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Safety Data Sheet PHOS-10

1. IDENTIFICATION

Synonyms none
 CAS# see Part 3, below
 Material Use fertilizer

IN AN EMERGENCY CALL: INFOTRAC 1-800-535-5053

2. HAZARD IDENTIFICATION

GHS Class corrosive (metal) corrosive (skin)
(Category) (no category) (1B)
Signal Words WARNING DANGER
Hazard Statements may be corrosive to metals (H290) causes severe skin burns & eye damage (H314)



GHS Precautionary Statements for Labeling

P234, P390 Keep only in original container. Absorb spillage to prevent material damage.
 P260, P262 Do not breathe mists. Do not get in eyes, on skin or on clothing.
 P264, P280 Wash thoroughly after handling. Wear eye protection, protective gloves and clothing of butyl or neoprene.
 P273, P391 Avoid release to the environment. Collect spillage.
 P305, P351, P338 If in eyes, rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

3. COMPOSITION

	CAS NUMBER	%	TLV mg/m ³	LD ₅₀ (mg/kg) ORAL	LD ₅₀ (mg/kg) SKIN	LC ₅₀ ppm INHALATION
Phosphoric Acid	7664-38-2	30-40%	1	1250	1260	25.5
Urea	57-13-6	5-10%	not listed	8470	not known	not known
Calcium Chloride	10043-52-4	5-10%	not listed	>1000	>5000	not known
Water	7732-18-5	balance	not toxic	90,00	not toxic	not toxic

4. FIRST AID

SKIN: Wash with plenty of water. Remove contaminated clothing and do not reuse until laundered. Seek medical help promptly if there is persistent itching or redness in the affected area.
EYES: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance if there is persistent irritation.
INHALATION: Remove from contaminated area promptly. **CAUTION: Rescuer must not endanger himself!** If victim's breathing stops, administer artificial respiration and seek medical aid promptly.
INGESTION: Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

NOTE: Corrosive substance. Begin first aid immediately. Inadvertent inhalation of vomited material may seriously damage the lungs. The stomach should only be emptied under medical supervision, and after the installation of an airway to protect the lungs.

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5. FLAMMABILITY & FIRE-FIGHTING

Flash Point	cannot burn
Autoignition Temperature	cannot burn
Flammable Limits	cannot burn
Combustion Products	oxides of phosphorous, calcium & nitrogen
Firefighting Precautions	as for materials sustaining fire; compatible with water; firefighters must wear SCBA
Static Discharge	cannot accumulate a static charge

6. ACCIDENTAL RELEASE MEASURES

Leak Precaution	dike to control spillage and prevent environmental contamination
Handling Spill	recover free liquid with suitable pumps; neutralize residue with soda ash, crushed limestone, cement powder or sodium bicarbonate, absorb on an inert sorbent, sweep & pick up using a plastic shovel, & store in closed containers for recycling or disposal

7. HANDLING & STORAGE

This product is highly corrosive. Keep away from all metals except resistant grades of stainless steel. Store in original containers, away from substances listed in Part 10 (below). Store above -17°C / 1.5°F. *Lower temperatures may cause phosphoric acid to crystallize out of solution. It may be difficult to redissolve the crystals.* Always ensure that containers, whether empty or full, are tightly sealed unless in use. Inspect containers for damage and/or leakage.

Use corrosion resistant pumps & hoses for product handling. Use special self-closing containers for small amounts. Always transfer the smallest amount you are likely to need.

Dilution with water causes heating. When diluting this product, always add the acid to water – **never add water to the acid – while stirring continuously to avoid local overheating, boiling and spattering.**

Avoid creating product mist. If mist is created, install adequate exhaust ventilation (*see Part 8*). Never cut, drill, weld or grind on or near this container. Avoid all contact with skin by wearing appropriate resistant clothing, and wash work clothes frequently. An eye bath and safety shower must be available near the workplace.

<<< Keep soda ash, crushed limestone, cement powder or sodium bicarbonate on hand to neutralize any spilled material. >>>

8. EXPOSURE CONTROL & PERSONAL PROTECTION

Phosphoric Acid:

ACGIH TLV	1mg/m ³	ACGIH STEL	3mg/m ³
OSHA PEL	1mg/m ³	OSHA STEL	3mg/m ³
Ventilation	mechanical ventilation may be required if product mist forms in handling or processing		
Hands	use butyl or neoprene <u>gauntlet-style</u> gloves – <i>other types also protect; confirm suitability with supplier</i>		
Eyes	safety glasses with side shields & a face shield – <i>always protect the eyes</i>		
Clothing	wear butyl or neoprene apron, boots, hat & long sleeves if there is any danger of splashing,		

9. PHYSICAL AND CHEMICAL PROPERTIES

NOTE: for Flash Point, Autoignition Temperature & Flammable Limits see Part 5.

Odor & Appearance	clear, colorless, odorless liquid
Odor Threshold	not known – <i>odourless</i>
Vapor Pressure	as for water
Evaporation Rate (<i>Butyl Acetate = 1</i>)	as for water
Vapor Density (air = 1)	0.6 (<i>water</i>) – <i>no other volatile material present</i>
Boiling Point	above 115°C / 239°F
Freezing Point	not measured; approx. -20°C / -4°F
Decomposition Temperature	not known – <i>no decomposition below the boiling point</i>
Specific Gravity	not measured; approx. 1.25 (20/20°C)
Water Solubility	complete
Viscosity	not measured – <i>mobile liquid</i>
pH	<1 (as supplied) – <i>strong, aggressive acid</i>

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10. REACTIVITY

Dangerously Reactive With	alkalis, reducing agents
Also Reactive With	corrosive to many metals
Chemical Stability	stable; will not polymerize
Decomposes in Presence of	no decomposition triggers known
Decomposition Products	none apart from Hazardous Combustion Products
Mechanical Impact	not sensitive

11. TOXICITY INFORMATION**i. ACUTE EXPOSURE**

Skin Contact	corrosive to skin if not washed off promptly; may cause scarring <i>NOTE:</i> even dilute solutions (2-4%) are irritating on prolonged contact.
Skin Absorption	not absorbed – severe skin damage makes this impossible
Eye Contact	corrosive to eyes – may cause blindness
Inhalation	low vapour pressure, however, mist or spray is corrosive to respiratory tract
Ingestion	corrosive to mouth, throat & stomach; death due to internal bleeding has been seen
Calculated LD ₅₀ (oral)	2875mg/kg (rat)
LD ₅₀ (skin)	<i>insufficient information to calculate</i>
LC ₅₀ (inhalation)	<i>insufficient information to calculate</i>

ii. CHRONIC EXPOSURE

General	dermatitis has been reported on repeated skin contact with dilute solutions
Sensitizing	not a sensitizer in humans or animals
Carcinogen/Tumorigen	not considered a tumorigen or a carcinogen in humans or animals
Reproductive Effect	no known effect in humans or animals
Mutagen	no known effect on humans or animals
Synergistic With	not known

12. ECOLOGICAL INFORMATION**Phosphoric Acid:**

Bioaccumulation	phosphoric acid is not a bioaccumulator
Biodegradation	inorganic substance cannot biodegrade; <i>limiting plant nutrient – taken up by plant material</i>
Abiotic Degradation	neutralized by carbonate rock & soils; resulting phosphate compounds precipitate and persist
Mobility in soil, water	water soluble, may move readily in environment OR may precipitate on contact with carbonates

Aquatic Toxicity:

LC ₅₀ (Fish, 96hr)	pH=3.0-3.25 (Lepomis macrochirus), 138mg/liter (Gambusia affinis), 75mg/liter (Oryzias latipes)
EC ₅₀ (Crustacea, 12hr)	pH=4.6 (Daphnia magna), pH=4.1 (Daphnia pulex), pH=3.4 (Gammarus pulex & fossarum)
EC ₅₀ (Algae)	>100mg/liter (Desmodesmus subspicatus), 78mg/liter (Pseudokirchneriella subcapitata)
EC ₅₀ (Bacteria)	270mg/liter (“activated sludge”)

Urea:

Bioaccumulation	not a bioaccumulator
Biodegradation	biodegrades readily & very rapidly in the presence of oxygen; 96% in 16 days & 100% in 21 days
Abiotic Degradation	reacts with atmospheric hydroxyl radicals; estimated ½-life in air is 10 hours
Mobility in soil, water	water soluble; moves readily in soil and water

Aquatic Toxicity

LC ₅₀ (Fish, 96hr)	6810mg/liter (Leuciscus idus), 9100mg/liter (Barilius barna)
NOEC (Fish, 96hr)	>10,000mg/liter (Leuciscus idus)
EC ₅₀ (Crustacea, 24hr)	>60,000mg/liter (Aedes aegypti), >10,000mg/liter (Daphnia magna)
NOAEC (Algae)	>10,000mg/liter (Scenedesmus quadricauda)
EC ₅₀ (Bacteria)	>10,000mg/liter (Pseudomonas putida)

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12. ECOLOGICAL INFORMATION, cont'd**Calcium Chloride:**

Bioaccumulation	not a bioaccumulator
Biodegradation	inorganic salt – cannot biodegrade
Abiotic Degradation	highly stable salt – ion exchange with other solutes in the environment
Mobility in soil, water	water soluble; likely to move readily in soil and water

Aquatic Toxicity

LC ₅₀ (Fish, 96hr)	13,400mg/liter (<i>Gambusia affinis</i>), 10,650mg/liter (<i>Lepomis macrochirus</i>)
LC ₅₀ (Amphibian, 72hr)	6360mg/liter (<i>Rana breviceps</i> – <i>frog</i>)
EC ₅₀ (Crustacea, 48hr)	464, 759, 1285 & 3005mg/liter (<i>Daphnia magna</i>), 7000 & 19,400mg/liter (<i>Cyclops abyssorum</i>), 3000 & 8300mg/liter (<i>Daphnia hyalina</i>), 11,190mg/liter (<i>Eudiaptomus padanus</i>),
EC ₅₀ (Algae)	3130mg/liter (<i>Nitzschia linearis</i>)
EC ₅₀ (Bacteria)	no data available

13. DISPOSAL CONSIDERATIONS

Waste Disposal	do not flush to sewer , send un-neutralized liquid to a hazardous waste specialist who may use it to neutralize alkaline waste; suitably neutralized material may be dumped in sanitary landfill if local regulations permit this
Containers	Drums should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use. Pails must be vented and thoroughly dried prior to crushing and recycling. IBCs (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5 years). Steel containers must be inspected, pressure tested & recertified every 5 years. Warning: never cut, drill, weld or grind on or near this container, even if empty.

14. TRANSPORT INFORMATION**USA 49 CFR & Canada/International TDG**

Product Identification Number	UN – 1760
Shipping Name	Corrosive liquids, N.O.S. (phosphoric acid)
Classification	8; Packing Group III
Marine Pollution	<i>not a marine pollutant</i>
ERAP Required	No
Reportable Quantity (RQ)	none

**15. REGULATIONS**

Canada DSL	on inventory
U.S.A. TSCA	on inventory
Europe EINECS	on inventory

16. OTHER INFORMATION

Date of Preparation June 2015

Date of Revision -

Prepared for Tomco-Harwel, by Peter Bursztyn

With data from the Registry of Toxic Effects of Chemical Substances (RTECS), Hazardous Substance Data Base (HSDB), Cheminfo (CCOHS), OSHA, IUCLID Datasheets (European Chemical Substance Information System - ESIS), & others sources (below if used), as required/available

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