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Material Safety Data Sheet

1. Product Identification

Product Name : **Phosphorus Kit (Molybdate U.V. Method)**
Catalog Number : PHO 010 / PHO 011

2. Composition / Information on Hazardous Ingredients

Chemical Name	CAS #	% W/V	Exposure Limits in Air				
			ACGIH		OSHA		OTHER
			TLV	STEL	PEL	STEL	

Reagent 1: Acid Reagent

Chemical Name	CAS #	% W/V	TLV	STEL	PEL	STEL	OTHER
Sulphuric Acid	7664-93-9	2%	1mg/m ³	3 mg/m ³	1mg/m ³	N/A	NIOSH IDLH 15mg/m ³

Reagent 2: Molybdate Reagent

Chemical Name	CAS #	% W/V	TLV	STEL	PEL	STEL	OTHER
Sulphuric Acid	7664-93-9	2%	1mg/m ³	3 mg/m ³	1mg/m ³	N/A	NIOSH IDLH 15mg/m ³

Reagent 3: phosphorus standard

Chemical Name	CAS #	% W/V	TLV	STEL	PEL	STEL	OTHER
Sulphuric Acid	7664-93-9	2%	1mg/m ³	3 mg/m ³	1mg/m ³	N/A	NIOSH IDLH 15mg/m ³
Sodium Azide	26628-22-8	0.1%	N/A	0.29 mg/m ³ C	N/A	N/A	NIOSH 0.3MG/M ³ C (skin)

Reagent 4: N/A

Chemical Name	CAS #	% W/V	TLV	STEL	PEL	STEL	OTHER

Reagent 5: N/A

Chemical Name	CAS #	% W/V	TLV	STEL	PEL	STEL	OTHER

3. Hazard Identification

Primary Routes of Entry:

Inhalation, Ingestion, Skin and / or eye contact.

Inhalation:

Sodium Azide: Inhalation of Vapours, mists, or sprays may irritate the nose, throat, and lungs. Sulphuric acid: may cause irritation of the nose and throat, labored breathing, as well as lung edema, damage to the mucous membranes and upper respiratory tract.

Ingestion:

Sodium Azide: May cause gastric distress like nausea, vomiting, or diarrhea. Sulphuric acid: may cause severe burns of the mouth, throat, and stomach leading to death. Can cause sore throat, vomiting, and diarrhea. Circulatory collapse with clammy skin, weak and rapid pulse, shallow respiration, and scanty urine may follow ingestion or skin contact. Circulatory shock is often the immediate cause of death.

Skin Contact:

Sodium Azide: may cause reddening, discomfort, or mild irritation. Sulphuric acid: may cause reddening, pain and burns to the skin.

Eye Contact:

Sodium Azide: mild irritation may develop. Sulphuric acid: may cause blurred vision, redness, pain, and burns to eye tissue, which may lead to blindness.

Chronic Exposure:

Sulphuric acid: long term exposure to mist or vapors may cause damage to teeth. Chronic exposure to mists containing sulphuric acid is a cancer hazard.

Medical Conditions Aggravated by Exposure:

Persons with the pre-existing skin disorders and eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

Health Effects:

Sulphuric acid: No adverse health effects should occur from the routine use of this material in the manner specified by the manufacturer's instructions. **WARNING:** Chronic exposure to mist containing sulphuric acid is a cancer hazard. Risk of cancer depends on duration and level of exposure.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing becomes difficult, give oxygen. Seek medical attention immediately.

Ingestion:

Do not induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact:

Avoid skin contact. If skin contact occurs, remove contaminated clothing and wash exposed skin with water for atleast 15 minutes. Excess acid on skin can be neutralized with a 2% solution of bicarbonate of soda. Get medical attention immediately.

Eye Contact:

Immediately flush eye(s) with large volume of water for atleast 15 minutes, occasionally lifting the lower lids. Get medical attention immediately.

5. Fire Fighting Measures

Flash Point (Method used): N/A **Flammable Limits – LEL:** N/A **UEL:** N/A

Extinguishing Media:

Dry chemical, foam or carbon dioxide. Do not use water on material. However, water may be used to keep fire exposed containers cool.

Special Fire Procedures:

In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus with full facepiece operated in the pressure demand mode. Structural firefighter protective clothing is ineffective for fires involving this material. Stay away from sealed containers.

Unusual Fire and Explosion Hazards:

Sodium azide: can react with copper, lead, brass, or solder in plumbing to form explosive compound of lead azide and copper azide. Sodium azide can react with acids to form explosive hydrogen azide.

6. Accidental Release Measures

Steps to be taken in case material is Released or Spilled:

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified. Isolate hazard area. Keep unnecessary and unprotected persons from entering. Contain and cover liquid when possible. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e.g. vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible material, such as saw dust.

7. Handling and Storage

When diluting, always add the acid to water; never add water to the acid. Refer to packet insert for additional information on handling and storage procedures.

8. Exposure Controls and Personal Protection

Ventilation Data:

A system of local and / or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

Respiratory Protection:

Respiratory protection is not required under normal use of this product. If respiratory protection is needed, follow OSHA respirator regulations (29CFR1910.134) and, if necessary, wear a NIOSH approved respirator. Select respirator based on its suitability to provide worker protection for given working conditions, level of airborne concentration, and presence of sufficient oxygen.

Protective Gloves:

Wear appropriate protective gloves to prevent skin contact. Replace torn or punctured gloves promptly.

Other Protective Equipment:

Wear appropriate eye protection to prevent eye contact. Wear appropriate body protection to prevent skin contact.

Other Engineering Controls:

Eye wash stations and deluge showers.

Work Practices:

Good laboratory technique should be used when handling this product. Observe appropriate chemical hygiene. Avoid contact with eyes or skin. Do not place in mouth.

Hygienic Practices:

Do not eat, drink, or smoke while working with product. Upon completion of work activities involving this product, wash hands thoroughly with soap and water.

9. Physical And Chemical Properties

For All Components Unless Otherwise Indicated

Relative Vapour density(air = 1) :	N/A	Evaporation rate(nBuAc = 1):	N/A
Specific Gravity (water = 1) :	N/A	Freezing / Melting Point :	N/A
Solubility in Water :	Soluble	Boiling Point :	N/A
Vapour Pressure, mm Hg @ 20oC:	N/A	pH :	N/A

Odour and Appearance Information

Reagent 1: Clear, Colourless liquid

Reagent 2: Yellowish Colour liquid

Reagent 3: Clear, Colourless liquid

Reagent 4: N/A.

Reagent 5: N/A.

10. Stability and Reactivity

Incompatibility (Materials to Avoid):

Sodium Azide: Strong bases, strong acids, and water reactive materials. Sulphuric acid: water, Potassium chlorate, Potassium perchlorate, Potassium permanganate, sodium, lithium, bases, organic material, halogens, metal acetylides, oxides and hydrides, metals (yield hydrogen gas), strong oxidizing and reducing agents and many other reactive substances.

Hazardous Decomposition Products:

Toxic fumes of sulfur when heated to decomposition. Will react with water or steam to produce toxic and corrosive fumes. React with carbonates to generate carbon dioxide gas, and with cyanides and sulfides to form poisonous hydrogen cyanide gas and hydrogen sulfide respectively.

Will Hazardous Polymerization Occur?

Hazardous polymerization will not occur.

Conditions to Avoid / Polymerization: N/A

Is the Product Stable?

Yes, under normal handling and storage conditions.

Conditions to Avoid/stability

Heat, Moisture and incompatibles.

11. Toxicological Information

Toxicity Data:

Oral rat LD50: 2140mg/kg; inhalation rat LC 50: 510 mg/ m³ /2H; standard draize, eye rabbit, 250ug (severe); investigation as a tumorigen, mutagen, reproductive effector.

Reproductive effects:

N/A.

Target organ Effects:

Eyes & Skin.

Carcinogenicity:

Cancer Status: the international Agency for Research on cancer (IARC) has classified “strong inorganic acid mists containing sulfuric acid” as a known human carcinogen, (IARC category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions.

CHEMICAL NAME	CAS #	% W/V	NTP Carcinogen		IARC	OSHA
			Known	Anticipated		
N/A.						

12. Ecological Information

Environmental Fate / Stability:

N/A

Effect of Material on plants or animals:

N/A

Effect of Chemical on Aquatic Life:

This material may be toxic to aquatic life.

13. Disposal Considerations

EPA Waste Number and Proper Waste Disposal Method:

Please consult local, state and federal regulations for additional guidance on disposal.

14. Transportation Information

Is this Material Hazardous? Not regulated under transportation regulations.

Proper Shipping Name : N/A	Packing Group: N/A	UN Number: N/A
Hazard Class Number : N/A		

15. Regulatory Information

NA.

16. Other Information

NA => NOT APPLICABLE or NO INFORMATION