

**Safety Data Sheet**

according to 29CFR1910/1200 and GHS Rev. 3

**Initial preparation date:** : 12.05.2014**Molybdate Reagent for PO4****SECTION 1: Identification of the substance/mixture and of the supplier****Product name:** Molybdate Reagent for PO4**Manufacturer/Supplier Article number:** DUMTK-671**Recommended uses of the product and restrictions on use:** Laboratory chemicals**Manufacturer Details:**

AquaPhoenix Scientific  
860 Gitts Run Road,  
Hanover, PA 17331  
(717) 632-1291

**Supplier Details:**

Dubois Chemicals Inc.  
3630 East Kemper Rd, Cincinnati, OH 45241  
(800) 438-2647

**Emergency telephone number:**

Emergency Phone No. (800) 255-3924

**SECTION 2: Hazards identification****Classification of the substance or mixture:****Health hazard**

Carcinogenicity, category 1A

**Corrosive**

Corrosive to metals, category 1

**Irritant**

Skin irritation, category 2

Eye irritation, category 2A

Specific target organ toxicity following single exposure, category 3

Carcinogenic 1 (Strong inorganic acid mists/aerosols containing sulfuric acid).

Corrosive to metals. 1.

STOT SE 3.

Skin Irritation 2.

Eye irritation 2A.

**Signal word:** Danger**Hazard statements:**

May be corrosive to metals.

May cause cancer.

May cause drowsiness or dizziness.

Causes serious eye irritation.

Causes skin irritation.

**Precautionary statements:**

If medical advice is needed have product container or label at hand.

Keep out of reach of children.

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Read label before use.  
 Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Use personal protective equipment as required.  
 Use only outdoors or in a well-ventilated area.  
 Do not breathe dust/fume/gas/mist/vapors/spray.  
 Wash thoroughly after handling.  
 Wear protective gloves/protective clothing/eye protection/face protection.  
 Keep only in original container.  
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
 Absorb spillage to prevent material damage.  
 IF exposed or concerned: Get medical advice/attention.  
 Call a POISON CENTER or doctor/physician if you feel unwell.  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 Immediately call a POISON CENTER or doctor/physician.  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.  
 Continue rinsing.  
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 Store locked up.  
 Store in a corrosive resistant container with a resistant inner liner.  
 Store in a well ventilated place. Keep container tightly closed.  
 Dispose of contents/container.

**Other Non-GHS Classification:** None**SECTION 3: Composition/information on ingredients****Ingredients:**

<b>Ingredients:</b>		
CAS 7664-93-9	Sulfuric Acid	4.5 %
CAS 10102-40-6	Sodium Molybdate Dihydrate	1 %
CAS 7732-18-5	water, Purified	>94 %
Percentages are by weight		

**SECTION 4: First aid measures****Description of first aid measures****After inhalation:**

Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. Provide oxygen if breathing is difficult. Seek medical attention immediately. Begin rescue breathing using universal precautions if breathing has stopped. Begin CPR if heart action has stopped. Give artificial respiration if necessary.

**After skin contact:**

Rinse thoroughly. Rinse/flush exposed area gently using water for at least 30 minutes. Remove contaminated clothing and discard. Seek immediate medical advice.

**After eye contact:**

Protect unexposed eye. Remove contact lens(es) if able to do so during rinsing. Rinse/flush exposed eye(s) gently using water for at least 30 minutes. Seek immediate medical assistance.

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Rinse mouth thoroughly. Have exposed individual drink sips of water. Do not induce vomiting. Seek immediate medical assistance.

**Most important symptoms and effects, both acute and delayed:**

Irritation. Nausea. Headache. Shortness of breath. Burning of eyes or skin. Coughing. Strong inorganic acid mists containing sulfuric acid can cause cancer. Lung damage, chronic bronchitis. Damage to teeth and stomach.

**Indication of any immediate medical attention and special treatment needed:**

If seeking medical attention, provide SDS document to physician. Use of soap may assist with neutralization on exposed skin in conjunction with flushing.

**SECTION 5: Firefighting measures****Extinguishing media****Suitable extinguishing agents:**

If in laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition. Dry chemical, foam, or Carbon Dioxide.

**Unsuitable extinguishing agents:**

Water should not be used. Heat can be generated when in contact.

**Special hazards arising from the substance or mixture:**

Combustion products may include carbon oxides or other toxic vapors. Poisonous sulfur oxides are combustion products. Aerosols or mist may be produced in a fire. Sulfuric acid may ignite combustibles. Can react with metal to form flammable and explosive hydrogen gas.

**Advice for firefighters:****Protective equipment:**

Use respiratory protective device against the effects of fumes/dust/aerosol. Wear protective equipment for fire and chemical resistance.

**Additional information (precautions):** None

**SECTION 6: Accidental release measures****Personal precautions, protective equipment and emergency procedures:**

Wear protective equipment. Neutralize with lime or soda ash. Avoid contact with eyes, skin, and clothing. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat. Stop the spill, if possible. Contain spilled material by diking or using inert absorbent. Transfer to a disposal or recovery container.

**Environmental precautions:**

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13.

**Methods and material for containment and cleaning up:**

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Neutralize with lime or soda ash. Add water to form slurry. Dispose of remaining solid as normal refuse. Decant water to drain with excess water.

**Reference to other sections:** None

**SECTION 7: Handling and storage****Precautions for safe handling:**

Prevent formation of aerosols. Avoid contact with eyes, skin, and clothing. Follow good hygiene procedures when handling chemical materials. Use only in well ventilated areas. Avoid splashes or spray in enclosed areas. Wear protective clothing and equipment. Do not handle with incompatibles (see Section 10). Wash hands after handling.

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**Molybdate Reagent for PO4****Conditions for safe storage, including any incompatibilities:**

Store in a cool location. Protect from freezing and physical damage. Do not mix with bases. Generates heat when contacted with water. Provide ventilation for containers. Store in cool, dry conditions in well sealed containers. Keep container tightly closed. Do not store near incompatible materials (see Section 10). Only store in original container.

**SECTION 8: Exposure controls/personal protection****Control parameters:**

7664-93-9, Sulfuric Acid, ACS., ACGIH TLV: 1 mg/m<sup>3</sup>.  
 7664-93-9, Sulfuric Acid, ACS., OSHA PEL: 1 mg/m<sup>3</sup>.  
 10102-40-6, Sodium Molybdate., OSHA PEL TWA: 5.0 gm/m<sup>3</sup>.  
 10102-40-6, Sodium Molybdate., ACGIH TLV: 0.5 mg/m<sup>3</sup>.  
 7732-18-5, Water purified., ACGIH TLV: NA.  
 7732-18-5, Water purified., OSHA PEL TWA.

**Appropriate engineering controls:** Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above. Normal ventilation is adequate.

**Respiratory protection:** Use suitable respiratory protective device when high concentrations are present. For spills, respiratory protection may be advisable.

**Protection of skin:** The glove material has to be impermeable and resistant to the product/ the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. Wear protective equipment to prevent contact with skin, eyes, or hair. Complete suit protecting against chemicals.

**Eye protection:** Tightly fitting safety goggles or face shield. (8-inch minimum).

**General hygienic measures:** The usual precautionary measures are to be adhered to when handling chemicals. Keep away from food, beverages and feed sources. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapor/aerosols. Avoid contact with the eyes and skin.

**SECTION 9: Physical and chemical properties**

<b>Appearance (physical state, color):</b>	Clear, colorless liquid	<b>Explosion limit lower:</b>	Not determined
		<b>Explosion limit upper:</b>	Not determined
<b>Odor:</b>	Odorless	<b>Vapor pressure at 20°C:</b>	Not determined
<b>Odor threshold:</b>	Not determined	<b>Vapor density:</b>	Not determined
<b>pH-value:</b>	<3	<b>Relative density:</b>	1.01
<b>Melting/Freezing point:</b>	Approx. 0°C	<b>Solubilities:</b>	Soluble in water.
<b>Boiling point/Boiling range:</b>	Approx. 100C	<b>Partition coefficient (n-octanol/water):</b>	Not determined
<b>Flash point (closed cup):</b>	Not determined	<b>Auto/Self-ignition temperature:</b>	Not determined

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<b>Evaporation rate:</b>	Not determined	<b>Decomposition temperature:</b>	Not determined
<b>Flammability (solid, gaseous):</b>	Not determined	<b>Viscosity:</b>	a. Kinematic: Not determined b. Dynamic: Not determined
<b>Density at 20°C:</b>	Not determined		
<b>Specific Gravity</b>	1.84		

**SECTION 10: Stability and reactivity****Reactivity:**

Stable under normal conditions.

**Chemical stability:**

No decomposition if used and stored according to specifications.

**Possible hazardous reactions:**

Reacts with most metals to produce hydrogen gas, which may form explosive mixtures with air.

**Conditions to avoid:**

Store away from incompatible substances.

**Incompatible materials:**

Organics. Metals. Strong bases. Alcohols. Chlorine. halogenated compounds. Combustible materials. Picrates. Chlorates. Alkalines. Carbides. Fulminates. Reducing agents. Nitrates. Acetic acid. Oxidizing agents.

**Hazardous decomposition products:**

Oxides of sulfur. Carcinogenic mists/aerosols. Oxygen. Sodium oxides, Molybdenum oxides.

**SECTION 11: Toxicological information****Acute Toxicity:** No additional information.**Chronic Toxicity:** No additional information.**Skin corrosion/irritation:** No additional information.**Serious eye damage/irritation:** No additional information.**Respiratory or skin sensitization:** No additional information.**Carcinogenicity:****Strong inorganic acid mists containing sulfuric acid.:** IARC Group 1**Germ cell mutagenicity:** No additional information.**Reproductive Toxicity:** No additional information.**STOT-single and repeated exposure:** No additional information.**Additional toxicological information:**

No additional information.

**SECTION 12: Ecological information****Ecotoxicity:**

Aquatic Toxicity, Concentrated sulfuric acid has moderate acute and chronic toxicity to aquatic life. Small quantities will be neutralized by natural alkalinity.

**Persistence and degradability:**

Readily degradable in the environment.

**Bioaccumulative potential:**

No components are Bio accumulative.

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Aqueous solution has high mobility in soil.

**Other adverse effects:** No additional information.**SECTION 13: Disposal considerations****Waste disposal recommendations:**

Product/containers must not be disposed together with household garbage. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product. Neutralize with calcium carbonate or soda ash and wash to sewer with plenty of water.

**SECTION 14: Transport information****US DOT****UN Number:**

ADR, ADN, DOT, IMDG, IATA

1760

**Limited Quantity Exception:**

None

**Bulk:****RQ (if applicable):** None**Proper shipping Name:** Corrosive Liquids, N.O.S. (Sulfuric Acid Solution).**Hazard Class:** 8**Packing Group:** II.**Marine Pollutant (if applicable):** No additional information.**Comments:** None**Non Bulk:****RQ (if applicable):** None**Proper shipping Name:** Corrosive Liquids, N.O.S. (Sulfuric Acid Solution).**Hazard Class:** 8**Packing Group:** II.**Marine Pollutant (if applicable):** No additional information.**Comments:** None**SECTION 15: Regulatory information****United States (USA)****SARA Section 311/312 (Specific toxic chemical listings):**

None of the ingredients are listed.

**SARA Section 313 (Specific toxic chemical listings):**

7664-93-9 Sulfuric acid.

**RCRA (hazardous waste code):**

None of the ingredients are listed.

**TSCA (Toxic Substances Control Act) :**

All ingredients are listed.

**CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):**

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7664-93-9 Sulfuric Acid 1000 lb.

**Proposition 65 (California):****Chemicals known to cause cancer:**

7664-93-9 sulfuric acid.

**Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

**Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

**Canada****Canadian Domestic Substances List (DSL) :**

All ingredients are listed.

**SECTION 16: Other information**

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

**NFPA:** 3-0-0**HMIS:** 3-0-2**GHS Full Text Phrases:** None**Abbreviations and Acronyms:**

IMDG	International Maritime Code for Dangerous Goods.
PNEC.	Predicted No-Effect Concentration (REACH).
CFR	Code of Federal Regulations (USA)
SARA	Superfund Amendments and Reauthorization Act (USA).
RCRA.	Resource Conservation and Recovery Act (USA).
TSCA.	Toxic Substances Control Act (USA).
NPRI	National Pollutant Release Inventory (Canada).
DOT	US Department of Transportation.
IATA	International Air Transport Association.
GHS	Globally Harmonized System of Classification and Labelling of Chemicals.
ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service (division of the American Chemical Society).
NFPA	National Fire Protection Association (USA).
HMIS	Hazardous Materials Identification System (USA).
WHMIS	Workplace Hazardous Materials Information System (Canada).

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DNEL Derived No-Effect Level (REACH).