SDS

Safety Data Sheet

1. IDENTIFICATION

Product Identifier: **Phosphoric Acid, 0.085% w/w in Acetonitrile**

Product Code(s): P1153

Synonyms: o-Phosphoric Acid Solution in Acetonitrile; White Phosphoric Acid Solution in Acetonitrile; Trihydrogen Phosphate Solution in Acetonitrile

Recommended Use: For manufacturing, industrial, and laboratory use only. Use as catalyst, as a solvent, or as a laboratory reagent.

Uses Advised Against: Not for food, drug, or household use.

Supplier: Rocky Mountain Reagents, Inc.
4621 Technology Drive, Golden, CO 80403
Phone: (303) 762-0800 Fax: (303) 762-1240

Emergency Phone Number: (800) 255-3924 (VelocityEHS)

2. HAZARDS IDENTIFICATION

Hazard Classifications:

Eye Damage/Irritation:	Category 2A
Specific Target Organ Toxicity (Single Exposure):	Category 3
Specific Target Organ Toxicity (Repeated Exposure):	Category 2
Flammable Liquids:	Category 2

Signal Word: DANGER

Hazard Statements: Causes serious eye irritation.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.
Highly flammable liquid and vapor.

Pictograms:



Precautionary Statements:

Prevention: Wash thoroughly after handling.
Wear protective gloves, eye protection, and face protection.

Do not breathe fume, mist, vapors, or spray.
Use only outdoors or in a well-ventilated area.
Keep away from heat, sparks, open flames, and hot surfaces. – No smoking.
Keep container tightly closed.
Ground container and receiving equipment.
Use explosion-proof electrical, ventilating, lighting, and transportation equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.

Response: Get medical attention if you feel unwell.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
In case of fire: Use water spray, dry powder, alcohol resistant foam, or carbon dioxide to extinguish.

Storage: Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Store locked up.

Disposal: Dispose of contents and container in accordance with local, regional, national, and international regulations

Hazards Not Otherwise Classified: Harmful if swallowed, inhaled, or absorbed through the skin. May convert to hydrogen cyanide if absorbed into the body.

Toxicity Statement: Not applicable.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Component	Common Name / Synonyms	CAS#	Chemical Formula	% by Weight
Acetonitrile	Methyl Cyanide; Cyanomethane	75-05-8	C_2H_3N	99.9
Water	Water	7732-18-5	H_2O	0.0150
Phosphoric Acid	Trihydrogen Phosphate	7664-38-2	H_3PO_4	0.0850

Trade Secret Statement: Not applicable.

4. FIRST AID MEASURES

First Aid Procedures:

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, keep head low so that vomit does not enter lungs. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin Contact: Remove contaminated clothing and shoes. Wash skin with plenty of water for at least 15 minutes. Wash clothing before reuse. Get medical attention if symptoms occur.

Eye Contact: Check for and remove contact lenses if present and easy to do. Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention if symptoms occur.

General Advice:	Poison information centers in each state can provide additional assistance for scheduled poisons. Ensure that medical personnel and those providing first aid are aware of the material(s) involved and take precautions to protect themselves.
Symptoms and Effects:	Inhalation may cause headache, drowsiness, dizziness, fatigue, coughing, wheezing, shortness of breath, and hoarseness. Ingestion may cause nausea, vomiting, diarrhea, abdominal pain, weakness, loss or coordination, collapse, and unconsciousness. Skin contact may cause irritation. Eye contact may cause irritation. Prolonged or repeated exposure may affect the kidneys, liver, and central nervous system, may cause developmental effects, reproductive effects, mutagenic effects, teratogenic effects, and allergic reactions.
Immediate Medical Care/ Special Treatment:	Get medical attention if feeling unwell or concerned. Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media:	Water spray, dry powder, alcohol resistant foam, carbon dioxide.
Unsuitable Extinguishing Media:	Do not use a solid (straight) water stream, as it may scatter and spread fire.
Hazardous Combustion Products:	Carbon oxides, nitrogen oxides, hydrogen, phosphorus compounds.
Specific Hazards:	Highly flammable. Vapors may cause flash fire or ignite explosively. Burns vigorously if ignited easily by heat, sparks, or flames. Material may burn with an invisible flame. Sealed containers may explode when heated or involved in fire. Material is sensitive to static discharge. Vapors may travel considerable distance to source of ignition and flash back. Vapor from the solvent may accumulate in container headspace, resulting in flammability hazard. Contact with metals may yield hydrogen gas.
Special Protective Equipment/ Precautions for Firefighters:	As in any fire, wear MSHA/NIOSH-approved (or equivalent), self-contained, positive-pressure or pressure-demand breathing apparatus and full protective gear. Use water spray to cool unopened containers. Move containers from fire area if you can do so without risk. This material may evaporate and leave a flammable residue if spilled. In the event of fire and/or explosion, do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment:	Ventilate area of leak or spill. Isolate hazard area and keep unnecessary and unprotected personnel away from the area of the leak or spill. Keep upwind. Keep out of low areas. Wear appropriate personal protective equipment (see Section 8). Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharge. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. Avoid contact with eyes, skin, and clothing.
Emergency Procedures:	Evacuate surrounding personnel as needed. In case of chemical emergency, or if unsure how to address an accidental release, consult a professional (see Section 1).
Methods for Containment:	Eliminate all sources of ignition. Stop the flow of material if this is without risk. Prevent entry into waterways, sewer, basements, or confined areas. Dike the spilled material, where this is possible. Product should not be released to the environment. Contain and recover waste when possible.
Methods for Cleanup:	Absorb spill with an inert material (e.g. vermiculite, dry sand, earth, cloth, or fleece) and place in a non-combustible container for reclamation or disposal. Do not flush to sewer. Clean contaminated surface thoroughly. Residues from spills can be neutralized with dilute

sodium carbonate solution. Never return spills in original containers for reuse. Clean up in accordance with all applicable regulations.

7. HANDLING AND STORAGE

Handling: Do not handle, store, or open near an open flame, sources of heat, or sources of ignition. Wear personal protective equipment (see Section 8). Use only in well-ventilated areas. Provide sufficient air exchange and/or exhaust in work areas. Avoid contact with skin, eyes, and clothing. Do not breathe vapors or spray mist. Do not ingest. When using, do not eat, drink, or smoke. Take precautionary measures against static discharge. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials (see Section 10). Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Containers of this material may be hazardous when empty, as they retain product residues. Observe all warnings and precautions listed for this product.

Storage: Store in a cool, dry, ventilated area. Store in a segregated and approved area away from heat, sources of ignition, and incompatible materials (see Section 10). Store in original container. Keep containers tightly closed and upright. Keep away from food, drink, and animal foodstuffs. Keep out of the reach of children. Ground container and transfer equipment. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of this product.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:

Acetonitrile:	ACGIH:	TWA:	20 ppm
	OSHA:	TWA:	40 ppm
		STEL:	60 ppm
	NIOSH:	TWA:	20 ppm
		IDLH:	500 ppm
Water:	No information found.		
Phosphoric Acid:	OSHA (PEL):		1 mg/m^3
	ACGIH (TLV):		1 mg/m^3
	ACGIH (STEL):		3 mg/m^3

Engineering Controls: Ensure adequate ventilation. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Measures:

Eye/Face Protection: Wear safety glasses with side shields or safety goggles. Wear a face shield. Maintain approved eye wash station and accessible rinse facilities in work area.

Skin Protection: Wear appropriate chemical resistant clothing (with long sleeves) and appropriate chemical resistant gloves.

Respiratory Protection: An air-purifying, NIOSH-approved respirator with appropriate cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a positive-pressure, air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are unknown, or if any other circumstances exist where air-purifying respirators may not provide adequate protection.

Specific Requirements for Personal Protective Equipment:	Ensure that glove material is compatible with this product. This information is available from glove manufacturers.

9. PHYSICAL AND CHEMICAL PROPERTIES

Unless otherwise indicated, all properties are given at 25 °C and standard pressure.

Appearance:	Colorless, transparent liquid.
Odor:	Characteristic, aromatic.
Odor Threshold:	No information found.
Formula Weight:	Mixture.
pH:	No information found.
Melting/Freezing Point:	≈ -46 °C
Boiling Point/Range:	≈ 82 °C
Decomposition Temperature:	No information found.
Flash Point:	≈ 12.8 °C, closed cup
Auto-ignition Temperature:	≈ 524 °C
Flammability:	Flammable liquid and vapor.
Flammability/Explosive Limits:	Lower: 3% by volume Upper: 16% by volume
Solubility:	Miscible with water.
Vapor Pressure:	≈ 90 mmHg
Vapor Density:	≈ 1.42 (Air = 1)
Specific Gravity:	0.786 (Water = 1)
Evaporation Rate:	5.79 (Butyl Acetate = 1)
Viscosity:	No information found.
Partition Coefficient (n-octanol/water):	≈ -0.34

10. STABILITY AND REACTIVITY

Reactivity Data:	Highly flammable. See Section 9.
Chemical Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat, flames, sparks, sources of ignition, direct sunlight, moisture, incompatible materials.
Incompatible Materials:	Strong oxidizers, strong reducers, strong acids, bases, organic compounds, metals.
Hazardous Decomposition Products:	Carbon oxides, nitrogen oxides, hydrogen, phosphorus compounds.
Possibility of Hazardous Reactions:	May react vigorously, violently, or explosively if exposed to extreme thermal conditions or in contact with the incompatible materials listed above. Contact with metals may produce hazardous concentrations of hydrogen gas.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure: Inhalation, ingestion, skin contact, eye contact.

Acute Effects: Harmful if exposed to the eyes. May be harmful if swallowed, inhaled, or exposed to the skin. May convert to hydrogen cyanide if absorbed into the body. May cause drowsiness or dizziness if inhaled.

Chronic Effects: Prolonged or repeated exposure may affect the kidneys, liver, and central nervous system; may cause developmental effects, reproductive effects, mutagenic effects, teratogenic effects, skin sensitization, and respiratory sensitization.

Toxicological Data:

Acetonitrile: LD_{50} Oral, Rat: 2730 mg/kg
LC_{50} Inhalation, Rat: 7751 mg/L 8 h
Causes eye irritation based on animal data.

Water: Not applicable.

Phosphoric Acid: LD_{50} Oral, Rat: 1530 mg/kg
LD_{50} Dermal, Rabbit: 2740 mg/kg
Corrosive to skin and eyes based on animal data.
May cause mutagenic effects based on animal data.

Symptoms of Exposure: Irritation, burns, headache, drowsiness, dizziness, fatigue, nausea, vomiting, diarrhea, abdominal pain, weakness, loss of coordination, collapse, unconsciousness, laryngitis, bronchitis, pneumonitis, pulmonary edema, coughing, wheezing, shortness of breath, hoarseness.

Carcinogenic Effects: No component of this product is considered to cause cancer by IARC, ACGIH, NTP, or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicological Data:

Acetonitrile: EC_{50}, Fathead Minnow (Pimephales promelas): 1640 mg/L 96 h

Water: No information found.

Phosphoric Acid: No information found.

Persistence and Degradability: Not expected to bioaccumulate.

Environmental Effects: May be harmful to aquatic organisms. May affect pH of aquatic environments. Avoid release to the environment.

13. DISPOSAL INFORMATION

Disposal Instructions: All wastes must be handled in accordance with local, state, and federal regulations. Minimize exposure to product waste (see Section 8). Do not dispose unused waste down drains or into sewers.

Contaminated Packaging: Because emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near product container. Offer rinsed packaging material to local recycling facilities.

Waste Codes: Acetonitrile: U003 (RCRA U Series)

14. TRANSPORT INFORMATION

DOT:

UN Number: UN1648

Proper Shipping Name: Acetonitrile

Hazard Class: 3

Packing Group: II

ERG Number: 127

Environmental Hazard Regulations: No information found.

Other Transport Precautions: DOT Reportable Quantity: Acetonitrile: 5000 lb
Phosphoric Acid: 5000 lb

15. REGULATORY INFORMATION

U.S. Federal Regulations:

OSHA: This product is considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Inventory: All components of this product are on the U.S. TSCA Inventory.

U.S. EPCRA (SARA Title III):

Section 302: No information found.

Sections 311/312:

Hazard Category	List (Yes/No)
Section 311 – Hazardous Chemical	Yes
Immediate Hazard	Yes
Delayed Hazard	Yes
Fire Hazard	Yes
Pressure Hazard	No
Reactivity Hazard	No

Section 313: De Minimis Concentration: Acetonitrile: 1.0%

CERCLA Reportable Quantities: Phosphoric Acid: 5000 lb
Acetonitrile: 5000 lb

California Proposition 65: This product does not contain any chemicals known to State of California to cause cancer or reproductive harm.

International Inventories:

Country or Region	Inventory Name	On Inventory (Yes/No)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*A "Yes" indicates that the listed components of this product comply with the inventory requirements administered by the governing country or region.

16. OTHER INFORMATION

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