

Section 1. Product and Company Identification

**Product Name** 2-Hydroxyphosphonocarboxylic Acid  
**CAS Number** 23783-26-8

**Parchem - fine & specialty chemicals**  
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Section 2. Hazards Identification

**Classification of the substance or mixture**

**GHS Classification**

Acute Oral Toxicity (Category 5)  
Acute Inhalation Toxicity (Category 5)  
Skin Irritation (Category 2)  
Serious Eye Damage (Category 1)  
Corrosive to Metals (Category 1)

**GHS Label Elements**

**Pictograms:**



**Signal word:** DANGER

**Hazard and precautionary statements**

**Hazard Statements**

H290 May be corrosive to metals.  
H303 May be harmful if swallowed.  
H333 May be harmful if inhaled  
H315 Causes skin irritation.  
H318 Causes serious eye damage.

**Precautionary Statements**

P280 Wear protective gloves (rubber/PVC)/protective clothing such as apron, boots and safety glasses with side shields.  
P264 Wash all affected body parts thoroughly after handling.  
P273 Avoid release to the environment.



P234 Keep only in original packaging.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor/physician.  
P310 Immediately call a POISON CENTER/doctor  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water  
P332 + P313 If skin irritation or rash occurs: Get medical advice/attention.  
P301 + 312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P304 + P340 IF INHALED: Remove person to fresh air and keep in position comfortable for breathing  
P391 + P501 Collect Spillage. Dispose of contents/container in accordance with local/state/federal regulations.  
P406 Store in corrosive resistant Glass, PVC, PP or PE container/in container with a resistant inner liner

Section 3. Composition / Information on Ingredients

**Common Name** 2-Hydroxyphosphonocarboxylic Acid  
**Synonym(s)** 2-Hydroxyphosphonoacetic Acid; HPAA; Phosphonoglycolic Acid  
**Formula** C<sub>2</sub>H<sub>5</sub>O<sub>6</sub>P  
**CAS Number** 23783-26-8

COMPONENT	CAS NUMBER	CONCENTRATION
Hydroxyphosphono-acetic acid	23783-26-8	30 – 60%
Phosphonic Acid	13598-36-2	1 – 5%

Section 4. First Aid Measures

**Eyes:** Flush skin with running water for at least fifteen minutes. Remove any contact lenses. Get medical aid/ attention immediately.

**Skin:** Remove contaminated clothing. Wash skin with plenty of running water and soap. Get medical attention/ aid if irritation persists. Contaminated clothing should be washed before use.

**Ingestion:** If the product is swallowed, first rinse mouth. Give large amount of water to drink. Call doctor/ physician/poison center immediately. Do not induce vomiting. Never give anything by mouth to an unconscious person. If a person vomits, place him/her in recovery position. Aspiration may cause pulmonary edema and pneumonitis.

**Inhalation:** If safe to do so, remove individual from further exposure. Keep warm and at rest. If breathing has ceased, give artificial respiration. Get medical attention/consult a physician.

**Medical conditions likely to be aggravated by exposure:** May cause central nervous system effects. May cause cardiovascular disturbances. Causes eye and skin burns. May cause severe respiratory or digestive tract irritation with possible burns.

**Note to Physician:** Treat symptomatically.

**PPE for first responders:** Gloves and safety goggles are highly recommended.



### Section 5. Firefighting Measures

**Flash Point (°C):** Not available.

**Flammable Limits:** Not available.

**General Hazard:** Evacuate personnel downwind in-order to avoid inhalation of irritating and/or harmful fumes and smoke.

**Extinguishing Media:** Water spray, alcohol resistant foam, dry chemical powder, or carbon dioxide. Appropriate for the surrounding area. Do not use a high-power water jet.

**Hazardous Combustion Products:** Fire may cause evolution of corrosive vapors of phosphorous oxides, carbon monoxide and carbon dioxide.

**Firefighting Procedures:** Hazardous decomposition and combustion products such as phosphorous and carbon oxides can be formed if product is burning. Cool exposed containers with water spray to prevent overheating.

**Firefighting Equipment:** Respiratory and eye protection are required for firefighting personnel. Full protective equipment (bunker gear) and self-contained breathing apparatus (SCBA) should be used for all fires. Evacuate area and fight fire from safe distance or a protected location. Move fire-exposed containers, if allowable without sacrificing the safety of the firefighters. Firefighters should control run-off water to prevent environmental contamination. -Do not release to sewers or waterways.

**Sensitivity to Static Discharge:** Not sensitive.

**Sensitivity to Mechanical Impact:** Not sensitive.

### Section 6. Accidental Release Measures

#### Protective Gear for Personnel

**For Small Spill:** Safety glasses or chemical splash goggles, chemically resistant gloves (rubber), chemically resistant boots, and any appropriate body protection to minimize direct contact to the skin. Wear respiratory protection to avoid inhaling vapors.

**For Large Spill:** Triple gloves (rubber and nitrile over latex), chemical resistant suit, boots, hard hat, full face mask/an air purifying respirator (NIOSH approved). Self-contained breathing apparatus must be worn in situations where fumigant gas generation and low oxygen levels are a consequence of contamination from the leak.

#### Spill Clean-up Procedures

**For Small Spill:** In the event of a small spill, the spill should be absorbed in vermiculite or dry sand and placed in a properly labeled waste disposal container immediately. Do not use water for clean-up. Do not let chemical/waste enter the environment. Dispose as per instructions in section 13.

**For Large Spill:** In the event of a large spill, contain the spill immediately and dispose the spill/waste according to state, federal, and local hazardous waste regulation. Do not let chemical/waste enter the environment.

**Environmental Precaution:** Water spill: use appropriate containment to avoid run off or release to sewer or other waterways. Land spill: use appropriate containment to avoid run off or release to ground. General precaution: remove containers of strong acid, alkali and incompatible materials



from the release area.

**Release Notes:** If spill could potentially enter any waterway, including intermittent dry creeks, contact local authorities.

#### Section 7. Handling and Storage

**Handling:** Use appropriate personal protective equipment as specified in Section 8. Handle in a well-ventilated area. Handle in a manner consistent with good industrial/manufacturing techniques and practices. Wash hands thoroughly with soap and water after use. Remove contaminated clothing and protective equipment before entering eating areas.

**Storage:** Store in a cool, dry well-ventilated area. Keep containers closed when not in use. Keep containers isolated from incompatible materials/conditions such as heat and ignition sources. Protect against physical damage and check regularly for leaks. Do not store with oxidizing agents, alkalis, or cyanides. Protect from light, including direct sun rays. Do not store in Carbon Steel containers.

#### Section 8. Exposure Controls / Personal Protection

**Engineering Controls:** Use appropriate engineering controls to minimize exposure to vapors/dust generated via routine use. Maintain adequate ventilation of workplace and storage areas.

**Personal Protective Equipment:** Eyes and face: Wear safety glasses with side shields or face shield when handling this material. Skin: Avoid direct contact with skin. Wear chemically resistant gloves (PVC/rubber), apron, boots or whole chemically resistant bodysuit when handling this product. Respiratory: Avoid breathing vapor or mist. If risk of overexposure, use NIOSH approved respiratory protection equipment. If used, full face-piece replaces the need for face shield and/or chemical goggles. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application.

**Work Hygienic Practices:** Facilities storing or using this material should be equipped with emergency eyewash, and a safety shower. Good personal hygiene practices should always be followed.

#### Exposure Limits

##### Hydroxyphosphonoacetic Acid (CAS# 23783-26-8)

OSHA PEL - STEL: N/A

OSHA PEL - TWA: N/A

ACGIH TLV - TWA: N/A

ACGIH TLV - STEL: N/A

NIOSH REL - TWA: N/A

NIOSH REL - STEL: N/A

NIOSH - IDLH: N/A

##### Phosphoric Acid (CAS# 7664-38-2)

OSHA PEL - STEL: 3 mg/m<sup>3</sup>

OSHA PEL - TWA: 1 mg/m<sup>3</sup>

ACGIH TLV - TWA: 1 mg/m<sup>3</sup>

ACGIH TLV - STEL: 3 mg/m<sup>3</sup>



**NIOSH REL - TWA:** N/A  
**NIOSH REL - STEL:** N/A  
**NIOSH - IDLH:** 1000 mg/m<sup>3</sup>

Section 9. Physical and Chemical Properties

**Appearance:** Liquid  
**Odor:** Slight  
**Odor threshold:** Not available  
**Color:** Dark Brown  
**pH:** 2 max (1% Solution)  
**Melting Point:** -12°C  
**Freezing Point:** -5°C  
**Boiling Range:** 101 - 103°C @ 760 mm hg  
**Flash Point:** Not data available  
**Ignition Temp.:** No data available  
**Thermal Decomposition:** > 160  
**Evaporation Rate:** Not available  
**Lower Explosive Limit:** Not available  
**Upper Explosive Limit:** Not available  
**Vapor Pressure:** Not available  
**Vapor Density:** Not available  
**Specific Gravity:** 1.32 - 1.42 @ 20°C  
**Solubility:** Soluble  
**Partition Coefficient (n-Octanol/Water):** <0  
**Viscosity:** max 75 cps @ 25°C  
**Molecular Weight:** 156.03

Section 10. Stability and Reactivity

**Stability:** The product is stable under recommended storage and handling conditions.  
**Hazardous Polymerization:** Polymerization will not occur.  
**Hazardous Decomposition Products:** Gives off hydrogen by reaction with metals. Oxides of carbon and oxides of phosphorous formed under decomposition/fire.  
**Materials to Avoid:** Corrodes base metals. Strong oxidizing agents, alkalis, and reducing agents  
**Conditions to Avoid:** Avoid exposure to extreme temperatures, incompatible materials, & combustible materials.

Section 11. Toxicological Information

**Acute Oral Toxicity**  
**LD50 Oral - Rat:** > 2754 mg/kg  
**Acute Inhalation Toxicity**  
**LC50 Inhalation:** No data available



**Acute Dermal Toxicity**

**LD50 Dermal:** No data available

**Corrosion/Irritation**

**Skin:** Skin irritation 2; H315 = Causes skin irritation

**Eyes:** Eye damage/irritation: Eye Damage 1; H318 = causes serious eye damage

**Carcinogenicity:** IARC, NTP, OSHA, ACGIH: *Not listed*

**Sensitization:** Skin potential

**Mutagenicity:** No data available.

**Reproductive Effects:** No data available.

**Teratogenic Effects:** No data available.

**Routes of Exposure:** Eyes, Skin, Inhalation, Ingestion

**Potential Health Effects**

**Eyes:** Causes serious eye damage.

**Skin:** Can cause burns to the skin. May cause sensitization by skin contact

**Inhalation:** May be harmful if inhaled. Can cause irritation to the respiratory tract and can induce coughing.

**Ingestion:** May be harmful if swallowed. May cause stomach pain or vomiting.

Section 12. Ecological Information

**All work practices must be aimed at eliminating environmental contamination.**

**Biodegradability in Soil/Water:** The product is expected to be biodegradable

**Bioaccumulative Potential:** Potential is low. Secondary poisoning via the food chain is unlikely to occur

**Terrestrial Ecotoxicity:** This material can be harmful or fatal to contaminated plants or animals, especially if large volumes are released into the environments.

**Aquatic Ecotoxicity (Acute)**

**Fish Toxicity:** Danio rerio (Zebrafish): - LC50 >820 mg/L/96h

**Aquatic Invertebrates:** Daphnia magna (Big Water Flea) EC50 140 mg/L/48

**Aquatic Invertebrates:** Algae IC50 30 mg/L/72h

**Mobility in Soil:** This product is miscible with water. May spread in water systems.

**Other Adverse Effects:** Do not allow to penetrate into soil, water bodies, or drains

Section 13. Disposal Considerations

**Waste Treatment Methods:** Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.



Section 14. Transport Information

**US DOT**

**UN Number:** UN3265

**Proper Shipping Name:** Corrosive Liquid, Acidic, Organic, N.O.S. (Hydroxyphospho-acetic acid)

**Hazard Class:** Class 8

**Packing Group:** PG II

**IMDG**

**UN Number:** UN3265

**Proper Shipping Name:** Corrosive Liquid, Acidic, Organic, N.O.S. (Hydroxyphospho-acetic acid)

**Hazard Class:** Class 8

**Packing Group:** PG II

**IATA**

**UN Number:** UN3265

**Proper Shipping Name:** Corrosive Liquid, Acidic, Organic, N.O.S. (Hydroxyphospho-acetic acid)

**Hazard Class:** Class 8

**Packing Group:** PG II

Section 15. Regulatory Information

**U.S. Federal Regulations**

**TSCA:** The ingredients of this product are listed on the TSCA inventory.

**CERCLA:** No components of this product are listed.

**SARA Title III (EPCRA) Section 313:** No components of this product are listed.

**SARA Title III (EPCRA) Section 311/312:** Immediate (Acute) Health Hazard

**Acute health hazard:** Yes

**Chronic health hazard:** No

**Fire Hazard:** No

**Pressure Hazard:** No

**Reactivity Hazard:** No

**Canadian WHMIS Classification:** D2(B) - Materials causing other toxic effects; E-Corrosion Material

**OSHA:** This product is Hazardous under the OSHA Hazard Communication standard

**California Proposition 65:** Not listed



**HMIS Rating**

**Health:** 3

**Flammability:** 0

**Reactivity:** 1

**Personal Protection:** C

**NFPA Rating**

**Health:** 3

**Flammability:** 0

**Reactivity:** 1

Section 16. Other Information

**Disclaimer:** The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

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