SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier
Product Name Molybdate Reagent for Silica

Other means of identification
Product Code(s) 1454699

Safety data sheet number M00026

Recommended use of the chemical and restrictions on use
Recommended Use Laboratory Use.
Uses advised against None.
Restrictions on use None.

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 +1(515)232-2533 - 8am - 4pm CST

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

Hazard statements

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

Other Hazards Known
May be harmful if swallowed
May be harmful in contact with skin

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical Name	Sodium molybdate
Chemical Family	Inorganic salt.
Formula	Na_2MoO_4
CAS No	7631-95-0
Alternate CAS Number	10102-40-6 - Dihydrate

Percent ranges are used where confidential product information is applicable.

Chemical name	CAS No.	Percent Range	HMRIC #
Sodium molybdate	7631-95-0	100%	-

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.

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 Pick up and transfer to properly labeled containers.

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

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium molybdate CAS#: 7631-95-0	TWA: 0.5 mg/m^3	TWA: 5 mg/m^3 (vacated) TWA: 5 mg/m^3	IDLH: 1000 mg/m^3 Mo

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

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.

Hand Protection Wear suitable gloves.

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection No special protective equipment required.

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

Physical state Solid
Appearance powder
Color white
Odor Odorless
Odor threshold No data available

Property	Values	Remarks • Method
Molecular weight	241.95 g/mole	
pH	10	5% Solution
Melting point/freezing point	687 °C / 1269 °F	
Boiling point / boiling range	No data available	
Evaporation rate	Not applicable	
Vapor pressure	Not applicable	
Vapor density (air = 1)	Not applicable	
Specific gravity (water = 1 / air = 1)	3.28	
Partition Coefficient (n-octanol/water)	log K_{ow} ~ 0	
Soil Organic Carbon-Water Partition Coefficient	log K_{oc} ~ 0	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	Not applicable	
Kinematic viscosity	Not applicable	

Solubility(ies)

Water solubility

Water solubility classification	Water solubility	Water Solubility Temperature
Completely soluble	840000 mg/L	20 °C / 68 °F

Solubility in other solvents

Chemical Name	Solubility classification	Solubility	Solubility Temperature
Acids	Soluble	> 1000 mg/L	25 °C / 77 °F

Other Information

Metal Corrosivity

Steel Corrosion Rate	Not applicable
Aluminum Corrosion Rate	Not applicable

Volatile Organic Compounds (VOC) Content
This Product is by Weight 100% an Individual Pure Chemical Substance

Chemical name	CAS No.	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Sodium molybdate	7631-95-0	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
Particle Size	No information available
Particle Size Distribution	No information available

10. STABILITY AND REACTIVITY

Reactivity
Not applicable.

Chemical stability
Stability Stable under normal conditions.

Explosion data
Sensitivity to Mechanical Impact None
Sensitivity to Static Discharge None.

Possibility of Hazardous Reactions
Possibility of Hazardous Reactions None under normal processing.

Hazardous polymerization
None under normal processing.

Conditions to avoid
Conditions to avoid None known based on information supplied.

Incompatible materials
Incompatible materials Strong oxidizing agents, strong acids, and strong bases.

Hazardous Decomposition Products

Sodium oxides.

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.
Aggravated Medical Conditions	Preexisting eye disorders. Blood disorders. Kidney disorders. Respiratory disorders.
Toxicologically synergistic products	None known.
Toxicokinetics, metabolism and distribution	This Product is by Weight 100% an Individual Pure Chemical Substance.

Product Acute Toxicity Data — This Product is by Weight 100% an Individual Pure Chemical Substance

Oral Exposure Route	If available, see ingredient data below
Dermal Exposure Route	If available, see ingredient data below
Inhalation (Dust/Mist) Exposure Route	If available, see ingredient data below
Inhalation (Vapor) Exposure Route	If available, see ingredient data below
Inhalation (Gas) Exposure Route	If available, see ingredient data below

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

Acute Toxicity Estimations (ATE) — Not applicable

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

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

Ingredient Acute Toxicity Data
Oral Exposure Route — If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium molybdate (100%) CAS#: 7631-95-0	Rat LD_{50}	4000 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical name	**Endpoint type**	**Reported dose**	**Exposure time**	**Toxicological effects**	**Key literature references and sources for data**
Sodium molybdate (100%) CAS#: 7631-95-0	Guinea pig LD_{50}	310 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)

Dermal Exposure Route — If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data

Sodium molybdate (100%) CAS#: 7631-95-0	Rat LD_{50}	> 2000 mg/kg	None reported	None reported	Vendor SDS

Inhalation (Dust/Mist) Exposure Route If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium molybdate (100%) CAS#: 7631-95-0	Rat LC_{50}	> 2.08 mg/L	4 hours	No deaths occured at reported dose	ECHA (The European Chemicals Agency)

Inhalation (Vapor) Exposure Route If available, see data below
Inhalation (Gas) Exposure Route If available, see data below

Product Specific Target Organ Toxicity Single Exposure Data
Oral Exposure Route If available, see ingredient data below
Dermal Exposure Route If available, see ingredient data below
Inhalation (Dust/Mist) Exposure Route If available, see ingredient data below
Inhalation (Vapor) Exposure Route If available, see ingredient data below
Inhalation (Gas) Exposure Route If available, see ingredient data below

Ingredient Specific Target Organ Toxicity Single Exposure Data
Oral Exposure Route If available, see data below
Dermal Exposure Route If available, see data below
Inhalation (Dust/Mist) Exposure Route If available, see data below
Inhalation (Vapor) Exposure Route If available, see data below
Inhalation (Gas) Exposure Route If available, see data below

Aspiration toxicity
If available, see data below
Kinematic viscosity Not applicable

Product Skin Corrosion/Irritation Data
This Product is by Weight 100% an Individual Pure Chemical Substance. If available, see ingredient data below.

Ingredient Skin Corrosion/Irritation Data
If available, see data below

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium molybdate (100%) CAS#: 7631-95-0	Standard Draize Test	Rabbit	500 mg	4 hours	Not corrosive or irritating to skin	ECHA (The European Chemicals Agency)

Product Serious Eye Damage/Eye Irritation Data
This Product is by Weight 100% an Individual Pure Chemical Substance. If available, see ingredient data below.

Ingredient Eye Damage/Eye Irritation Data
If available, see data below

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium molybdate (100%) CAS#: 7631-95-0	Patch test	None reported	200 mg	None reported	Not corrosive or irritating to eyes	ECHA (The European Chemicals Agency)

Sensitization Information

Product Sensitization Data
Skin Sensitization Exposure Route This Product is by Weight 100% an Individual Pure Chemical Substance. If available, see ingredient data below.
Respiratory Sensitization Exposure Route This Product is by Weight 100% an Individual Pure Chemical Substance. If available, see ingredient data below.

Ingredient Sensitization Data

Skin Sensitization Exposure Route If available, see data below.

Chemical name	Test method	Species	Results	Key literature references and sources for data
Sodium molybdate (100%) CAS#: 7631-95-0	OECD Test No. 406: Skin Sensitization	Guinea pig	Not confirmed to be a skin sensitizer	Vendor SDS

Respiratory Sensitization Exposure Route If available, see data below.

Chronic Toxicity Information

Product Specific Target Organ Toxicity Repeat Dose Data

Oral Exposure Route If available, see ingredient data below.
Dermal Exposure Route If available, see ingredient data below.
Inhalation (Dust/Mist) Exposure Route If available, see ingredient data below.
Inhalation (Vapor) Exposure Route If available, see ingredient data below.
Inhalation (Gas) Exposure Route If available, see ingredient data below.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

Oral Exposure Route If available, see data below
Dermal Exposure Route If available, see data below
Inhalation (Dust/Mist) Exposure Route If available, see data below
Inhalation (Vapor) Exposure Route If available, see data below
Inhalation (Gas) Exposure Route If available, see data below

Product Carcinogenicity Data

Oral Exposure Route If available, see ingredient data below
Dermal Exposure Route If available, see ingredient data below
Inhalation (Dust/Mist) Exposure Route If available, see ingredient data below
Inhalation (Vapor) Exposure Route If available, see ingredient data below
Inhalation (Gas) Exposure Route If available, see ingredient data below

Ingredient Carcinogenicity Data

Chemical name	CAS No.	ACGIH	IARC	NTP	OSHA
Sodium molybdate	7631-95-0	A3	-	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA (Occupational Safety and Health Administration of the US Department of Labor)	Does not apply

Oral Exposure Route If available, see data below
Dermal Exposure Route If available, see data below
Inhalation (Dust/Mist) Exposure Route If available, see data below
Inhalation (Vapor) Exposure Route If available, see data below
Inhalation (Gas) Exposure Route If available, see data below

Product Germ Cell Mutagenicity *invitro* **Data**

This Product is by Weight 100% an Individual Pure Chemical Substance. If available, see ingredient data below.

Ingredient Germ Cell Mutagenicity *invitro* **Data**

If available, see data below

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium molybdate (100%)	Phage inhibition capacity	Escherichia coli	16 mmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of

CAS#: 7631-95-0						Chemical Substances)
Chemical name	**Test**	**Cell Strain**	**Reported dose**	**Exposure time**	**Results**	**Key literature references and sources for data**
Sodium molybdate (100%) CAS#: 7631-95-0	Sex chromosome loss and nondisjunction	Saccharomyces cerevisiae	80 mmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

Product Germ Cell Mutagenicity *invivo* **Data**

Oral Exposure Route	If available, see ingredient data below
Dermal Exposure Route	If available, see ingredient data below
Inhalation (Dust/Mist) Exposure Route	If available, see ingredient data below
Inhalation (Vapor) Exposure Route	If available, see ingredient data below
Inhalation (Gas) Exposure Route	If available, see ingredient data below

Ingredient Germ Cell Mutagenicity *invivo* **Data**

Oral Exposure Route	If available, see data below
Dermal Exposure Route	If available, see data below
Inhalation (Dust/Mist) Exposure Route	If available, see data below
Inhalation (Vapor) Exposure Route	If available, see data below
Inhalation (Gas) Exposure Route	If available, see data below

Product Reproductive Toxicity Data

Oral Exposure Route	If available, see ingredient data below
Dermal Exposure Route	If available, see ingredient data below
Inhalation (Dust/Mist) Exposure Route	If available, see ingredient data below
Inhalation (Vapor) Exposure Route	If available, see ingredient data below
Inhalation (Gas) Exposure Route	If available, see ingredient data below

Ingredient Reproductive Toxicity Data

Oral Exposure Route	If available, see data below
Inhalation (Dust/Mist) Exposure Route	If available, see data below
Inhalation (Vapor) Exposure Route	If available, see data below
Inhalation (Gas) Exposure Route	If available, see data below

12. ECOLOGICAL INFORMATION

Ecotoxicity Not considered to be harmful to aquatic life

Product Ecological Data This Product is by Weight 100% an Individual Pure Chemical Substance

Aquatic toxicity

Fish	If available, see ingredient data below
Crustacea	If available, see ingredient data below
Algae	If available, see ingredient data below

Ingredient Ecological Data

Aquatic toxicity

Fish If available, see ingredient data below

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium molybdate (100%) CAS#: 7631-95-0	96 hours	*Oncorhynchus mykiss*	LC_{50}	800 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident

					Insurance)

Crustacea No data available
Algae No data available

Other Information

Persistence and degradability

Product Biodegradability Data
This Product is by Weight 100% an Individual Pure Chemical Substance.

Ingredient Biodegradability Data

Bioaccumulation

Product Bioaccumulation Data
This Product is by Weight 100% an Individual Pure Chemical Substance.

Partition Coefficient (n-octanol/water) log K_{ow} ~ 0

Ingredient Bioaccumulation Data

Mobility

Soil Organic Carbon-Water Partition Coefficient log K_{oc} ~ 0

Water solubility

Water solubility classification	Water solubility	Water Solubility Temperature
Completely soluble	840000 mg/L	20 °C / 68 °F

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.

Special instructions for disposal Work in an approved fume hood. Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. If permitted by regulation. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system. Check with national, local municipal and state authorities and waste contractors for pertinent local information on the disposal of this article.

14. TRANSPORT INFORMATION

U.S. DOT Not regulated

TDG	Not regulated
IATA	Not regulated
IMDG	Not regulated
Note:	No special precautions necessary.

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

TSCA	Complies
DSL/NDSL	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIoC	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

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	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

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

U.S. EPA Label Information

Chemical name	FIFRA	FDA
Sodium molybdate	180.0920	-

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

NFPA	**Health hazards** - 1	**Flammability** - 0	**Instability** - 0	**Physical and Chemical Properties** -
HMIS	**Health hazards** - 1	**Flammability** - 0	**Physical Hazards** - 0	**Personal protection** - X - See section 8 for more information

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

NIOSH IDLH	*Immediately Dangerous to Life or Health*
ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
NDF	*no data*

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
Issue Date	06-Apr-2018
Revision Date	06-Apr-2018
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.

HACH COMPANY©2018

End of Safety Data Sheet