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MATERIAL TECHNICAL SAFETY DATA

1. IDENTIFICATION

Product Name : PHOSPHOROUS ACID

Synonyms: Phosphonic Acid, Phosphorous Acid

CAS No.: 13598-36-2

Molecular Weight: 82.0

Chemical Formula: H₃PO₃

2. TECHNICAL DATA

Specification:

Testing Item	Top Grade	First Grade I	First Grade III
Content (%)	99.0 Min	98.5 Min	98.0 Min
Iron (%)	0.001Max	0.005 Max	0.005 Max
Chloride (Cl) (%)	0.001 Max	0.01 Max	0.02 Max
Sulfate (SO ₄) (%)	0.008 Max	0.008 Max	0.01 Max
Phosphate (PO ₄) (%)	0.2 Max	0.2 Max	0.6 Max
Appearance	Pure White Crystal	White Crystal	White Crystal

3. HAZARDS IDENTIFICATION

Emergency Overview

Danger! Causes eye and skin burn. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. Hygroscopic (absorbs moisture from the air). Air sensitive.

Target Organs: Lungs, eyes, skin, mucous membranes.

Eye:

Contact with liquid is corrosive to the eyes and causes severe burns.

Skin:

Contact with liquid is corrosive and causes severe burns and ulceration. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.

Ingestion:

Causes gastrointestinal tract burns.

Inhalation:

May lead to chemical pneumonitis and pulmonary edema. Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. Aspiration may lead to pulmonary edema. May cause systemic effects.

Chronic:

Effects may be delayed. Repeated contact may cause corneal damage.

4. FIRST AID MEASURES

Eye:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

Skin:

In case of contact, immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

Ingestion:

If swallowed, DO NOT INDUCE VOMITING. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure demand, and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Substance is noncombustible. Contact with metals may evolve flammable hydrogen gas.

Extinguishing Media:

For small fires, use water spray, dry chemical, carbon dioxide or chemical foam. Do not get water inside containers. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray.

6. ACCIDENTAL RELEASE MEASURES

General Information:

Use proper personal protection equipment as indicated in Section 8.

Spills/ Leaks:

Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Cover with sand, dry lime or soda ash and place in a closed container for disposal. Provide ventilation.

7. HANDLING AND STORAGE

Handling:

Wash thoroughly after handling. Minimize dust generation and accumulation. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Use only in a chemical fume hood. Discard contaminated shoes.

Storage:

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from metals, corrosives area. Do not store in metal containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Control:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Eyes:

Wear chemical goggles.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White Crystals

Odor: Faint characteristic odor.

Solubility: Soluble

Boiling Point: 200 deg C

Melting Point: 73 deg C

Decomposition Temperature: 180 deg C Min.

Specific Gravity: 1.6510g/M3

10. STABILITY AND REACTIVITY

Chemical Stability:

Stable at room temperature in closed containers under normal storage and handling conditions. Hygroscopic: absorbs moisture or water from the air, also reacts with air to form Phosphoric Acid.

Conditions to Avoid:

Dust generation, exposure to air, excess heat.

Incompatibilities with Other Material:

Water, metals, strong oxidizing agents, strong reducing agents, strong bases.

Hazardous Decomposition Products:

Oxides of phosphorus, phosphine.

11. TOXICOLOGICAL INFORMATION

LD50 oral mouse: 1700mg/kg

LD50 oral rat: 1895mg/kg

12. Ecological Information

No Information available

13. DISPOSAL CONSIDERATIONS

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Waste generators must consult state and local government hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORTATION INFORMATION

Proper Shipping Name: Phosphorous Acid

Hazard Class: 8 UN/NA: 2834

Packing Group: III

15. REGULATORY INFORMATION

Clean Air Act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material

does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

16. ADDITIONAL INFORMATION

MSDS Creation Time: December, 2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users Should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

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