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Material Safety Data Sheet

AgriACID

1. PRODUCT IDENTIFICATION

Product Name: AgriAcid

Identity: Phosphoric Acid Solution - Orthophosphoric Acid, Formic Acid, Lactic Acid

Issued: August 22, 2016

Chemical Name: 70 - 80% Phosphoric Acid, 85% Formic Acid, 100% Lactic Acid

Chemical Family: Inorganic Acid, Organic Acid

Molecular Formula: H_3PO_4

Product Use: pH lowering of H_2O

2. COMPOSITION

Component	ACGIH TLV	UN #	CAS #
Phosphoric Acid, 70%	1 mg/m ³	1805	7664-38-2
Formic Acid, 85%	N/A	1779	64-18-6
Lactic Acid, 100%	N/A	N/A	79-33-4

PEL - OSHA Permissible Exposure Limit

TLV - American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value

TWA - 8 hour Weighted Average

STEL - Short Term Exposure Limit

3. HAZARDS IDENTIFICATION

CHRONIC/CARCINOGENICITY

The ingredients of this product are not listed as carcinogens by NTP (National Toxicology Program), OSHA (Occupational Safety & Health Administration) or by IARC (International Agency for Research on Cancer).

4. FIRST AID MEASURES

INHALATION:

Remove to fresh air. If not breathing, give artificial respiration. If not breathing and no pulse, give cardiopulmonary resuscitation (CPR). Keep patient warm and at rest. Obtain medical attention immediately.

SKIN:

Flush skin with running water for a minimum of 20 minutes. Start flushing while removing contaminated clothing. If irritation persists, repeat flushing. Obtain medical attention IMMEDIATELY. Do not transport victim unless the recommended flushing period is completed or flushing can be continued during transport.

EYES:

Immediately flush eyes with running water for a minimum of 30 minutes, preferably up to 60 minutes. Hold eyelids open during flushing. OBTAIN MEDICAL ATTENTION IMMEDIATELY. Do not transport victim until the recommended flushing period is completed unless flushing can be continued during transport.

INGESTION:

Never give anything by mouth if victim is rapidly losing consciousness or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink $\frac{1}{2}$ to 1 glass of water to dilute material. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in vomitus, rinse mouth and administer more water. IMMEDIATELY transport victim to an emergency facility.

EMERGENCY MEDICAL CARE:

Provide general supportive measures (comfort, warmth, rest). Consult a physician and/or nearest Poison Control Centre for all exposures

except minor instances of
inhalation or skin contact.

5. FIRE FIGHTING MEASURES

FLASH POINT:	Not applicable, not flammable
FLAMMABLE LIMITS IN AIR (%):	UEL: N/A LEL: N/A
EXTINGUISHING MEDIA:	Chemical type foam, Dry Chemical, Water Spray
SPECIAL FIRE FIGHTING INSTRUCTIONS:	This product is not flammable. However, hazardous decomposition and combustion products may be formed in a fire situation. Cool exposed containers with water spray to prevent overheating.
OTHER FIRE PRECAUTIONS:	Evacuate personnel downwind of fire to avoid inhalation of irritating and/or harmful fumes and smoke.

6. ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK:	Stop the discharge if possible and contain by constructing barrier (dykes, lagoons) for release to land, reclaim product for reuse or treat with neutralizing agent and recover for disposal. For release to water, contain by damming and water diversion if possible, neutralize and recover for disposal. Report significant spills to government environmental authorities.
ENVIRONMENTAL EFFECTS:	May cause adverse environmental impact if material reaches waterways.
DEACTIVATING CHEMICALS:	Lime, soda ash or sodium bicarbonate.

7. HANDLING & STORAGE

HANDLING:	Avoid contact with either liquid or mist. Do not eat drink or smoke in work area. Wash hands thoroughly after handling this material.
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STORAGE TEMPERATURE (°C) : Ambient. May freeze at low temperatures, especially high concentrations, but will not rupture tank.

STORAGE REQUIREMENTS: Store in dry, well-ventilated area away from incompatible materials. Protect against physical damage.

OTHER PRECAUTIONS: Containers should be kept well sealed when not in use. Handle as a corrosive liquid.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT: ACGIH TLV-TWA: 1 mg/m³

EFFECTS OF EXPOSURE WHEN:

Inhaled: Phosphoric acid has a very low vapour pressure at room temperature and is not expected to present an inhalation hazard. However, acid mist can cause irritation of the nose, throat and respiratory tract.

Skin Contact: Corrosive! Will cause severe burns if not rinsed off immediately.

Eye Contact: Corrosive! Will cause severe burns and permanent eye damage.

Ingested: Corrosive! Burns to the mouth, throat and digestive tract. May cause pain in the stomach, difficulty in breathing, nausea, vomiting, diarrhea and convulsions; in severe cases, collapse and death.

Other Health Effects: Skin: Dermatitis may occur from prolonged or repeated skin contact.

Recommendations listed below indicate the type of equipment that will provide protection against overexposure to this product. Conditions of use, adequacy of engineering of other control measured, and actual exposures will dictate the need for specific protective devices at your workplace.

ENGINEERING CONTROLS: Good ventilation should be sufficient to control airborne levels of material. Use process enclosures where possible.

RESPIRATORY PROTECTION: Always wear NIOSH/MSHA approved respirator equipment when vapour or

	mists may exceed applicable concentration limits.
SKIN PROTECTION:	Nitrile rubber, neoprene, or PVC gloves, rubber boots and protective clothing should be used.
EYE PROTECTION:	Chemical safety goggles. A face shield may also be necessary.
OTHER PERSONAL EQUIPMENT:	Have a safety shower/eye-wash station readily available in the immediate work area.

9. PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE & ODOUR:	Clear liquid, odourless
PHYSICAL STATE:	Liquid
BOILING POINT:	135°C
MELTING/FREEZING POINT:	Approx. -17°C
VAPOUR PRESSURE:	5 mmHg @ 25°C
VAPOUR DENSITY:	Not applicable
SOLUBILITY IN WATER:	100% soluble in water, also soluble in Methanol and Ethanol
SPECIFIC GRAVITY:	1.59 @ 15.5°C
pH:	1.0 (neat)
WATER COEFFICIENT /OIL DISTRIBUTION:	Not available
SENSITIVITY TO MECHANICAL IMPACT:	Not applicable
RATE OF BURNING:	Not applicable
EXPLOSIVE POWER:	Not applicable
SENSITIVITY TO STATIC DISCHARGE:	Not applicable

10. STABILITY & REACTIVITY

STABILITY:	Stable - is stable under normal conditions
HAZARDOUS DECOMPOSITION PRODUCTS:	Phosphine, Oxides of Phosphorus
HAZARDOUS POLYMERIZATION:	Will not occur
CONDITIONS TO AVOID:	Excessive heat
MATERIAL TO AVOID:	Strong bases, Active metals

11. TOXICOLOGICAL INFORMATION

LD₅₀ (skin, rabbit) = 2740 mg/kg; LD₅₀ (oral, rat) = 1530 mg/kg

REPRODUCTIVE EFFECTS:	No information is available and no adverse reproductive effects are anticipated.
MUTAGENICITY DATA:	No information is available and no adverse mutagenic effects are anticipated.
TERATOGENICITY DATA:	No information is available and no adverse teratogenic effects are anticipated.
SYNERGISTIC MATERIALS:	None known.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS:	May cause adverse environmental impact if material reaches waterways.
DEACTIVATING CHEMICALS:	Lime, soda ash or sodium bicarbonate.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS:	Reclaim for reuse, if possible. Otherwise dispose of at an appropriate waste disposal facility in accordance with local, provincial or federal regulations. DO NOT dispose of waste with normal garbage or in local sewerage system.
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14. TRANSPORT INFORMATION

PROPER SHIPPING NAME:	Corrosive Liquid, N.O.S. (Phosphoric acid, Formic acid)
SHIPPING CLASS/DIVISION:	8
PRODUCT ID # (PIN):	UN1760
PACKING GROUP:	III

15. REGULATORY INFORMATION

N/A

16. OTHER INFORMATION

1. Phosphoric acid. Chemical hazard summary no. 17 (C86-8E). CCOHS, 1986
2. NIOSH pocket guide to chemical hazards. NIOSH, June 1994. p 254-255.
3. Supplier's Material Safety Data Sheets.
4. Fire protection guide to hazardous materials. 11th ed. National Fire Protection Association. 1994.
5. Forsberg, K., et al. Quick selection guide to chemical protective clothing. 2nd ed. Van Nostrans Reinhold, 1993. p. 79.
6. Canadian Centre for Occupational Health and Safety.

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