

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Initial preparation date: : 03.19.2015**Molybdovanadate Reagent****SECTION 1: Identification of the substance/mixture and of the supplier****Product name:** Molybdovanadate Reagent**Manufacturer/Supplier Article number:** AR-1047-60 EW**Recommended uses of the product and restrictions on use:** Laboratory chemical**Manufacturer Details:**

Aqua Analytics
39555 Orchard Hill Place, Suite 600, Novi, MI 48375
(888) 712-4000

Emergency telephone number:

Emergency Telephone No.: (800) 424-9300

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

Serious eye damage, category 1
Skin corrosion, category 1A
Acute toxicity (inhalation), category 4
Corrosive to metals, category 1
Specific target organ toxicity - single exposure, category 2
Specific target organ toxicity - single exposure, category 3, respiratory irritation

Signal word: Danger**Hazard statements:**

May be corrosive to metals.
Causes serious eye damage.
Causes severe skin burns and eye damage.
May cause damage to organs.
May be harmful if inhaled.
May cause respiratory irritation.

Precautionary statements:

If medical advice is needed have product container or label at hand.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash skin thoroughly after handling.
Keep only in original container.
Use only outdoors or in a well-ventilated area.

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Do not eat, drink or smoke when using this product.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.

Specific treatment (see supplemental first aid instructions on this label).

Wash contaminated clothing before reuse.

If exposed or you feel unwell: Call a poison center or doctor/physician.

Absorb spillage to prevent material damage.

Store locked up.

Store in a well ventilated place. Keep container tightly closed.

Dispose of contents and container as instructed in Section 13.

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

Ingredients:		
CAS 7664-93-9	Sulfuric Acid	35-45 %
CAS 12027-67-7	Ammonium Molybdate	1-5 %
CAS 7803-55-6	Ammonium Metavanadate	<1 %
CAS 7732-18-5	Demineralized Water	50-60 %
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. Seek medical advice if discomfort or irritation persists. If breathing difficult, give oxygen.

After skin contact:

Remove/Take off immediately all contaminated clothing. Wash affected area with soap and water. Rinse/flush exposed skin gently using water for 15-20 minutes. Immediately call a POISON CENTER or doctor/physician.

After eye contact:

Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Immediately call a POISON CENTER or doctor/physician.

Most important symptoms and effects, both acute and delayed:

Irritation. Shortness of breath. Headache. Nausea. Dizziness.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention provide SDS document to physician. Physician should treat symptomatically.

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Use dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

Unsuitable extinguishing agents:

Do not use water.

Special hazards arising from the substance or mixture:

Thermal decomposition can lead to release of irritating gases and vapors. Not Flammable, but reacts with most metals to form flammable hydrogen gas. Toxic fumes of: ammonia nitrogen oxides. sulfur oxides.

Advice for firefighters:**Protective equipment:**

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Additional information (precautions):

Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes and clothing.

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

Ensure adequate ventilation. Ensure that air-handling systems are operational.

Environmental precautions:

Should not be released into environment. Avoid discharge into drains, water courses or onto the ground.

Methods and material for containment and cleaning up:

Wear protective eyewear, gloves, and clothing. Keep in suitable closed containers for disposal. Refer to Section 13. Always obey local regulations. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Absorb liquid spill with vermiculite or other inert material. Cover spilled material with an alkali, such as soda ash or sodium bicarbonate. Refer to Section 8.

Reference to other sections: None**SECTION 7: Handling and storage****Precautions for safe handling:**

Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid breathing mist, dust, or vapor. Do not taste or swallow. Use only with adequate ventilation.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Store away from oxidizing agents. Store away from metals. Keep away from food and beverages. Keep container tightly sealed. Store away from incompatible materials. Store between 10 and 25 C. Protect from light. Store away from reducing agents.

SECTION 8: Exposure controls/personal protection

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Control parameters:	7664-93-9, Sulfuric Acid., ACGIH TLV TWA 1.0 mg/m ³ ; OSHA PEL TWA 1.0 mg/m ³ . 12027-67-7, Ammonium Molybdate, ACGIH TLV TWA 5.0 mg/m ³ ; OSHA PEL TWA 5.0 mg/m ³ . 7803-55-6, Ammonium Metavanadate, ACGIH TLV TWA 0.05 mg/m ³ ; OSHA PEL TWA 0.05 mg/m ³ .
Appropriate engineering controls:	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.
Respiratory protection:	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Protection of skin:	Select glove material impermeable and resistant to the substance. Contact glove manufacturer for specific information. Wear appropriate clothing to prevent any possibility of skin contact.
Eye protection:	Wear equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses or goggles are appropriate eye protection.
General hygienic measures:	Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before wearing.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear yellow liquid	Explosion limit lower:	Not determined
		Explosion limit upper:	Not determined
Odor:	Odorless	Vapor pressure at 20°C:	Not determined
Odor threshold:	Not determined	Vapor density:	Not determined
pH-value:	<0.5	Relative density:	1.375
Melting/Freezing point:	Not determined	Solubilities:	Soluble in water.
Boiling point/Boiling range:	Not determined	Partition coefficient (n-octanol/water):	Not determined
Flash point (closed cup):	Not determined	Auto/Self-ignition temperature:	Not determined
Evaporation rate:	0.06	Decomposition temperature:	Not determined
Flammability (solid, gaseous):	Not determined	Viscosity:	a. Kinematic: Not determined b. Dynamic: Not determined
Density at 20°C:	Not determined		

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

Nonreactive under normal conditions.

Chemical stability:

Stable under normal conditions.

Possible hazardous reactions:

May react violently in contact with oxidizers, reducers, metals.

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Incompatible materials. Excess heat.

Incompatible materials:

Metals.

Hazardous decomposition products:

Ammonia. Nitrogen oxides. Sulfur oxides. Hydrogen gas.

SECTION 11: Toxicological information**Acute Toxicity:****ATE (inhalation vapor):** LC50 - Rat - 4 h - 172.71 mg/m³.**ATE (oral):** LD50 - Rat - 2117 mg/kg.**Chronic Toxicity:** No additional information.**Skin corrosion/irritation:**

Caustic effect on skin.

Serious eye damage/irritation:

Caustic effect on eyes.

Respiratory or skin sensitization: No additional information.**Carcinogenicity:****NTP:** Recognized Carcinogen (Sulfuric acid mist or vapor)**Germ cell mutagenicity:** No additional information.**Reproductive Toxicity:** No additional information.**STOT-single and repeated exposure:**

Respiratory irritation.

Additional toxicological information:

No additional information.

SECTION 12: Ecological information**Ecotoxicity:** No additional information.**Persistence and degradability:** No additional information.**Bioaccumulative potential:** No additional information.**Mobility in soil:** No additional information.**Other adverse effects:** No additional information.**SECTION 13: Disposal considerations****Waste disposal recommendations:**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.

Chemical waste generators must also consult local, regional, and national hazardous waste regulations. Ensure complete and accurate classification. EPA Waste ID: D002.

SECTION 14: Transport information

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Molybdovanadate Reagent**US DOT****UN Number:**

ADR, ADN, DOT, IMDG, IATA

UN3264

Limited Quantity Exception:

None

Bulk:**RQ (if applicable):** None**Proper shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S. (<45% Sulfuric Acid in Solution).**Hazard Class:** 8**Packing Group:** III.**Marine Pollutant (if applicable):** No additional information.**Comments:** None**Non Bulk:****RQ (if applicable):** None**Proper shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S. (<45% Sulfuric Acid in Solution).**Hazard Class:** 8**Packing Group:** III.**Marine Pollutant (if applicable):** No additional information.**Comments:** None**SECTION 15: Regulatory information****United States (USA)****SARA Section 311/312 (Specific toxic chemical listings):**

Acute, Chronic, Reactive

SARA Section 313 (Specific toxic chemical listings):

7803-55-6 Ammonium vanadate.

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):

None of the ingredients are listed.

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

None of the ingredients are listed.

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.

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

IMDG	International Maritime Code for Dangerous Goods.
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).
DNEL	Derived No-Effect Level (REACH).
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