SAFETY DATA SHEET

Product Name
HYDROGEN CYANIDE

1. IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Name: HYDROGEN CYANIDE

Product Code: 193-0107-00

Recommended Use of the Chemical and Restriction on Use: Industrial use

Details of Manufacturer or Importer: Advanced Calibration Designs, Inc.
2024 W. McMillian St.
Tucson, AZ 85705 USA

Phone Number: 520-290-2855

Emergency Telephone Number: 1-800-222-1222

2. HAZARDS IDENTIFICATION


Label Elements
Signal Word Danger
Hazard Statements 1B H314 Causes severe skin burns and eye damage.
Precautionary Statements
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P264 Wash hands thoroughly after handling.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 Specific treatment (see on this label).
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P363 Wash contaminated clothing before reuse.
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P310 Immediately call a POISON CENTER/doctor.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national regulations.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Characterization: Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Hazardous Components:

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid</td>
<td>75–85%</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.

Skin Contact: In case of skin contact, immediately remove contaminated clothing and wash affected areas with water and soap. Seek medical attention if symptoms occur.

Eye Contact: In case of eye contact, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.

Ingestion: If swallowed, do not induce vomiting. Give water, milk, or milk of magnesia. Do not give anything by mouth to an unconscious person. Seek immediate medical attention.

Information for Doctor
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Symptoms Caused by Exposure:

Inhalation:
Burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting

Skin Contact:
Severe irritation or burns. Eye Contact: Severe irritation or burns. Ingestion: Severe irritation or burns.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:
Use fire extinguishing methods suitable to surrounding conditions.

Specific Hazards Arising from the Chemical:
Emits toxic fumes under fire conditions. Non-combustible liquid.

Special Protective Equipment and Precautions for Fire Fighters:
Wear approved self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:
Wear approved self-contained breathing apparatus and full protective clothing. Evacuate all non-essential personnel from affected area. Do not breathe vapors/mists. Ensure adequate ventilation.

Environmental Precautions:
In the event of a major spill, prevent spillage from entering drains or water courses.

Methods and Materials for Containment and Cleaning Up:
Stop leak if safe to do so and neutralize spill with soda ash or lime. Absorb spill with sand, earth, vermiculite or some other absorbent material. Collect the spilled material and place into a suitable container for disposal. Provide adequate ventilation. Neutralize spill with soda ash or lime.

7. HANDLING AND STORAGE

Precautions for Safe Handling:
Use of safe work practices are recommended to avoid eye or skin contact and inhalation of vapors/mists. Food, beverages and tobacco products should not be stored or consumed where this material is in use. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Provide eyewash fountains and safety showers in close proximity to points of potential exposure.

Conditions for Safe Storage:
Store in a cool, dry and well ventilated area. Keep container tightly closed when not in use. Keep away from strong bases, finely powdered metals. Check regularly. Protect from physical damage.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Standards:

<table>
<thead>
<tr>
<th>7664-38-2 Phosphoric acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>NES</td>
</tr>
</tbody>
</table>

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor below occupational exposure standards.

Personal Protective Equipment (PPE):

Respiratory Protection:
Respiratory protection required if airborne concentration exceeds TLV. At concentrations up to 12 ppm, a high efficient particulate filter is recommended. Above this level, a self-contained breathing apparatus is advised.

Skin Protection:
Polyvinyl alcohol gloves. Occupational protective clothing (depending on conditions in which it has to be used, in particular as regards the period for which it is worn, which shall be determined on the basis of the seriousness of the risk, the frequency of exposure to the risk, the characteristics of the workstation of each worker and the performance of the protective clothing).

Eye and Face Protection:
Eye and face protectors for protection against splashing materials or liquids.
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9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not determined.</td>
</tr>
<tr>
<td>pH-value</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Melting point/melting range</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Initial boiling point/boiling range</td>
<td>158 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability</td>
<td>Non-combustible liquid</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not determined</td>
</tr>
<tr>
<td>Explosion limits:</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor pressure at 20°C</td>
<td>2.2 mm Hg</td>
</tr>
<tr>
<td>Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative Density at 20°C</td>
<td>1.685 g/cm³</td>
</tr>
<tr>
<td>Vapor Density at 20°C</td>
<td>3.4 g/cm³</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Miscible</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Possibility of Hazardous Reactions: Hazardous polymerization will not occur. Chemical Stability: Stable at ambient temperature and under normal conditions of use. Conditions to Avoid: No further relevant information available.

Incompatible Materials: Strong bases and finely powdered metals.

Hazardous Decomposition Products: Oxides of phosphorus.

11. TOXICOLOGICAL INFORMATION

Toxicity:

<table>
<thead>
<tr>
<th>7664-38-2 Phosphoric acid</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD₅₀</td>
<td>1530 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal LD₅₀</td>
<td>2740 mg/kg (rabbit)</td>
</tr>
<tr>
<td>Inhalation LC₅₀/1 h</td>
<td>&gt;850 mg/m³ (rat)</td>
</tr>
</tbody>
</table>

Acute Health Effects

Inhalation:
May cause severe irritation of the respiratory system. Skin: May cause severe irritation or burns.

Eye:
May cause severe irritation or burns.

Ingestion:
May cause severe burns to the mouth, esophagus and stomach.

Skin Corrosion / Irritation:
Causes severe skin burns. Serious Eye Damage / Irritation: Causes serious eye damage.

Respiratory or Skin Sensitization:
No sensitizing effects known.

Germ Cell Mutagenicity: Based on classification principles, the classification criteria are not met. Carcinogenicity:
This product does NOT contain any IARC listed chemicals.

Reproductive Toxicity:
Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity (STOT) - Single Exposure:
Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity (STOT) - Repeated Exposure:
Based on classification principles, the classification criteria are not met.

Aspiration Hazard:
Based on classification principles, the classification criteria are not met.

Chronic Health Effects:
Material is extremely destructive to the mucus membranes and upper respiratory tract, eyes, and skin.

Existing Conditions Aggravated by Exposure:
No information available

12. ECOLOGICAL INFORMATION

Eco toxicity:
No information available

Aquatic toxicity:
No information available

Persistence and Degradability:
No information available

Bio-accumulative Potential:
No information available

Mobility in Soil:
No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods and Containers:
Dispose according to applicable local and state government regulations.

Special Precautions for Landfill or Incineration:
Please consult your state Land Waste Management Authority for more information.

14. TRANSPORT INFORMATION

UN Number
ADG, IMDG, IATA
UN1805

Proper Shipping Name
ADG
1805 PHOSPHORIC ACID, SOLUTION

IMDG
PHOSPHORIC ACID, SOLUTION

Dangerous Goods Class
ADG Class:
8 (C1) Corrosive substances.

IMDG Class:
8 Corrosive substances.

Packing Group:
ADG, IMDG, IATA
III

Marine pollutant:
No

EMS Number:
F-A-S-B

Hazchem Code:
2R

Special Provisions:
223

Limited Quantities:
5L

Packaging & IBCs - Packing Instruction:
P001, IBC03, LP01

Packaging & IBCs - Special Packing Provisions:
Not applicable

Portable Tanks & Bulk Containers - Instructions:
T4

Portable Tanks & Bulk Containers - Special Provisions:
TP1

15. REGULATORY INFORMATION

Inventory of Chemical Substances:
7664-38-2 Phosphoric acid
7732-18-5 Water

Standard for the Uniform Scheduling of Drugs and Poisons (SUSMP) - Poison Schedule:
Poisons Schedule: 6
16. OTHER INFORMATION

Creation Date: 10/27/2015

Abbreviations and acronyms:
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds
- LC₅₀: Lethal concentration, 50 percent
- LD₅₀: Lethal dose, 50 percent
- IARC: International Agency for Research on Cancer
- STEL: Short Term Exposure Limit
- TWA: Time Weighted Average
- NES: National Exposure Standard

Disclaimer
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