

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations


Printing date: January 25, 2019

Revision: January 10, 2019

1 Identification

- **Product identifier**
- **Trade name:** Molybdenum Indicator Solution
- **Product code:** MO1535SS
- **Recommended use and restriction on use**
- **Recommended use:** Laboratory chemicals
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
AquaPhoenix Scientific, Inc.
860 Gitts Run Road
Hanover, PA 17331
Phone: (717)632-1291
Toll-Free: (866)632-1291
info@aquaphoenixsci.com
- **Emergency telephone number:**
ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)

2 Hazard(s) identification

- **Classification of the substance or mixture**
Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H312 Harmful in contact with skin.
Acute Tox. 4 H332 Harmful if inhaled.
Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 2 H371 May cause damage to the central nervous system and optic nerve.
- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**

GHS07 GHS08
- **Signal word:** Warning
- **Hazard statements:**
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.
H319 Causes serious eye irritation.
H371 May cause damage to the central nervous system and optic nerve.
- **Precautionary statements:**
P260 Do not breathe mist/vapors/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves and eye protection.

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P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
 P330 Rinse mouth.
 P302+P352 If on skin: Wash with plenty of soap and water.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P308+P311 IF exposed or concerned: Call a poison center/doctor.
 P337+P313 If eye irritation persists: Get medical advice/attention.
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P405 Store locked up.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

• **Chemical characterization: Mixtures**

• **Components:**

64-17-5	Ethanol  Flam. Liq. 2, H225  Eye Irrit. 2A, H319	10-20%
67-56-1	Methanol  Flam. Liq. 2, H225  Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331  STOT SE 1, H370 Eye Irrit. 2B, H320	<10%
25322-68-3	Polyethylene glycol	>50%
538-62-5	1,5-diphenylcarbazon	<10%
3486-30-4	hydrogen (benzyl)[4-[[4-(benzylethylamino)phenyl](2,4-disulphonatophenyl)methylene]cyclohexa-2,5-dien-1-ylidene](ethyl)ammonium, sodium salt	<10%
62625-21-2	sodium hydrogen 4,4'-(3H-2,1-benzoxathiol-3-ylidene)bis[5-methyl-2-(1-methylethyl)phenolate] S,S-dioxide	<10%

• **Additional information:**

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.
 For the wording of the listed Hazard Statements, refer to section 16.

4 First-aid measures

• **Description of first aid measures**

• **General information:**

Immediately remove any clothing soiled by the product.
 Take affected persons out into the fresh air.

• **After inhalation:**

Supply fresh air.
 Provide oxygen treatment if affected person has difficulty breathing.
 If experiencing respiratory symptoms: Call a doctor.

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- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation is experienced, consult a doctor.
- **After eye contact:**
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
- **Most important symptoms and effects, both acute and delayed:**
Breathing difficulty
Coughing
Dizziness
Causes eye irritation.
Gastric or intestinal disorders when ingested.
Caustic effect on skin and mucous membranes.
Nausea in case of ingestion.
Acidosis
Blindness
- **Danger:**
Harmful if swallowed, in contact with skin or if inhaled.
May cause damage to the central nervous system and optic nerve.
- **Indication of any immediate medical attention and special treatment needed:**
Contains methanol. Consult literature for specific antidotes.
Medical supervision for at least 48 hours.
If necessary oxygen respiration treatment.
If medical advice is needed, have product container or label at hand.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray.
- **For safety reasons unsuitable extinguishing agents:** None.
- **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information:** Use large quantities of foam as it is partially destroyed by the product.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation.
Use respiratory protective device against the effects of fumes/dust/aerosol.

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- **Environmental precautions**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Inform respective authorities in case of seepage into water course or sewage system.

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

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose of the collected material according to regulations.

Send for recovery or disposal in suitable receptacles.

- **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

- **Handling**

- **Precautions for safe handling:**

Prevent formation of aerosols.

Use only in well ventilated areas.

Avoid splashes or spray in enclosed areas.

- **Information about protection against explosions and fires:**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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

- **Requirements to be met by storerooms and receptacles:**

Store only in the original receptacle.

Avoid storage near extreme heat, ignition sources or open flame.

Store in cool, dry conditions in well sealed receptacles.

- **Information about storage in one common storage facility:**

Store away from foodstuffs.

Store away from oxidizing agents.

- **Specific end use(s)** No relevant information available.

8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

25322-68-3 Polyethylene glycol

WEEL (USA)	Long-term value: 10 mg/m ³ (H); MW>200
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64-17-5 Ethanol

PEL (USA)	Long-term value: 1900 mg/m ³ , 1000 ppm
REL (USA)	Long-term value: 1900 mg/m ³ , 1000 ppm
TLV (USA)	Short-term value: 1880 mg/m ³ , 1000 ppm
EL (Canada)	Short-term value: 1000 ppm
EV (Canada)	Long-term value: 1,900 mg/m ³ , 1,000 ppm

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LMPE (Mexico)	Long-term value: 1000 ppm A3
67-56-1 Methanol	
PEL (USA)	Long-term value: 260 mg/m ³ , 200 ppm
REL (USA)	Short-term value: 325 mg/m ³ , 250 ppm Long-term value: 260 mg/m ³ , 200 ppm Skin
TLV (USA)	Short-term value: 328 mg/m ³ , 250 ppm Long-term value: 262 mg/m ³ , 200 ppm Skin; BEI
EL (Canada)	Short-term value: 250 ppm Long-term value: 200 ppm Skin
EV (Canada)	Short-term value: 325 mg/m ³ , 250 ppm Long-term value: 260 mg/m ³ , 200 ppm Skin
LMPE (Mexico)	Short-term value: 250 ppm Long-term value: 200 ppm PIEL, IBE

• **Ingredients with biological limit values:**

67-56-1 Methanol

BEI (USA)	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)
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• **Exposure controls**

• **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

• **Engineering controls:** Provide adequate ventilation.

• **Breathing equipment:** Suitable respiratory protective device recommended.

• **Protection of hands:**



Protective gloves

• **Material of gloves**

Natural rubber, NR

Neoprene gloves

Fluorocarbon rubber (Viton)

Nitrile rubber, NBR

Butyl rubber, BR

• **Eye protection:**

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Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.

- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment**
No relevant information available.
- **Risk management measures** No relevant information available.

9 Physical and chemical properties

· Information on basic physical and chemical properties

· Appearance:

Form: Liquid

Color: Dark

· Odor: Not determined.

· Odor threshold: Not determined.

· pH-value: Not determined.

· Melting point/Melting range: Not determined.

· Boiling point/Boiling range: Not determined.

· Flash point: >93 °C (>199.4 °F)

· Flammability (solid, gaseous): Not applicable.

· Auto-ignition temperature: Not determined.

· Decomposition temperature: Not determined.

· Danger of explosion: Product does not present an explosion hazard.

· Explosion limits

Lower: Not determined.

Upper: Not determined.

· Oxidizing properties: Not determined.

· Vapor pressure: Not determined.

· Density:

Relative density: Not determined.

Vapor density: Not determined.

Evaporation rate: Not determined.

· Solubility in / Miscibility with

Water: Not determined.

· Partition coefficient (n-octanol/water): Not determined.

· Viscosity

Dynamic: Not determined.

Kinematic: Not determined.

· Other information: No relevant information available.

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10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition, do not overheat.
- **Possibility of hazardous reactions**
Toxic fumes may be released if heated above the decomposition point.
Contact with acids releases toxic gases.
Reacts with oxidizing agents.
- **Conditions to avoid** Excessive heat.
- **Incompatible materials**
Oxidizing agents
No relevant information available.
- **Hazardous decomposition products**
Under fire conditions only:
Carbon monoxide and carbon dioxide

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** May be harmful if swallowed, in contact with skin or if inhaled.

• LD/LC50 values that are relevant for classification:

ATE (Acute Toxicity Estimate)

Oral	LD50	500-1200 mg/kg (rat)
Dermal	LD50	1600-3400 mg/kg (rabbit)
Inhalative	LC50/4h	16-30 mg/l (rat)

- **Primary irritant effect:**
- **On the skin:** Based on available data, the classification criteria are not met.
- **On the eye:** Irritating effect.
- **Sensitization:** Based on available data, the classification criteria are not met.

• IARC (International Agency for Research on Cancer):

64-17-5	Ethanol	1
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• NTP (National Toxicology Program):

None of the ingredients are listed.

• OSHA-Ca (Occupational Safety & Health Administration):

None of the ingredients are listed.

• Probable route(s) of exposure:

Ingestion.
Inhalation.
Eye contact.
Skin contact.

• Acute effects (acute toxicity, irritation and corrosivity):

May be harmful if swallowed, in contact with skin or if inhaled.
May cause damage to the central nervous system and optic nerve.
Causes serious eye irritation.

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- **Repeated dose toxicity:** No relevant information available.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** May cause damage to the central nervous system and optic nerve.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|-------------------------------------|----------------|
| · UN-Number | |
| · DOT, ADR/RID/ADN, IMDG, IATA | Not regulated. |
| · UN proper shipping name | |
| · DOT, ADR/RID/ADN, IMDG, IATA | Not regulated. |
| · Transport hazard class(es) | |
| · DOT, ADR/RID/ADN, IMDG, IATA | |
| · Class | Not regulated. |

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- | | |
|--|-----------------|
| · Packing group | |
| · DOT, ADR/RID/ADN, IMDG, IATA | Not regulated. |
| · Environmental hazards | |
| · Marine pollutant: | No |
| · Special precautions for user | Not applicable. |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

· **Section 302 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

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

67-56-1	Methanol
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· **TSCA (Toxic Substances Control Act)**

All ingredients are listed.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

Ethanol - listing refers specifically to alcoholic beverage consumption and is not applicable for product.

64-17-5	Ethanol
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· **Chemicals known to cause developmental toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

Ethanol - listing refers specifically to alcoholic beverage consumption and is not applicable for product.

64-17-5	Ethanol
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67-56-1	Methanol
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· **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

· **IARC (International Agency for Research on Cancer):**

64-17-5	Ethanol	1
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· **Canadian Domestic Substances List (DSL) (Substances not listed.):**

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All ingredients are listed.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bio-accumulable, Toxic

vPvB: very Persistent and very Bioaccumulative

OSHA: Occupational Safety & Health Administration

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B

STOT SE 1: Specific target organ toxicity (single exposure) – Category 1

STOT SE 2: Specific target organ toxicity (single exposure) – Category 2

• **Sources**

Website, European Chemicals Agency (echa.europa.eu)

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)

Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

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