

MATERIAL SAFETY DATA SHEET

VITA GROW pH Down™

SECTION 1. MATERIAL IDENTIFICATION

Product Name: pH Down™

Chemical Family: Corrosive mixture of acids in aqueous solution

Product Use: To lower the pH of hydroponic nutrient solutions and plant fertilizers.

Manufactured by: American Agriculture, Portland, OR 97216 (888) 433-6867 Fax: (503) 256-2402

SECTION 2, COMPOSITION / INFORMATION ON INGREDIENTS

The percentage of mixture information for pH Down™ is withheld as a trade secret. The basic ingredients of pH Down™ are phosphoric acid, citric acid and mono ammonium phosphate.

SECTION 3. HAZARDS IDENTIFICATION

DANGER! CORROSIVE. CAUSES SEVERE IRRITATION AND BURNS TO EVERY AREA OF CONTACT. HARMFUL IF SWALLOWED OR INHALED.

Potential Health Effects:

*** Emergency Overview ***

Primary Entry Routes: Ingestion, inhalation, skin.

Target Organs: Gastrointestinal and respiratory tract.

Acute Effects:

Ingestion: severe digestive tract irritation with possible burns.

Inhalation: irritation and possible burns.

Eye, severe burns.

Skin: severe irritation and burns.

Carcinogenicity: IARC, NTP, and OSHA do not list as a carcinogen.

Medical Conditions Aggravated by Long-term Exposure: Unknown.

Chronic Effects: Same as acute.

Other: None.

Section 4. FIRST AID MEASURES

Ingestion: Never give anything by mouth to an unconscious or convulsing person. Rinse out the mouth and drink two to four cups of milk. Do not induce vomiting. See a physician immediately.

Eye Contact: Do not allow victim to rub or keep eyes tightly shut. Gently lift eyelids and flush immediately and continuously with flooding amounts of water for at least 15 minutes. Consult a physician or ophthalmologist if pain or irritation develops.

Skin Contact: Wash exposed area with soap and water. For reddened or blistered skin, consult a physician.

Inhalation: Remove exposed person to fresh air and support breathing, if necessary. Consult a physician as soon as possible.

After first aid: Get appropriate community medical support.

SECTION 5. FIRE AND EXPLOSION DATA

Flash Point: Not flammable.

Auto-ignition Temperature: Not flammable.

LEL: Unknown

Flammability Classification: Not flammable.

Burning Rate: Not flammable.

Extinguishing Media: Use dry chemical, carbon dioxide, water spray, fog, or foam.

Unusual Fire or Explosion Hazards: Container may explode in heat of fire.

Hazardous Combustion Products: Unknown.

Fire-Fighting Instructions: Do not release run-off from fire control methods to sewers or waterways.

Fire Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full-face piece.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Spill /Leak Procedures: Use personal protective equipment, cover with dry lime or soda ash, and place in closed container for disposal. Flush spill area with water. In case of large spill, clear the area and notify appropriate emergency response activity.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

SECTION 7. HANDLING AND STORAGE

Handling Precautions: Use only in well-ventilated areas. Avoid contact with skin and eyes; avoid inhalation of aerosols and ingestion. Wear an appropriate NIOSH-approved respirator for protection where airborne concentrations are excessive. Respirator usage must be in accordance with OSHA requirements (29 CFR 1910.134).

Storage Requirements: Keep away from alkali liquids and materials. Store as a corrosive in tightly closed containers away from incompatible materials and in a cool dark location out of direct sunlight as UV rays will make the container brittle.

Regulatory Requirements: Follow applicable OSHA regulations.

SECTION 8. EXPOSURE CONTROLS/Personal Protection

Airborne Exposure Limits for Phosphoric Acid:

-OSHA Permissible Exposure Limit (PEL): 1 mg/m³ (TWA)

-ACGIH Threshold Limit Value (TLV): 1 mg/m³ (TWA), 3 mg/m³ (STEL)

Engineering Controls: Provide general or local exhaust ventilation systems to maintain airborne concentrations as low as possible.

Administrative Controls: Avoid inhalation, ingestion, skin and eye contact. Do not mix with solutions containing bleach or ammonia. Do not spray into the air.

Respiratory Protection: If this product is used as directed, respiratory protection is not required. Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/ NIOSH-approved respirator. If respirators are used, OSHA requires a written respiratory protection program that includes, at least: medical certification, training, fit testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/ Equipment: Wear disposable rubber, neoprene or latex gloves. Rinse gloves with water before disposal. Wear aprons and wipe clean spills on aprons before using again. If there

is a possibility of a liquid splash during application, wear protective eyewear designed for liquid splash protection.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Odor and Physical State: Yellow liquid.

Odor Threshold Range: Odorless.

Vapor Pressure: @20 °C 17.5mm.

Water Solubility: Completely soluble.

Other Solubility: Unknown.

pH: 1.2

Specific Gravity: 1.13

Boiling Point: 104°C.

Freezing Point: -8°C.

Viscosity: 1.00 mNsm⁻²

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Polymerization: Hazardous polymerization cannot occur.

Chemical Incompatibilities: Vita Grow pH Down™ can react with, alkali's (bases), aldehydes, amines, amides, alcohol's, glycol's, azo-compounds, carbamates, cresols, esters, phenols, metals, metal nitrates, oxides, strong caustics, solutions containing bleach or ammonia.

Conditions to Avoid: Do not mix with ammonia or bleach. Do not put in metal containers. Do not expose to excessive heat or direct sunlight. Always add this product to water; never add water to this product.

Hazardous Decomposition Products: Oxides of phosphorus.

SECTION 11. TOXICOLOGICAL INFORMATION

The toxicity of the combination of the chemicals, in the concentrations used in Vita Grow pH Down™ is unknown. The rat oral, LD50 for phosphoric acid is 1,530 mg/kg and the rabbit skin, LD50 is 220 mg/kg.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity: Unknown.

Environmental Fate: Not expected to be significant. Physical removal from air can occur via rainfall.

Environmental Degradation: Unknown.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal: Follow Federal, State, and local regulations.

SECTION 14. TRANSPORTATION INFORMATION

Do not transport with food and feedstuff

Proper Shipping Name: Phosphoric acid mixture

Hazard Class: 8 Canadian 8 (9.2)

UN/NA: UN 1805

Packing Group: III

SECTION 15. REGULATORY INFORMATION

EPA Regulations: Not listed

SECTION 16. OTHER INFORMATION

Vita Grow pH Down™ is a plant nutrition aid. Information assembled for this Material Safety Data Sheet is for the use of this product as intended by the manufacturer. Users should take all precautions recommended herein while working with this product.

Vita Grow provides the information contained herein in good faith, but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product.

Individuals receiving the information must exercise their independent judgment in using this product.