



**Be Right™**

# SAFETY DATA SHEET

Issue Date 28-May-2021

Revision Date 26-Jan-2024

Version 4.9

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## 1. IDENTIFICATION

**Product identifier**

**Product Name** Molybdenum 1 Reagent

**Other means of identification**

**Product Code(s)** 2352449

**Safety data sheet number** M03878

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Laboratory reagent. Determination of molybdenum.

**Uses advised against** Consumer use.

**Restrictions on use** For Laboratory Use Only.

**Details of the supplier of the safety data sheet**

**Manufacturer Address**

Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

**Emergency telephone number**

+1(303) 623-5716 - 24 Hour Service

## 2. HAZARDS IDENTIFICATION

**Classification**

**Regulatory Status**

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

**Hazards not otherwise classified (HNOC)**

Not applicable

**Label elements**

**Signal word**

None

**Hazard statements**

The product contains no substances which at their given concentration, are considered to be hazardous to health

**Other Hazards Known**

None

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

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**Substance**

Not applicable

**Mixture**

**Chemical Family** Mixture.  
**Chemical nature** Mixture of organic compounds.

Percent ranges are used where confidential product information is applicable.

Chemical name	CAS No	Percent Range	HMRIC #
L-Ascorbic acid	50-81-7	30 - 40%	-

#### 4. FIRST AID MEASURES

**Description of first aid measures**

**General advice** No hazards which require special first aid measures. Use first aid treatment according to the nature of the injury.

**Inhalation** Remove to fresh air.

**Eye contact** Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

**Skin contact** Wash skin with soap and water.

**Ingestion** Clean mouth with water and drink afterwards plenty of water.

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

**Symptoms** See Section 11 for additional Toxicological Information.

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

**Note to physicians** Treat symptomatically.

#### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** Caution: Use of water spray when fighting fire may be inefficient.

**Specific hazards arising from the chemical** No information available.

**Hazardous combustion products** No information available.

**Special protective equipment for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

#### 6. ACCIDENTAL RELEASE MEASURES

**U.S. Notice** Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR

1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

#### **Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Ensure adequate ventilation.

#### **Environmental precautions**

**Environmental precautions** See Section 12 for additional ecological information.

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

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Take up mechanically, placing in appropriate containers for disposal.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

**Reference to other sections** See section 8 for more information. See section 13 for more information.

## **7. HANDLING AND STORAGE**

#### **Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice.

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

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place.

**Flammability class** Not applicable

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### **Control parameters**

**Exposure Guidelines** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

#### **Appropriate engineering controls**

**Engineering Controls** Showers  
Eyewash stations  
Ventilation systems. Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### **Individual protection measures, such as personal protective equipment**

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. Ensure adequate ventilation.

**Hand Protection** Wear suitable gloves. Barrier creams may help to protect the exposed areas of skin. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical

resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016.

- Eye/face protection** Wear safety glasses with side shields (or goggles).
- Skin and body protection** No special protective equipment required. Avoid contact with eyes, skin and clothing.
- General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.
- Environmental exposure controls** Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.
- Thermal hazards** None under normal processing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical state</b>	Solid	<b>Color</b>	light brown
<b>Appearance</b>	powder	<b>Odor threshold</b>	No information available
<b>Odor</b>	Odorless		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>Molecular weight</b>	No data available	
<b>pH</b>	3.6	1.6% @ 20°C
<b>Melting point / freezing point</b>	146 °C / 294.8 °F	
<b>Initial boiling point and boiling range</b>	No data available	
<b>Evaporation rate</b>	Not applicable	
<b>Vapor pressure</b>	Not applicable	
<b>Relative vapor density</b>	No data available	
<b>Specific gravity - VALUE 1</b>	1.64	
<b>Partition coefficient</b>	log K <sub>ow</sub> ~ -2.37	
<b>Soil Organic Carbon-Water Partition Coefficient</b>	log K <sub>oc</sub> ~ 0.73	
<b>Autoignition temperature</b>	No data available	
<b>Decomposition temperature</b>	No information available	
<b>Dynamic viscosity</b>	Not applicable	
<b>Kinematic viscosity</b>	Not applicable	

### Solubility(ies)

#### Water solubility

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

#### Solubility in other solvents

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Chemical Name	Solubility classification	Solubility	Solubility Temperature
Acid	Slightly soluble	> 0.1 mg/L	25 °C / 77 °F

#### Other information

##### **Metal Corrosivity**

**Steel Corrosion Rate** 2.08 mm/yr / 0.08 in/yr  
**Aluminum Corrosion Rate** 0.05 mm/yr / 0 in/yr

##### **Volatile Organic Compounds (VOC) Content**

Not applicable

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
L-Ascorbic acid	50-81-7	No data available	-

##### **Explosive properties**

**Upper explosion limit** No data available  
**Lower explosion limit** No data available

##### **Flammable properties**

**Flash point** Not applicable

##### **Flammability Limit in Air**

**Upper flammability limit:** No data available  
**Lower flammability limit:** No data available

##### **Oxidizing properties**

No data available.

##### **Bulk density**

No data available

## 10. STABILITY AND REACTIVITY

##### Reactivity

Not applicable.

##### Chemical stability

Stable under normal conditions.

##### **Explosion data**

**Sensitivity to Mechanical Impact** None.  
**Sensitivity to Static Discharge** None.

##### Possibility of hazardous reactions

None under normal processing.

##### Hazardous polymerization

None under normal processing.

##### Conditions to avoid

None known based on information supplied.

##### Incompatible materials

Strong oxidizing agents, strong acids, and strong bases.

**Hazardous decomposition products**

None known based on information supplied.

**11. TOXICOLOGICAL INFORMATION**

**Information on likely routes of exposure**

**Product Information**

**Inhalation** No known effect based on information supplied.

**Eye contact** No known effect based on information supplied.

**Skin contact** No known effect based on information supplied.

**Ingestion** No known effect based on information supplied.

**Symptoms** No information available.

**Acute toxicity**

Based on available data, the classification criteria are not met

**Mixture**

No data available.

**Ingredient Acute Toxicity Data**

No data available.

**Unknown Acute Toxicity**

0% of the mixture consists of ingredient(s) of unknown toxicity.

**Acute Toxicity Estimations (ATE)**

The following values are calculated based on chapter 3.1 of the GHS document

<b>ATEmix (oral)</b>	No information available
<b>ATEmix (dermal)</b>	No information available
<b>ATEmix (inhalation-dust/mist)</b>	No information available
<b>ATEmix (inhalation-vapor)</b>	No information available
<b>ATEmix (inhalation-gas)</b>	No information available

**Skin corrosion/irritation**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Ingredient Skin Corrosion/Irritation Data**

No data available.

**Serious eye damage/irritation**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Ingredient Eye Damage/Eye Irritation Data**

No data available.

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**Respiratory or skin sensitization**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Ingredient Sensitization Data**

Test data reported below.

**STOT - single exposure**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Ingredient Specific Target Organ Toxicity Single Exposure Data**

No data available.

**STOT - repeated exposure**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Ingredient Specific Target Organ Toxicity Repeat Exposure Data**

No data available.

**Carcinogenicity**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Ingredient Carcinogenicity Data**

No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
L-Ascorbic acid	50-81-7	-	-	-	-

**Legend**

<b>ACGIH (American Conference of Governmental Industrial Hygienists)</b>	Does not apply
<b>IARC (International Agency for Research on Cancer)</b>	Does not apply
<b>NTP (National Toxicology Program)</b>	Does not apply
<b>OSHA</b>	Does not apply

**Germ cell mutagenicity**

Based on available data, the classification criteria are not met.

**Mixture invitro Data**

No data available.

**Substance invitro Data**

Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
L-Ascorbic acid (30 - 40%)	DNA damage	Human fibroblast	0.2 mmol/L	None reported	Positive test result for mutagenicity	RTECS

CAS#: 50-81-7						
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**Mixture in vivo Data**  
No data available.

**Substance in vivo Data**  
No data available.

**Reproductive toxicity**  
Based on available data, the classification criteria are not met.

**Mixture**  
No data available.

**Ingredient Reproductive Toxicity Data**  
Test data reported below.

**Oral Exposure Route**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
L-Ascorbic acid (30 - 40%) CAS#: 50-81-7	Guinea pig TD <sub>Lo</sub>	19500 mg/kg	28 days	None reported	RTECS

**Aspiration hazard**  
Based on available data, the classification criteria are not met.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity** Based on available data, the classification criteria are not met.

**Unknown aquatic toxicity** 0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

**Mixture**

**Aquatic Acute Toxicity**  
No data available.

**Aquatic Chronic Toxicity**  
No data available.

**Substance**

**Aquatic Acute Toxicity**  
Test data reported below.

**Fish**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
L-Ascorbic acid (30 - 40%) CAS#: 50-81-7	96 hours	None reported	LC <sub>50</sub>	44200 mg/L	ECOSARS

**Crustacea**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
L-Ascorbic acid	48 Hours	None reported	LC <sub>50</sub>	17500 mg/L	ECOSARS



(30 - 40%) CAS#: 50-81-7					
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**Algae**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
L-Ascorbic acid (30 - 40%) CAS#: 50-81-7	96 hours	None reported	EC <sub>50</sub>	29675 mg/L	ECOSARS

**Aquatic Chronic Toxicity**

No data available.

**Persistence and degradability**

**Mixture**

No data available.

Bioaccumulation

MATERIAL DOES NOT BIOACCUMULATE

**Mixture**

No data available.

**Partition coefficient**

log K<sub>ow</sub> ~ -2.37

**Mobility**

**Soil Organic Carbon-Water Partition Coefficient**

log K<sub>oc</sub> ~ 0.73

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Waste from residues/unused products**

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging**

Do not reuse empty containers.

**US EPA Waste Number**

No information available

**Special instructions for disposal**

Dilute material with excess water making a weaker than 5% solution. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the material to the drain. Flush system with plenty of water.

**14. TRANSPORT INFORMATION**

**DOT**

Not regulated

**TDG**

Not regulated

**IATA**

Not regulated

**IMDG**

Not regulated

#### **Additional information**

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

## **15. REGULATORY INFORMATION**

### **National Inventories**

<b>TSCA</b>	Complies
<b>DSL/NDSL</b>	Complies

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

### **International Inventories**

<b>EINECS/ELINCS</b>	Complies
<b>ENCS</b>	Does not comply
<b>IECSC</b>	Complies
<b>KECL</b>	Complies
<b>PICCS</b>	Does not comply
<b>TCSI</b>	Complies
<b>AICS</b>	Complies
<b>NZIoC</b>	Complies

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**TCSI** - Taiwan Chemical Substances Inventory

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

### **US Federal Regulations**

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

#### **SARA 311/312 Hazard Categories**

<b>Acute health hazard</b>	Yes
<b>Chronic Health Hazard</b>	No
<b>Fire hazard</b>	No
<b>Sudden release of pressure hazard</b>	No
<b>Reactive Hazard</b>	No

#### **CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

#### **CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

### **US State Regulations**

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**California Proposition 65**

This product does not contain any Proposition 65 chemicals

**IMERC:** Not applicable

**U.S. State Right-to-Know Regulations**

This product does not contain any substances regulated by state right-to-know regulations.

**U.S. EPA Label Information**

Chemical name	FIFRA	FDA
L-Ascorbic acid	180.0950	21 CFR 182.3013,21 CFR 182.8013

**16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION**

**Special Comments**

None

**Additional information**

**Global Automotive Declarable Substance List (GADSL)**

Not applicable

**NFPA and HMIS Classifications**

<b>NFPA</b>	<b>Health hazards</b> - 0	<b>Flammability</b> - 0	<b>Instability</b> - 0	<b>Physical and chemical properties</b> -
<b>HMIS</b>	<b>Health hazards</b> - 0	<b>Flammability</b> - 0	<b>Physical hazards</b> - 0	<b>Personal protection</b> - X - I

**Key or legend to abbreviations and acronyms used in the safety data sheet**

ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
ATSDR	ATSDR (Agency for Toxic Substances and Disease Registry)
CCRIS	CCRIS (Chemical Carcinogenesis Research Information System)
CDC	CDC (Center for Disease Control)
CEPA	CEPA (Canadian Environmental Protection Agency)
CICAD	CICAD (Concise International Chemical Assessment Documents)
ECHA	ECHA (The European Chemicals Agency)
EEA	EEA (European Environment Agency)
EPA	EPA (Environmental Protection Agency)
ERMA	ERMA (New Zealand Environmental Risk Management Authority)
ECOSARS	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
FDA	FDA (Food & Drug Administration)
GESTIS	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
HSDB	HSDB (Hazardous Substances Data Bank)
INERIS	INERIS (The National Industrial Environment and Risks Institute)
IPCS INCHEM	IPCS INCHEM (International Programme on Chemical Safety)
IUCLID	IUCLID (The International Uniform Chemical Information Database)
NITE	Japan National Institute of Technology and Evaluation (NITE)
NIH	NIH (National Institutes of Health)
NIOSH	NIOSH (National Institute for Occupational Safety and Health)
LOLI	LOLI (List of Lists - An International Chemical Regulatory Database)
NDF	no data
NICNAS	Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

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NIOSH IDLH	Immediately Dangerous to Life or Health
OSHA	OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEEN	PEEN (Pan European Ecological Network)
RTECS	RTECS (Registry of Toxic Effects of Chemical Substances)
SIDS	SIDS (Screening Information Dataset) for High Volume Chemicals
SYKE	The Finnish Environment Institute (SYKE)
USDA	USDA (United States Department of Agriculture)
USDC	USDC (United States Department of Commerce)
WHO	WHO (World Health Organization)

**Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration	Ceiling	Ceiling Limit Value
X	Listed	Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN*	Skin designation	SKN+	Skin sensitization
RSP+	Respiratory sensitization	**	Hazard Designation
C	Carcinogen	R	Reproductive toxicant
M	mutagen		

**Prepared By** Hach Product Compliance Department

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**Revision Note** None

**Disclaimer**

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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**End of Safety Data Sheet**