

SAFETY DATA SHEET

GHS
United States

Section 1. Product and company identification

Product name	MOLYVAN® 3000	<u>In case of emergency</u>
Code	31508	1-203-853-1400
Supplier/Manufacturer	Vanderbilt Chemicals, LLC 30 Winfield Street Norwalk, CT 06855	Chemtrec: 1-800-424-9300 Outside US: +1-703-527-3887
Chemical name	molybdenum dialkyldithiocarbamate	
Synonym	Molybdenum dialkyldithiocarbamate in petroleum process oil.	
Material uses	Petroleum additive This SDS is for Jurisdictions Outside the USA, Canada and Japan - This product is registered in the USA, Canada and Japan as CAS# 906665-74-5. If you have any questions please call the Product Risk Manager at Vanderbilt Global Services, LLC.	
Product type	Liquid.	

Section 2. Hazards identification

OSHA/HCS status	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Classification of the substance or mixture	Not classified.
<u>GHS label elements</u>	
Signal word	No signal word.
Hazard statements	No known significant effects or critical hazards.
<u>Precautionary statements</u>	
Prevention	Not applicable.
Response	Not applicable.
Storage	Not applicable.
Disposal	Not applicable.
Hazards not otherwise classified	None known.

Section 3. Composition/information on ingredients

Substance/mixture

Mixture

Ingredient name	CAS number	% by weight
molybdenum, bis(ditridecylcarbamodithioato) di-u-oxodioxo-di-,sulfurized	71342-89-7	65 - 70
petroleum process oil, <3.0% DMSO extractable material	64742-52-5	30 - 35

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.
Skin contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	No specific data.
Inhalation	No specific data.
Skin contact	No specific data.
Ingestion	No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	No specific treatment.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media None known.

Specific hazards arising from the chemical

In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products

Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

This product has a tendency upon standing to exhibit some crystallization or gelling. If this happens, the product may be re-liquified by agitation and heating at 40 to 50°C.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
petroleum process oil, <3.0% DMSO extractable material	ACGIH TLV (United States, 6/2013). TWA: 5 mg/m ³ 8 hours. Form: Inhalable fraction NIOSH REL (United States, 10/2013). TWA: 5 mg/m ³ 10 hours. Form: Mist STEL: 10 mg/m ³ 15 minutes. Form: Mist ACGIH TLV (United States). STEL: 10 mg/m ³ OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ 8 hours.
molybdenum, bis(ditridecylcarbamodithioato) di-u-oxodioxo-di-,sulfurized	ACGIH TLV (United States, 3/2015). TWA: 10 mg/m ³ , (as Mo) 8 hours. Form: Inhalable fraction TWA: 3 mg/m ³ , (as Mo) 8 hours. Form: Respirable fraction

Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls/personal protection

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. Recommended: splash goggles

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: lab coat

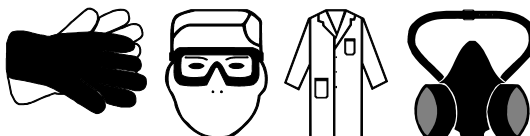
Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Vapor and dust respirator.

Personal protective equipment (Pictograms)



Section 9. Physical and chemical properties

Appearance

Physical state

Liquid.

Color

Red to brown

Odor

Mineral Oil [Slight]

Odor threshold

Not available.

pH

Not available.

Melting point

Not available.

Boiling point

Not available.

Flash point

Closed cup: 160 to 180°C (320 to 356°F) [Pensky-Martens.]

Burning time

Not applicable.

Burning rate

Not applicable.

Evaporation rate

Not available.

Flammability (solid, gas)

Not available.

Lower and upper explosive (flammable) limits

Not available.

Vapor pressure

Not available.

Vapor density

Not available.

Relative density

1.03 to 1.07

Solubility

Insoluble in the following materials: cold water.

Solubility in water

Not available.

Partition coefficient: n-octanol/water

Not available.

Auto-ignition temperature

Not available.

Section 9. Physical and chemical properties

Decomposition temperature	Not available.
SADT	Not available.
Viscosity	Kinematic (room temperature): 6.51 cm ² /s (651 cSt) [at 25°C]

Section 10. Stability and reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No specific data.
Incompatible materials	No specific data.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
petroleum process oil, <3.0% DMSO extractable material	LD50 Dermal	Rabbit	>2000 mg/kg	-
molybdenum, bis (ditridecylcarbamodithioato) di-u-oxodioxo-di-,sulfurized	LD50 Oral	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-

Conclusion/Summary

Both molybdenum (insoluble) and oil mist (mineral) are believed to have a low order of toxicity. Molybdenum at high oral dosages has produced weight loss, anorexia, liver and kidney damage in animals but few signs and symptoms in humans have been recorded during normal usage. Oil mists (unless contaminated with endotoxins or high volatile organics) have produced few adverse effects. Mild decrements in lung function, however, have more recently been reported with repeated elevated exposures.

Irritation/Corrosion

Not available.

Sensitization

Section 11. Toxicological information

Product/ingredient name	Route of exposure	Species	Result
molybdenum, bis (ditridecylcarbamodithioato) di-u-oxodioxo-di-,sulfurized	skin	Guinea pig	Not sensitizing

Mutagenicity

Product/ingredient name	Test	Experiment	Result
molybdenum, bis (ditridecylcarbamodithioato) di-u-oxodioxo-di-,sulfurized	OECD 471	Experiment: In vitro Subject: Bacteria	Negative

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Inhalation.

Potential acute health effects

Eye contact

No known significant effects or critical hazards.

Inhalation

No known significant effects or critical hazards.

Skin contact

No known significant effects or critical hazards.

Ingestion

May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact

No specific data.

Inhalation

No specific data.

Skin contact

No specific data.

Ingestion

No specific data.

Section 11. Toxicological information

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Long term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Potential chronic health effects

Not available.

General No known significant effects or critical hazards.

Carcinogenicity No known significant effects or critical hazards.

Mutagenicity No known significant effects or critical hazards.

Teratogenicity No known significant effects or critical hazards.

Developmental effects No known significant effects or critical hazards.

Fertility effects No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Other information Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.

Other adverse effects No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
TDG Classification	Not regulated.	-	-	-		-
ADR/RID Class	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-
IATA-DGR Class	Not regulated.	-	-	-		-

PG* : Packing group

Section 15. Regulatory information

United States inventory (TSCA 8b)

At least one component is not listed.

This product is registered in the USA, Canada and Japan as CAS# 906665-74-5.

U.S. Federal regulations

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification

Not applicable.

Composition/information on ingredients

No products were found.

State regulations

Massachusetts

None of the components are listed.

New York

None of the components are listed.

Section 15. Regulatory information

New Jersey	None of the components are listed.
Pennsylvania	None of the components are listed.
California Prop. 65	None of the components are listed.

International regulations

Europe inventory	All components are listed or exempted.
Canada inventory	At least one component is not listed.
Australia inventory (AICS)	All components are listed or exempted.
China inventory (IECSC)	All components are listed or exempted.
Japan inventory	At least one component is not listed.
Korea inventory	All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC)	All components are listed or exempted.
Philippines inventory (PICCS)	All components are listed or exempted.

This SDS is for Jurisdictions Outside the USA, Canada and Japan - This product is registered in the USA, Canada and Japan as CAS# 906665-74-5. If you have any questions please call the Product Risk Manager at Vanderbilt Global Services, LLC.

Section 16. Other information

Hazardous Material Identification System (U.S.A.)	Health	1
	Flammability	1
	Physical hazards	0

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



History

Date of printing	1/26/2016
Validation date	1/26/2016
Date of previous issue	8/24/2015
Version	1.03
Key to abbreviations	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations
References	Not available.

Section 16. Other information

Information contact **Vanderbilt Global Services, LLC**
 Corporate Risk Management
 1-203-295-2143

Visit www.vanderbiltchemicals.com for more information.

Notice to reader

Information presented herein has been compiled from sources considered to be dependable and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so. Nothing herein is to be construed as recommending any practice or any product in violation of any patent or in violation of any law or regulation. It is the user's responsibility to determine for himself the suitability of any material for a specific purpose and to adopt such safety precautions as may be necessary. We make no warranty as to the results to be obtained in using any material and, since conditions of use are not under our control, we must necessarily disclaim all liability with respect to the use of any material supplied by us.