



# SAFETY DATA SHEET

## CATALYZED MOLYBDATE REAGENT

### 1. Identification

<b>Product identifier</b>	CATALYZED MOLYBDATE REAGENT
<b>Other means of identification</b>	None.
<b>Version #</b>	2.0
<b>Prepared by</b>	This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).
<b>L code</b>	L6131
<b>Revision date</b>	Jan-31-2018
<b>Supersedes date</b>	Dec-25-2017
<b>Recommended use</b>	Field test reagent
<b>Recommended restrictions</b>	None known.

#### Company/undertaking identification

SUEZ Water Technologies & Solutions Canada  
3239 Dundas Street West  
Oakville, Ontario, L6M 4B2  
T 905-465-3030

#### Emergency telephone

(800) 877-1940

### 2. Hazard(s) identification

<b>Physical hazards</b>	Corrosive to metals	Category 1
<b>Health hazards</b>	Acute toxicity, inhalation	Category 2
	Skin corrosion/irritation	Category 1A
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation

#### Label elements



<b>Signal word</b>	Danger
<b>Hazard statement</b>	Fatal if inhaled. May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.
<b>Precautionary statement</b>	
<b>Prevention</b>	Keep only in original packaging. Do not breathe mist. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear eye protection/face protection. Wear respiratory protection.
<b>Response</b>	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Absorb spillage to prevent material damage. Immediately call a poison center/doctor. Wash contaminated clothing before reuse.

<b>Storage</b>	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in a corrosion resistant container with a resistant inner liner.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Other hazards</b>	None known.
<b>Supplemental information</b>	None.

### 3. Composition/information on ingredients

#### Mixtures

Components	CAS #	Percent (wt/wt)
Nitric acid	7697-37-2	20 - 40

**Composition comments** Information for specific product ingredients as required by the WHMIS Regulations is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

### 4. First-aid measures

**Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.

**Skin contact** Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

**Eye contact** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

**Ingestion** Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not feed anything by mouth to an unconscious or convulsive victim.

**Most important symptoms/effects, acute and delayed** Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

**Indication of immediate medical attention and special treatment needed** Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed. Corrosive material It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage. Maintain adequate ventilation and oxygenation of the patient.

**General information** If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

### 5. Fire-fighting measures

**Suitable extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical** During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location.

**Fire fighting equipment/instructions** In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Evacuate the area promptly. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. Only trained and properly protected personnel must be involved in clean up operations.

**Methods and materials for containment and cleaning up**

Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. A self-contained breathing apparatus (SCBA) or respirator may be necessary.

**Environmental precautions**

Avoid discharge into drains, water courses or onto the ground.

**7. Handling and storage****Precautions for safe handling**

Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Acidic. Do not mix with alkaline material. Contains an oxidizer. Avoid all contact with reducing agents, oils, greases, organics and acids. Corrosive to skin and/or eyes. Do not breathe mist or vapour. Do not spray or aerosolize. Full personal protective equipment (including skin covering and full-face SCBA) is required for dilutions or mixtures of the product used in a spray application.

**Conditions for safe storage, including any incompatibilities**

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in original tightly closed container. Keep container tightly closed. Keep only in the original container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Contact with metals may release flammable hydrogen gas. Store in cool, well ventilated area. Keep away from strong bases.

**8. Exposure controls/personal protection****Occupational exposure limits****US. ACGIH Threshold Limit Values**

Components	Type	Value
Nitric acid (CAS 7697-37-2)	STEL	4 ppm
	TWA	2 ppm

**Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)**

Components	Type	Value
Nitric acid (CAS 7697-37-2)	STEL	10 mg/m3
		4 ppm
	TWA	5.2 mg/m3
		2 ppm

**Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)**

Components	Type	Value
Nitric acid (CAS 7697-37-2)	STEL	4 ppm
	TWA	2 ppm

**Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)**

Components	Type	Value
Nitric acid (CAS 7697-37-2)	STEL	4 ppm
	TWA	2 ppm

**Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)**

Components	Type	Value
Nitric acid (CAS 7697-37-2)	STEL	4 ppm
	TWA	2 ppm

**Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)**

Components	Type	Value
Nitric acid (CAS 7697-37-2)	STEL	10 mg/m3
		4 ppm
	TWA	5.2 mg/m3
		2 ppm

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

<b>Appropriate engineering controls</b>	Good general ventilation (typically 10 air changes per hour) should be used. 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. Eye wash facilities and emergency shower must be available when handling this product. Adequate ventilation to maintain air contaminants below exposure limits.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.
<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
<b>Other</b>	Wear appropriate chemical resistant clothing. Gauntlet-type neoprene gloves. Wash off after each use. Replace as necessary.
<b>Respiratory protection</b>	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. If respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential atmospheric levels. For operations such as spraying or misting or conditions such as emergencies where the exposure guideline may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

<b>Appearance</b>	Liquid
<b>Color</b>	Colorless
<b>Odor</b>	None
<b>Odor threshold</b>	Not available.
<b>pH (concentrated product)</b>	1
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	100 °F (38 °C)
<b>Flash point</b>	> 200 °F (> 93 °C) P-M(CC)
<b>Evaporation rate</b>	< 1 (Ether = 1)
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	(Air = 1)
<b>Relative density</b>	Not available.
<b>Relative density temperature</b>	70 °F (21 °C)
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	100 %
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.

<b>Viscosity</b>	Not available.
<b>Viscosity temperature</b>	70 °F (21 °C)
<b>Other information</b>	
<b>Explosive properties</b>	Not explosive.
<b>Oxidizing properties</b>	Not oxidizing.

## 10. Stability and reactivity

<b>Reactivity</b>	May be corrosive to metals.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents. Metals. Alcohols. Contact with strong bases may cause a violent reaction releasing heat. May react with organics or alkaline materials.
<b>Hazardous decomposition products</b>	Nitrogen oxides (NOx).

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Fatal if inhaled. At room temperature, exposure to vapor is minimal due to low volatility. Prolonged exposure to aerosol/mist may cause serious adverse effects, even death. This product should not be used in aerosol applications.
<b>Skin contact</b>	Causes severe skin burns.
<b>Eye contact</b>	Causes serious eye damage.
<b>Ingestion</b>	Causes digestive tract burns.

**Symptoms related to the physical, chemical and toxicological characteristics** Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

### Information on toxicological effects

**Acute toxicity** Fatal if inhaled.

Product	Species	Test Results
CATALYZED MOLYBDATE REAGENT (CAS Mixture)		
<b>Acute</b>		
<i>Inhalation</i>		
LC50	Rat	0.42 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<b>Components</b>		
<b>Species</b>		
<b>Test Results</b>		
Nitric acid (CAS 7697-37-2)		
<b>Acute</b>		
<i>Inhalation</i>		
LC50	Rat	0.13 mg/L, 4 Hour

\* Estimates for product may be based on additional component data not shown.

<b>Skin corrosion/irritation</b>	Causes severe skin burns and eye damage.
<b>Serious eye damage/eye irritation</b>	Causes serious eye damage.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	This product is not expected to cause respiratory sensitization.
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Carcinogenicity</b>	Not classified.
<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.
<b>Specific target organ toxicity - single exposure</b>	May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure** Not classified.

**Aspiration hazard** Based on available data, the classification criteria are not met. Aspiration of this product may cause the same corrosiveness/irritation impacts as if it were ingested.

**Chronic effects** Prolonged inhalation may be harmful.

## 12. Ecological information

**Ecotoxicity** No ecotoxicity data noted for the ingredient(s).

**Bioaccumulative potential** No data available.

**Mobility in soil** No data available.

**Other adverse effects** Not available.

**Persistence and degradability**

## 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

### TDG

**UN number** UN2031  
**UN proper shipping name** NITRIC ACID  
**Transport hazard class(es)**  
**Class** 8  
**Subsidiary risk** -  
**Packing group** II  
**Environmental hazards** Not available.

The goods described above have been classified using a combination of testing, technical data, calculations and manufacturer knowledge in accordance with Part 2, Classification. TDG Classification is valid for road or rail transport only. For shipment by air or water, refer to IATA or IMDG regulations.

### DOT

**UN number** UN2031  
**UN proper shipping name** Nitric acid, RQ(NITRIC ACID)  
**Transport hazard class(es)**  
**Class** 8  
**Packing group** II  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.  
**ERG number** 157

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

### IMDG

**UN number** UN2031  
**UN proper shipping name** NITRIC ACID, RQ(NITRIC ACID)  
**Transport hazard class(es)**  
**Class** 8  
**Subsidiary risk** -  
**Packing group** II  
**Environmental hazards**  
**Marine pollutant** No.  
**EmS** F-A, S-B  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

### IATA

**UN number** UN2031  
**UN proper shipping name** Nitric acid

**Transport hazard class(es)**

**Class** 8  
**Subsidiary risk** -  
**Packing group** II  
**Environmental hazards** No.  
**ERG Code** 157

**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**DOT**



**IATA; IMDG; TDG**



**15. Regulatory information**

**Canadian regulations**

This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

**Controlled Drugs and Substances Act**

Not regulated.

**Export Control List (CEPA 1999, Schedule 3)**

Not listed.

**Greenhouse Gases**

Not listed.

**Precursor Control Regulations**

Not regulated.

**Inventory status**

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information**

**Issue date** Dec-25-2017  
**Revision date** Jan-31-2018  
**Version #** 2.0

**List of abbreviations**

CAS: Chemical Abstract Service Registration Number  
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.  
ACGIH: American Conference of Governmental Industrial Hygienists  
NOEL: No Observed Effect Level  
STEL: Short Term Exposure Limit  
LC50: Lethal Concentration, 50%  
LD50: Lethal Dose, 50%  
TWA: Time Weighted Average  
BOD: Biochemical Oxygen Demand  
COD: Chemical Oxygen Demand  
TOC: Total Organic Carbon  
IATA: International Air Transport Association  
IMDG: International Maritime Dangerous Goods Code  
TLV: Threshold Limit Value

**References:**

No data available

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**Revision information**

This document has undergone significant changes and should be reviewed in its entirety.