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SECTION 1. CHEMICAL PRODUCT and COMPANY IDENTIFICATION

Product Name: pH Down™

Chemical Family: Strong acid

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

Manufactured by: General Hydroponics Europe
Biopole
32500 Fleurance – France
Ph : + 33 (0) 562 06 08 30

SECTION 2. INGREDIENTS AND OCCUPATIONAL EXPOSURE LIMITS

The chemical identity of the compounds and exact proportions used in the mixture are a trade secret, however, they are derived from:

Chemical name	CAS#	OSHA PELs	ACGIH TLVs	Toxicity Data
Phosphoric acid 75%	7664-38-2	NE*	NE*	Rat. oral, LD ₅₀ : 1870 mg/kg
Nitric acid 53%	7697-37-2	NE*	NE*	CL50: 310-334 ppm

*Not established

SECTION 3. PHYSICAL DATA

Physical State: All compounds in pH Down are in aqueous solution.

Color: Pale orange

pH: 1.0

Solubility: pH Down is readily soluble in water

Appearance and odor: Clear, odorless liquid

SECTION 4. FIRE AND EXPLOSION DATA

Extinguishing Media: Use extinguishing media to control surrounding fire to extinguish pH Down fires. If water is used spray abundantly to control heat and to dilute the acid. Keep fire exposed containers cool with water spray. Remove containers from the fire area, if it can be done safely.

Unusual Fire/Explosion Hazards: pH Down is not combustible, but contact with common metals may liberate hydrogen, which is a flammable gas that forms an explosive mixture with air.

Special fire Fighting Procedures: Toxic fumes/gases can be evolved in a fire situation. Fire fighters should use self contained breathing apparatus (SCBA) with a full face piece operated in the pressure demand or positive pressure mode. Approach fires from up wind. If large quantities are involved, fight fire with unmanned hose holders and withdraw to a safe area. Wear full protective gear, and avoid skin and eye exposure to splashes or mists of solutions formed by use of water as a fire control measure. Be aware of runoff from fire control methods. Do not release to sewers or waterways.

SECTION 5: REACTIVITY DATA

Stability/Polymerization : pH Down is stable at room temperature in closed containers and under normal storage and handling conditions. Violent polymerization can occur with epoxides, azo compounds, and polymerizable compounds.

Incompatibility: pH Down contains a strong acid that reacts with alkalis (bases) to form phosphate salts and is corrosive (especially when hot) to many metals and alloys. It liberates explosive hydrogen gas when reacting with chlorides and stainless steel and can react violently with sodium tetrahydroborate. Exothermic reactions occur with aldehydes, amines, amides, alcohols and glycos, azo compounds, carbamates, esters, caustics, phenols and cresols, ketones, organophosphates, epoxides, explosives, combustible materials, unsaturated halides, and organic peroxides. pH Down forms flammable gases with sulfides, mercaptanes, cyanides, and aldehydes. It also forms toxic fumes with cyanides, sulfides, fluorides, organic peroxides, and halogenated organics. Hot, dilute pH Down reacts with nickel carbonate to form trinickel orthophosphate. Mixtures with nitromethane are explosive.

Hazardous Decomposition Products: Thermal oxidative decomposition of pH Down can produce toxic phosphorus oxide (Po_x) fumes

SECTION 6: HEALTH HAZARD DATA

Carcinogenicity : None of the contents of pH Down are listed as carcinogenic by the NTP, IARC, nor OSHA.

Target Organs: Respiratory system, eyes, and skin.

Primary Route of Entry: Inhalation, ingestion, skin and eye contact.

Summary of Risks: pH Down is a corrosive irritant to the eyes, skin, mucous membranes, and the upper respiratory tract. Concentrated solutions are moderately toxic by ingestion and skin contact.

Acute Exposure: Mist inhalation can cause coughing, sneezing, salivation, and difficult breathing. Severe exposure may lead to chemical pneumonitis. pH Down is irritating on contact with any body tissue, but burning may not be immediate upon skin contact. Ingestion can produce vomiting, abdominal pain, shock, bloody diarrhea, and severe gastrointestinal damage.

Long Term Exposure: Can cause dermatitis and chronic respiratory disease with repeated exposure.

First Aid:

Eye contact: Flush eyes, including under the eyelids, with flooding amounts of running clean water for at least fifteen (15) minutes. Burns of the eye should receive medical treatment.

Skin contact: Quickly remove contaminated clothing. After rinsing affected skin with flooding amounts of water for fifteen (15) minutes wash with soap and water. Treat burns with standard topical therapy. Seek medical attention if pain or irritation persists.

Inhalation: Remove victim to fresh air and support breathing as needed. Get medical assistance if needed.

Ingestion: Have a conscious victim drink several glasses of milk then give milk of magnesia or aluminium hydroxide gel. Never Induce Vomiting. If vomiting occurs give more milk. Seek medical help after administering first aid.

Note: never give anything by mouth to an unconscious person.

Physician note: Gastric lavage should not be routine for ingestions. Carefully weigh its benefits – bases on amount ingested, timing and history – against its potential complications. Carefully observe patients with inhalation exposure for the development of any systemic signs or symptoms. Maintain oxygenation and ventilation with close arterial blood gas monitoring. Patients developing hypersensitivity dermal reactions may require treatment with antihistamines or topical cortosteroids.

SECTION 7. SPILL, LEAK, AND DISPOSAL PROCEDURES

Spill Cleanup: Notify safety personnel of the spill. Evacuate all unnecessary personnel from the area and provide adequate ventilation. Clean up personnel should protect against skin and eye contact and mist inhalation. Absorb pH Down with an alkaline material (soda ash or lime), add water and mix to form a slurry, and place waste in poly- or lacquered – lined disposal drums.

Flush spill area with water. Do not release to sewers or waterways. The acidity of phosphoric acid may be reduced by natural water hardness and minerals, but the phosphate may persist indefinitely. A 100 to 1,000 ppm concentration of phosphoric acid during a 96 hr test period is the median tolerance limit (TL m96) at which 50% aquatic organisms survive. Follow applicable OSHA regulations (29 CFR 1910.120)

Disposal: Follow all applicable federal, state, and local regulations.

SECTION 8. SPÉCIAL PROTECTION DATA

Ventilation: Use local exhaust ventilation to control airborne levels during emergencies.

Respirator: Respirator usage must be in accordance with OSHA requirements (29 CFR 1910.134). For emergency or non routine operations wear a SCBA.

Warning: Air-purifying respirators do not protect against oxygen-deficient atmospheres.

Goggles: Protective eye wear or goggles should be worn per OSHA regulations (29 CFR 1910.133).

Protective Clothing: Wear when the possibility of skin or clothing contamination may exist. For normal usage it is appropriate to wear neoprene or nitrile gloves when using the product.

Safety Stations: Eye wash stations, quick drench showers, and washing facilities should be readily accessible to workers handling large quantities of pH Down.

Contaminated Equipment: Contact lenses pose a special hazard. Soft lenses may absorb irritants, And all contact lenses concentrate irritants. Particles may adhere to contact lenses and cause corneal damage. Remove pH Down from shoes and equipment. Launder contaminated clothing before wearing.

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

SECTION 9. SPECIAL PRECAUTIONS AND COMMENTS

Storage: pH Down should be stored in its original containers in a cool, dry, well-ventilated area with good drainage away from potential fire hazards, reactive materials, and metal powders. Protect containers from physical damage.

Engineering Controls: Avoid inhaling phosphoric acid mist. Provide adequate ventilation. Prevent contact with eyes, skin, or clothing. Practice good personal hygiene procedures.