-May-2015

Revision Date:

29-Apr-2016

Revision Note:

Address Change

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