SAFETY DATA SHEET

pHor-Ti-Phy 5-25-5

SDS REVISIONS: ALL SECTIONS DATE OF ISSUE: 02/08/2018 **SUPERSEDES: 10/31/2012**

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Product Name pHor-Ti-Phy 5-25-5

Other means of identification

Product Code FRT-0036
Document 1000742785; 1000363641; 1000363640
Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Foliar Nutrient.
Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address
LOVELAND PRODUCTS, INC.
P.O. Box 1286
Greeley, CO 80632-1286

Emergency telephone number

Company Phone Number 1-888-LPI-CUST (574-2878)
Emergency Telephone Chemtrec 1-800-424-9300
Medical Emergencies: 1-866-944-8565
US regulations require reporting spills of this material that could reach any surface waters. The toll-free phone number for the US Coast Guard National Response Center is 1-800-424-8802

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Dusts/Mists)	Category 3 - (H331)
Skin corrosion/irritation	Category 1 Sub-category B - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Carcinogenicity	Category 1B - (H350)

Label elements

Signal word **DANGER**

Hazard statements

H314 - Causes severe skin burns and eye damage
H331 - Toxic if inhaled
H350 - May cause cancer

Precautionary Statements - Prevention

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P281 - Use personal protective equipment as required
P271 - Use only outdoors or in a well-ventilated area
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling

Precautionary Statements - Response

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P363 - Wash contaminated clothing before reuse

Precautionary Statements - Storage

P405 - Store locked up
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical Name	CAS No	Weight-%	GHS Classification	Trade Secret
Purified Phosphoric Acid	7664-38-2	10 - 30	Skin Corr. 1B (H314)	*
Potassium Nitrate	7757-79-1	1 - 5		*
Potassium Hydroxide	1310-58-3	1 - 5	Acute Tox. 4 (H302) Skin Corr. 1A (H314)	*
Zinc Sulfate	7733-02-0	0.1 - 1	Acute Tox. 4 (H302) Eye Dam. 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	*

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.
OSHA Hazard Communication 29 CFR 1910.1200

4. FIRST AID MEASURES

Description of first aid measures

General advice Get medical attention if symptoms occur.

Eye contact Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Skin contact Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Inhalation Remove to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferable by mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.

Ingestion Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Self-protection of the first aider Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed. Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also call 1-866-944-8565 for emergency medical treatment information.

Note to physicians Treat symptomatically. Symptoms may be delayed.

Antidotes No data available

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing agent suitable for type of surrounding fire, Use CO_2, dry chemical, or foam

Specific hazards arising from the chemical
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. 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.

Methods for cleaning up Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains. Dam up. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Incompatible materials Incompatible with strong acids and bases. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

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.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection In case of inadequate ventilation or risk of inhalation of dusts or vapors, use suitable respiratory equipment such as MSHA/NIOSH TC-21C or NIOSH approved respirator with N, R, P, or HE filter. If respirators are used, a program should be in place to assure compliance with 29 CFR 1910.134, the OSHA Respiratory Protection standard. Wear air supplied respiratory protection if exposure concentrations are unknown.

General Hygiene Considerations When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Aqueous solution
Color	Light brown
Odor	Slight
Odor threshold	No data available

Property	**Values (Remarks - Method)**	
pH	No data available	
Melting point / freezing point	No data available	No data available
Boiling point	No data available	No data available
Flash point	No data available Does not flash	
Evaporation rate	No data available	
Flammability (solid, gas)	No data available	Not applicable
Flammability Limit in Air		Not applicable
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor pressure	No data available	No data available
Vapor density	No data available	No data available
Specific Gravity	1.37 g/ml	
Water solubility	Soluble in water	
Solubility in other solvents	No data available	No data available
Partition coefficient	No data available	No data available
Autoignition temperature	No data available	No data available
Decomposition temperature	No data available	No data available
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Explosive properties	No data available	
Oxidizing properties	No data available	

Other Information

VOC Content (%)	No data available
Density	11.45lbs/gal

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Exposure to air or moisture over prolonged periods.

Incompatible materials
Incompatible with strong acids and bases. Incompatible with oxidizing agents.

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

11. TOXICOLOGICAL INFORMATION

Acute toxicity of the formulated product:

Chemical Name	Oral LD_{50}	Dermal LD_{50}	Inhalation LC_{50}
Purified Phosphoric Acid	= 1530 mg/kg (Rat)	= 2740 mg/kg (Rabbit)	> 850 mg/m³ (Rat) 1 h
Potassium Nitrate	= 3015 mg/kg (Rat)		
Potassium Hydroxide	= 284 mg/kg (Rat)		
Zinc Sulfate	= 1710 mg/kg (Rat)		

Chemical Name	Skin corrosion/irritation	Eye damage/irritation	Respiratory sensitization	Skin sensitization
Purified Phosphoric Acid 7664-38-2	Category 1			
Potassium Hydroxide 1310-58-3	Category 1			
Zinc Sulfate 7733-02-0		Category 1		

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

Germ cell mutagenicity No information available.

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

Chemical Name	ACGIH	IARC	NTP	OSHA
Potassium Nitrate 7757-79-1	-	Group 2A	-	X

IARC (International Agency for Research on Cancer)
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.

Chronic toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects. May cause adverse liver effects.

Target Organ Effects Eye damage/irritation, Gastrointestinal tract (GI), liver, Respiratory system, Skin.

Aspiration hazard No information available.

Information on likely routes of exposure

Product Information No data available

Inhalation No data available.

Eye contact No data available.

Skin contact No data available.

Ingestion No data available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Purified Phosphoric Acid 7664-38-2	-	LC50 3 - 3.5 mg/L 96 h Gambusia affinis	EC50 4.6 mg/L 12 h Daphnia magna
Potassium Hydroxide 1310-58-3	-	LC50 80 mg/L 96 h Gambusia affinis	-
Zinc Sulfate 7733-02-0	EC50 0.056 mg/L 72 h Pseudokirchneriella subcapitata EC50 64.8 mg/L 72 h Chlorella vulgaris EC50 2.4 mg/L 96 h Chlorella vulgaris	LC50 0.162 mg/L 96 h Oncorhynchus mykiss LC50 0.03 - 0.05 mg/L 96 h Oncorhynchus mykiss LC50 0.34 - 0.93 mg/L 96 h Oncorhynchus mykiss LC50 0.218 - 0.42 mg/L 96 h Pimephales promelas LC50 0.06 mg/L 96 h Pimephales promelas LC50 0.23 - 0.48 mg/L 96 h Pimephales promelas LC50 49.23 - 64.16 mg/L 96 h Poecilia reticulata LC50 0.48 - 1.72 mg/L 96 h Poecilia reticulata LC50 0.168 - 0.25 mg/L 96 h Pimephales promelas LC50 0.15 mg/L 96 h Cyprinus carpio LC50 16.85 - 27.18 mg/L 96 h Cyprinus carpio LC50 3 - 4.6 mg/L 96 h Lepomis macrochirus LC50 3.55 - 6.32 mg/L 96 h Lepomis macrochirus LC50 0.63 mg/L 96 h Poecilia reticulata	EC50 0.75 mg/L 48 h Daphnia magna EC50 0.538 - 0.908 mg/L 48 h Daphnia magna

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Wastes may be disposed of on site or at an approved waste disposal facility. Triple rinse (or equivalent), adding rinse water to spray tank. Offer container for recycling or dispose of in a sanitary landfill or by other procedures approved by appropriate authorities. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at http://www.acrecycle.org/. Do not contaminate water, food or feed by storage or disposal.

Contaminated packaging Do not reuse container.

14. TRANSPORT INFORMATION

DOT

UN/ID no	Not regulated
Proper shipping name	Not regulated
U.S. Surface Freight Classification:	FERTILIZING COMPOUNDS (MANUFACTURED FERTILIZERS), NOI, LIQUID (NMFC 68140, SUB 6; CLASS 70)

15. REGULATORY INFORMATION

NFPA	**Health hazards** 3	**Flammability** 0	**Instability** 0	**Physical and Chemical Properties** -
HMIS	**Health hazards** 3	**Flammability** 0	**Physical hazards** 0	**Personal protection** B

0 - Least **1 - Slight** **2 - Moderate** **3 - High** **4 - Severe**

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 %
Potassium Nitrate - 7757-79-1	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

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
Purified Phosphoric Acid 7664-38-2	5000 lb	-	-	X
Potassium Hydroxide 1310-58-3	1000 lb	-	-	X
Zinc Sulfate 7733-02-0	1000 lb	X	-	X

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	CERCLA/SARA RQ	Reportable Quantity (RQ)
Purified Phosphoric Acid 7664-38-2	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Potassium Hydroxide 1310-58-3	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ
Zinc Sulfate 7733-02-0	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. EPA Label Information

16. OTHER INFORMATION

Prepared By Registrations and Regulatory Affairs **Reviewed By** Environmental Health and Safety

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Revision Note
16 SDS sections updated

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End of Safety Data Sheet