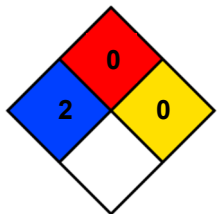


**HUMA**<sup>®</sup>**SAFETY DATA SHEET**  
**D-Fend**<sup>®</sup>

HMIS	
HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PPE	D

**SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION**

<b>PRODUCT IDENTIFIER:</b> D-Fend <sup>®</sup>	<b>Product # 200</b>				
<b>GENERAL USE:</b>	Used as a part of a plant nutrition program.				
<b>PRODUCT DESCRIPTION:</b>	A slightly hazy, light green to brown liquid having a unique characteristic odor.				
<b>SUPPLIER INFORMATION:</b>	<table border="1"> <tr> <td>Huma, Inc. 1331 W Houston Avenue Gilbert, AZ 85233</td> <td style="text-align: center;"><b>EMERGENCY PHONE NUMBERS</b></td> </tr> <tr> <td>For Additional SDS call: <b>PHONE: (480) 961-1220</b></td> <td><b>CHEMTREC: (In the USA) 800-424-9300 (International) 703-527-3887</b></td> </tr> </table>	Huma, Inc. 1331 W Houston Avenue Gilbert, AZ 85233	<b>EMERGENCY PHONE NUMBERS</b>	For Additional SDS call: <b>PHONE: (480) 961-1220</b>	<b>CHEMTREC: (In the USA) 800-424-9300 (International) 703-527-3887</b>
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**SECTION 2: HAZARDS IDENTIFICATION****HAZARDS OVERVIEW:**

A slightly hazy, light green to brown liquid having a unique characteristic odor. Exposure to this product's mists or liquid can cause severe irritation or burns to the eyes and may cause severe irritation, or possibly burns to the skin and respiratory tract, on prolonged exposure. **The NIOSH I. D. L. H. for Phosphoric Acid is: 1,000 mg/m<sup>3</sup>.**

**CLASSIFICATION:** HAZARD CATEGORY 1A - SKIN CORROSION**SIGNAL WORD:** DANGER**HAZARD STATEMENT:** H314; causes severe skin burns and eye damage**PRECAUTIONARY STATEMENT:** P260; Do not breathe dusts/mist/vapors. P280; Wear protective gloves/protective clothing/eye protection/face protection P264; Wash hands thoroughly after handling**CLASSIFICATION:** HAZARD CATEGORY 5 - MAY BE HARMFUL IF SWALLOWED**SIGNAL WORD:** WARNING**HAZARD STATEMENT:** H303 - WARNING – may be harmful if swallowed.**PRECAUTIONARY STATEMENT:** P301+P317—If swallowed, get emergency medical help.**SECTION 3: COMPOSITION & INFORMATION ON INGREDIENTS**

<u>COMPONENT</u>	<u>CAS #</u>	<u>OSHA HAZARD</u>	<u>WT %</u>	<u>ACGIH</u>		<u>OSHA</u>	
				<u>TLV<sub>(TWA)</sub></u>	<u>STEL</u>	<u>PEL<sub>(TWA)</sub></u>	<u>STEL</u>
Phosphoric Acid	7664-38-2	Corrosive; Lung Toxin	6 ± 2	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	None

NDA = No Data Available

N/A = Not Applicable

#### SECTION 4: FIRST AID MEASURES

<b>INHALATION:</b>	If inhaled, immediately move to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; use the Holger Nielsen method (back pressure-arm lift) or proper respiratory device. If breathing is difficult, give oxygen. Call a physician.
<b>EYE CONTACT:</b>	In case of contact, immediately flush eyes with plenty of clean running water for at least 15 minutes, lifting the upper and lower lids occasionally. Remove contact lenses, if worn. Get medical attention immediately.
<b>SKIN CONTACT:</b>	In case of contact, immediately flush skin with plenty of clean running water for at least 15 minutes, while removing contaminated clothing and shoes. If burn or irritation occurs, call a physician.
<b>INGESTION:</b>	If swallowed, DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give plenty of water to drink. Never give anything by mouth to an unconscious person.
<b>NOTE TO PHYSICIANS:</b>	Phosphoric Acid has a low oral toxicity, but it may be severely irritating and/or corrosive to the eyes, skin and mucous membranes. If ingested, consideration should be given to careful endoscopy as stomach or esophageal burns, perforations or strictures may occur. Careful gastric lavage with an endotracheal tube in place should be considered. Treat exposure symptomatically.

#### SECTION 5: FIRE FIGHTING MEASURES

<b>Flashpoint and Method:</b>	This product does not flash.		
<b>Flammable Limits (in air, % by volume)</b>	<b>Lower:</b> Not applicable	<b>Upper:</b> Not applicable	
<b>Autoignition Temperature:</b>	Not applicable		
<b>GENERAL HAZARD:</b>	This product is an aqueous solution of inorganic salts and natural plant oils that are in a low concentration Phosphoric Acid solution. The Uniform Fire Code health hazard classification for this product is: <b>Corrosive (Acidic)</b> . This product may produce hazardous mists or hazardous decomposition products.		
<b>FIRE FIGHTING INSTRUCTIONS:</b>	<b>EXTINGUISHING MEDIA:</b> Water, foam, CO <sub>2</sub> or dry chemicals. Use a water spray or fog to cool the containers exposed to the heat of a fire.		
<b>FIRE FIGHTING EQUIPMENT:</b>	Fire fighters should wear full protective equipment, including self-contained breathing apparatus.		
<b>HAZARDOUS COMBUSTION PRODUCTS:</b>	When heated to dryness and decomposition, it emits toxic Ammonia gas with toxic potassium, nitrogen, sulfur, zinc, manganese, copper and carbon oxides, plus trace or ultra-trace toxic oxide amounts, of iron, magnesium, calcium and sodium, along with dense, irritating smoke.		

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

<b>RELEASE TO LAND:</b>	Wearing recommended protective equipment and clothing, dike the spill and pick up the bulk of liquid using pumps or a vacuum truck, or absorb the liquid in sand or a commercial absorbent. Place in approved containers for recovery, disposal, or satellite accumulation. Neutralize the acidity, of the remaining liquid, using soda ash, lime, or other agent appropriate for neutralizing acidic liquids. Flush the spill area with water; collect the rinsates for disposal or sewer, as appropriate.
<b>RELEASE TO WATER:</b>	Wear recommended protective equipment and clothing if contact with hazardous material can occur. Stop or divert water flow. Dike contaminated water and remove for disposal and/or treatment. As appropriate, notify all downstream users of possible contamination.

#### SECTION 7: HANDLING AND STORAGE

<b>STORAGE TEMPERATURE:</b>	Ambient	<b>STORAGE PRESSURE:</b>	Ambient
<b>GENERAL:</b>	Store in a cool, dry, well-ventilated area, away from incompatible materials and products. Protect eyes, skin and clothing from contact with this product. Wear recommended personal protective equipment when handling this product. Avoid breathing vapors, aerosols or mists. Use with adequate ventilation. Do not take internally. Keep the container tightly closed when not in use. Wash thoroughly with soap and water, after handling this product.		

## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**CONTROL MEASURES:** Use a local or general, mechanical exhaust ventilation system capable of maintaining emissions, in the work area, below the ACGIH-TLV, OSHA Ceiling level or levels that may cause irritation.

### RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

**RESPIRATOR:** For exposure above the ACGIH-TLV, OSHA-PEL or levels that may cause irritation, wear a NIOSH-approved full facepiece or half mask air-purifying cartridge respirator equipped with a good mist / particulate filter cartridge or supplied air. For exposures to Phosphoric Acid greater than 25 mg/m<sup>3</sup>, a supplied air respirator operated in the continuous flow mode is recommended. **Note:** Always consult the respirator manufacturer's data when determining the suitability of respiratory protective devices prior to use.

**EYES:** Wear chemical goggles (recommended by ANSI Z87.1-1979), unless a full facepiece respirator is worn. **Note:** Always consult the protective eyewear manufacturer's data when determining the suitability of protective eyewear prior to use.

**GLOVES:** Wear Neoprene, Nitrile, Butyl Rubber or Natural Rubber gloves. **Note:** Always consult the glove manufacturer's permeation data when determining the suitability of gloves prior to use.

**CLOTHING & EQUIPMENT:** Wear a Neoprene, Nitrile, Butyl Rubber or Natural Rubber apron when handling this product. An eye wash station and safety shower should be available in the work area. **Note:** Always consult the clothing/equipment manufacturer's permeation data when determining the suitability of clothing/equipment prior to use.

**FOOTWEAR:** Wear Neoprene, Nitrile, Butyl Rubber or Natural Rubber boots. **Note:** Always consult the footwear manufacturer's permeation data when determining the suitability of footwear prior to use.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	slightly hazy, light green to brown	<b>Bulk Density (pounds/ft<sup>3</sup>):</b>	Not applicable
<b>Physical State:</b>	Liquid	<b>Vapor Pressure:</b>	No data available
<b>Odor:</b>	Unique, characteristic	<b>Vapor Density (air=1):</b>	No data available
<b>Odor Threshold:</b>	No data available	<b>Evaporation Rate (n-Butyl Acetate=1):</b>	No data available
<b>Molecular Formula:</b>	Mixture	<b>VOC Content / Organic Matter:</b>	No data available / 3.0%
<b>Molecular Weight:</b>	Not applicable	<b>% Volatile:</b>	No data available
<b>Boiling Point:</b>	Greater than 100° C. (212° F.)	<b>Solubility in H<sub>2</sub>O:</b>	Soluble
<b>Freezing/Melting Point:</b>	Less than 0° C. (32° F.)	<b>Octanol/Water Partition Coefficient:</b>	No data available
<b>Specific Gravity:</b>	1.08 @ 20° C.	<b>pH (as is):</b>	1.0 - 2.0
<b>Density (pounds/gallon):</b>	Approximately 9.01	<b>pH (1% solution):</b>	No data available

## SECTION 10: STABILITY AND REACTIVITY

**GENERAL:** This product is stable and hazardous polymerization will not occur.

**CONDITIONS TO AVOID:** Store in a cool dry place, do not store in direct sunlight.

**INCOMPATIBLE MATERIAL:** Caustics & strong alkali, cyanides, sulfides, sulfites, chlorine releasers, Aluminum, Magnesium, Zinc and alloys of these metals.

**HAZARDOUS DECOMPOSITION PRODUCTS:** When heated to dryness and decomposition, it emits toxic Ammonia gas with toxic potassium, nitrogen, sulfur, zinc, manganese, copper and carbon oxides, plus trace or ultra-trace toxic oxide amounts, of iron, magnesium, calcium and sodium, along with dense, irritating smoke.

**SENSITIVITY TO MECHANICAL IMPACT:** This product is not sensitive to mechanical impact.

**SENSITIVITY TO STATIC DISCHARGE:** This product is not sensitive to static discharge.

## SECTION 11: TOXICOLOGICAL INFORMATION

<b>Components:</b>	<u>Phosphoric Acid</u>
<b>Eye Contact:</b>	Rabbit: 119 mg; Severe
<b>Skin Contact:</b>	Rabbit: 595 mg/24 hours; Severe
<b>Oral Rat LD<sub>50</sub>:</b>	1,530 mg/kg
<b>Dermal Rabbit LD<sub>50</sub>:</b>	2,740 mg/kg
<b>Inhalation Rat LC<sub>50</sub>:</b>	Greater than 850 mg/m <sup>3</sup> /1 hour
<b>Human Data:</b>	Unreported Route Man LD <sub>Lo</sub> : 220 mg/kg
<b>Other Toxicological Data:</b>	Oral Man TD <sub>Lo</sub> : 1,286 uL/kg
<b>Carcinogenicity:</b>	No data available
<b>Teratogenicity:</b>	No data available
<b>Mutagenicity:</b>	No data available
<b>Synergistic Products:</b>	None reported
<b>Target Organs:</b>	Eyes, Skin, Mucous membranes, Lungs & Gastrointestinal tract
<b>Medical Conditions Aggravated By Exposure:</b>	Skin, Respiratory or Gastrointestinal disorders

## SECTION 12: ECOLOGICAL INFORMATION

### ENVIRONMENTAL FATE:

This product is heavier than water, soluble in water and will affect the pH of the water. Inorganic phosphates, in contact with soil, sub-surface or surface waters, may be taken up by plants and utilized as essential nutrients. Phosphates may also form precipitates, usually with Calcium or Magnesium. The resultant compounds are insoluble, becoming part of the soil.

### ENVIRONMENTAL CONSIDERATIONS:

The aquatic toxicity for this product is related to the pH of the water. For Rainbow trout, the reported LC<sub>50</sub> is about a pH of 4.0 for a 7 day bioassay. Other species may vary a bit from this pH level, but all are susceptible to acidic pH conditions.

## SECTION 13: DISPOSAL CONSIDERATIONS

**RCRA 40 CFR 261 CLASSIFICATION:** Non-RCRA Hazardous Waste

**U.S. EPA WASTE NUMBER/DESCRIPTION:** Not Applicable

If this product is disposed of as shipped, it does not meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of a hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D due to toxicity. As a non-RCRA hazardous liquid waste, it should be disposed of in accordance with all local, state, and federal regulations. Consult state or local officials for proper disposal method.

## SECTION 14: TRANSPORTATION INFORMATION

<b>DOT PROPER SHIPPING NAME:</b>	Phosphoric acid solution	<b>Hazard Class:</b> 8	<b>UN Number:</b> UN1805	<b>Packing Group:</b> III
		<b>Primary Label:</b> Corrosive	<b>Subsidiary Label(s):</b> None	
		<b>Primary/Subsidiary Placards:</b>	Corrosive	
<b>DOT Reportable Quantity (RQ):</b>	5,000 pounds (H <sub>3</sub> PO <sub>4</sub> )	<b>RQ for Product:</b>	250,000 pounds (27,560 gallons)	
<b>Marine Pollutant:</b>	No			
<b>2012 North American Emergency Response Guidebook No.:</b>	154			
<b>TDG PROPER SHIPPING NAME:</b>	Phosphoric acid solution	<b>Hazard Class:</b> 8	<b>UN Number:</b> UN1805	<b>Packing Group:</b> III
		<b>Primary Label:</b> Corrosive	<b>Subsidiary Label(s):</b> None	
		<b>Primary/Subsidiary Placards:</b>	Corrosive	
<b>TDG Reportable Quantity (RQ): *</b>	At least 5 kg or 5 liters.			
<b>TDG Schedule XII:</b>	Not listed			
<b>Regulated Limit (RL): **</b>	230 kg (H <sub>3</sub> PO <sub>4</sub> )	<b>RL for Product:</b>	11,500 kg (10,580 liters)	
<b>Other Shipping Information:</b>	None			

\* Canadian Transportation of Dangerous Goods Regulations (TDGR), Part IX, Table I, Quantities or levels for Immediate Reporting: releases of reportable quantities, RQ, that meet the definition of a "dangerous occurrence" (a threat to life, health, property, or the environment) must be reported to the appropriate authorities as outlined in TDGR 9.13(1) and 9.14(1).

\*\* Reporting to Environment Canada is required for any releases exceeding the regulated limits, RL, of 9.2 materials (primary or secondary). The regulated limits are found in Schedule XIII of the TDGR.

## SECTION 15: REGULATORY INFORMATION

**COMPONENTS:** Phosphoric Acid

**OSHA Target Organs:** Eyes, Skin, Mucous membranes,  
Lungs & Gastrointestinal tract

### **Carcinogenic Potential:**

**Regulated by OSHA:** No  
**Listed on NTP Report:** No  
**Listed by IARC:** No  
IARC Group: Not applicable  
**ACGIH Appendix A:** Not listed  
A1 Confirmed Human: Not applicable  
A2 Suspected Human: Not applicable

### U.S. EPA Requirements

#### **Release Reporting**

##### **CERCLA (40 CFR 302)**

**Listed Substance:** Yes  
Reportable Quantity: 5,000 pounds  
Category: D  
RCRA Waste No.: Not listed  
**Unlisted Substance:** Not applicable  
Reportable Quantity: Not applicable  
Characteristic: Not applicable  
RCRA Waste No.: Not applicable

### SARA TITLE III

#### **Section 302 & 303 (40 CFR 355):**

**Listed Substance:** Not listed  
Reportable Quantity: Not applicable  
Planning Threshold: Not applicable

#### **Section 311 & 312 (40 CFR 370):**

Hazard Categories (product): **Fire: N Sudden Release of Pressure: N Reactive: N Acute Health: Y Chronic Health: N**  
Planning threshold: 10,000 pounds

#### **Section 313 (40 CFR 372):**

**Listed Toxic Chemical:** No (Delisted in 2000)  
Reporting Threshold: Not applicable

### U.S. TSCA Status

**Listed (40 CFR 710):** Yes

### State Regulations

#### **State of California: Safe Drinking Water and Toxins Enforcement Act, 1986 (Proposition 65):**

Carcinogen: No  
Reproductive Toxin: No

### Other Regulations

**State Right To Know Laws:** MA, NJ, PA

### Canadian Regulations

#### **Product Information:**

Controlled Product: **Yes**  
WHMIS Hazard Symbols: **Corrosive Material**  
WHMIS Class & Division: **E**

#### **Ingredient Information:**

IDL Substance: Yes  
DSL or NDSL Lists: DSL

**SECTION 16: OTHER INFORMATION**

**EPA Registration number:** Not applicable

**Approved Product Uses:** Used as a part of a plant nutrition program.

**Special Notes:**

This product is not manufactured, or formulated to contain substances, which the State of California has found to cause cancer and/or birth defects or other reproductive harm. However, as it contains mined minerals, this product may contain trace (parts per million) or ultra-trace (parts per billion) of elements known to the State of California to cause cancer, birth defects or other reproductive harm.

**Special Instructions:**

When making solutions, always add this product to water or other solutions with adequate mixing to ensure a uniform solution.

Do not add this product to hypochlorite bleaches, chlorine sanitizers or chlorinated cleaners as this liberates toxic, corrosive Chlorine gas.

Do not add this product to strong alkali or caustics as this will release a large amount of heat and toxic Ammonia gas.

**SDS Revision Information:**      **Revision Date:** 6/20/2023

**SDS Distributed by:** Huma, Inc.

<b>Prepared By:</b> Anna Carpenter	<b>Date Prepared:</b> October 21, 2014
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