

MATERIAL SAFETY DATA SHEET

MSDS FORMAT MEETS ANSI Z400.1 -1993 AND OSHA 1910.1200

**SENTINEL'S
MOLY DRY FILM**

REVISION# 0

MSDS #

REVISION DATE: JANUARY 2, 2010

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Sentinel's Moly Dry Film

PRODUCT NUMBER (S): 12500

SYNONYM: Sentinel's Moly Dry Film

COMPANY IDENTIFICATIONSentinel Lubricants Corp.
15755 N.W. 15th Ave.
Miami, FL 33169**EMERGENCY TELEPHONE NUMBERS**HEALTH (24 hr) : (800) 842-6400 or (305) 625-6400
TRANMOLY DRY FILM RTATION (24 hr) : (800) 842-6400
or (305) 625-6400 Int'l collect calls accepted**PRODUCT INFORMATION:**MSDS Requests: (800) 842-6400
Environmental, Safety, & Health Info: (800) 842-6400
Product Information: (800) 842-6400**2. COMPOSITION/INFORMATION ON INGREDIENTS**

100% SENTINEL'S Moly Dry Film

CONTAINING**COMPONENTS****LIMIT/QTY****AGENCY/TYPE**NAPHTHA (petroleum), hydrotreated
Chemical Name: NAPHTHA
CAS64742490MOLYBDENUM DISULFIDE
Chemical Name: MOLYBDENUM DISULFIDE
CAS131733510 mg/m³

ACGIH TWA

COMPOSITION COMMENT

All the components of this material are in the Toxic Substances Control Act Chemical Substances Inventory.

3. HAZARD IDENTIFICATION AND EMERGENCY AND FIRST AID PROCEDURES

*****EMERGENCY OVERVIEW*****

- VAPORS CAN TRAVEL AND EXPLODE
- INHALATION MAY CAUSE NERVOUS SYSTEM EFFECTS
-

IMMEDIATE HEALTH EFFECTS

EYE:

If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN

In case of skin contact, remove any contaminated clothing and wash skin with soap and water. Launder or dry -clean clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

INGESTION

If ingested, DO NOT induce vomiting; call a physician immediately.

INHALATION

If overcome by vapor, remove from exposure and call a physician immediately. If breathing is irregular or has stopped, start resuscitation, administer oxygen, if available.

VARIABILITY AMONG INDIVIDUALS

Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

4. FIRST AID MEASURES

EYE CONTACT:

If splashed into the eyes, flush with clear water for 15 minutes. If irritation persists, call a physician.

SKIN

In case of skin contact, remove any contaminated clothing and wash skin with soap and water. Launder or dry -clean clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

INGESTION

If ingested, DO NOT induce vomiting; call a physician immediately.

INHALATION

If overcome by vapor, remove from exposure and call a physician immediately. If breathing is irregular or has stopped, start resuscitation, administer oxygen, if available.

EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure)

High vapor concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects, including death.

5. FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

Classification (29 CFR 1910.1200)

FLAMMABLE PROPERTIES:

FLASH POINT (COC) FLAMMABLE – Per DOT 49 CFR 173.120

Less than - 18°C (Less than 0°F)

ASTM D 56, Tag Closed Cup

AUTOIGNITION TEMPERATURE: APPROXIMATELY 266°C (510°F)

ASTM E 659

NFPA RATINGS: Health 1; Flammability 3; Reactivity; 0.

FLAMMABLE OR EXPLOSIVE LIMITS (% by volume in air):

Lower Flammable Limit 1.8%

Upper Flammable Limit 11.6%

EXTINGUISHING MEDIA AND FIRE FIGHTING PROCEDURES

Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

The following procedures for this type of product are based on the recommendations in the National Fire Protection Association's "Fire Protection Guide on Hazardous Materials", Tenth Edition (1991):

Use dry chemical, foam or carbon dioxide to extinguish the fire. "Water may be ineffective", but water should be used to keep fire exposed containers cool. If a leak or spill has ignited, use water spray to disperse the vapor and to protect persons attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing if gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

NOTE: The inclusion of the phrase "water may be ineffective" is to indicate that although water can be used to cool and protect exposed material, water may not extinguish the fire unless used under favorable conditions by experienced fire fighters trained in fighting all types of flammable liquid fires.

6. ACCIDENTAL RELEASE MEASURES

EMERGENCY NUMBER (24hr) : (800) 842-6400 or (305) 625-6400, International Collect Calls Accepted.

ACCIDENTAL RELEASE MEASURES:

Eliminate all sources of ignition in vicinity of released gas. Stop the source of the leak or release. Clean up releases as soon as possible. Contain liquid to prevent further contamination of soil, surface water or leading to surface water or groundwater. Clean up small spills using appropriate techniques such as sorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Follow prescribed procedures for reporting and responding to larger releases.

Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 4248802 as appropriate or required.

This material does not contain any CERCLA Hazardous Substances.

7. HANDLING AND STORAGE

This liquid is volatile and gives off invisible vapors. Either the liquid or vapor may settle in low areas or travel some distance along the ground or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

Keep product away from ignition sources, such as heat, sparks, pilot lights, static electricity, and open flames.

“EMPTY” CONTAINER WARNING

“Empty” containers retain residue (liquid and/or vapor) and can be dangerous.

DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

Do not attempt to refill or clean containers since residue is difficult to remove. “Empty” drums should be completely drained, properly banded and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

For work on tanks refer to Occupational Safety and Health Administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

SIGNS AND SYMPTOMS OF EXPOSURE:

Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

GENERAL CONSIDERATION

Consider the potential hazards of this material (see section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limit.

PERSONAL PROTECTIVE EQUIPMENT:

Where splashing is possible, wear safety glasses with side shields as a good safety practice.

EYE PROTECTION:

No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

SKIN PROTECTION:

No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances. Suggested materials for protective gloves include: <Viton> <Nitrile> <Silver Shield>

RESPIRATORY PROTECTION

Wear a NIOSH approved respirator that provides adequate protection from measured concentrations of this material. Use the following elements for air purifying respirators:

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE

Hexane-Individuals with neurological disease should avoid exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION:

Dark Metallic, Fluid, Typical Odor

pH:	Essentially neutral
VAPOR PRESSURE:	150 mm Hg @ 20°C (68°F)
VAPOR DENSITY (AIR = 1):	3.0
BOILING POINT:	66 - 71°C (151-160°F)
FREEZING POINT:	NA
MELTING POINT:	NA
SOLUBILITY:	Solubility in water @ 1 ATM and 25°C (77°F)
SPECIFIC GRAVITY:	0.67 (5.59 lb/gal) @ (15.6/15.6°C)
EVAPORATION RATE:	25°C (77°F) @ 1 ATM (n-butyl Acetate = 1) 15.5
VISCOSITY:	0.51 cSt @ 25°C (77°F)
PERCENT VOLATILE (VOL):	Approximately 50% in 0.5 minutes @ 1 ATM 25°C (77°F)

10. STABILITY AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS:

Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.

CHEMICAL STABILITY:

This product is stable and will not react violently with water..

CONDITIONS TO AVOID:

Keep product away from ignition sources, such as heat, sparks, pilot lights, static electricity, and open flames.

INCOMPATIBILITY WITH OTHER MATERIALS:

Avoid contact with strong oxidizing agents, such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc., as this presents a serious explosion hazard.

HAZARDOUS POLYMERIZATION:

This product is stable and will not react violently with water. Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Prolonged or repeated skin contact with this product tends to remove skin oils, possibly leading to irritation and dermatitis.

Product contacting the eyes may cause eye irritation.

The presence of (approximately 55%) n-hexane (normal hexane) in this solvent mixture represents a distinct hazard of producing peripheral polyneuropathy, a progressive disorder of the nervous system, which with sufficient high exposure has the potential of becoming irreversible. This disorder has been observed in individuals exposed repeatedly to high vapor concentrations (1000 -1500 ppm) of n-hexane over a period of several months. Exposure to this product should be controlled to result in n-hexane exposure of 50 ppm or less. The OSHA 8-hour Time Weighted Average-Permissible Exposure Limit (TWA-PEL) is 50 ppm for n-hexane.

Simultaneous exposure to the vapors of n-hexane and methyl ethyl ketone (MEK) or to n-hexane. Evidence in laboratory animals and humans indicates that in the presence of MEK or (MIBK) increases the risk of adverse effects from n-hexane. Evidence in laboratory animals and humans indicates that in the presence of MEK or MIBK the neuropathy associated with n-hexane is produced in a shorter time or at lower exposure concentrations. This interaction has not been reported when the exposure to n-hexane is below the American Conference of Governmental Industrial Hygienists (ACGIH) limit of 50 ppm and MEK is below the ACGIH limit of 200 ppm or when MIBK is below the ACGIH limit of 50 ppm.

A two-generation reproduction study has been conducted on commercial hexane. In this study, male and female rats were exposed to commercial hexane vapor at target concentrations of 0, 900, 3000, or 9000 ppm over two generations. No treatment-related adverse effects on reproductive performance were observed. However, at the highest concentration tested (9000 ppm), reductions in body weight and body weight gain were observed in both generations of offspring. Effects on body weight gain were not observed at the lower concentrations tested. The concentration level at which these effects were observed in rats is many times higher than the maximum exposure that would occur at the TLV.

Product has a low order of acute oral and dermal toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possible death.

Petroleum Solvents/Petroleum Hydrocarbons – Skin Contact may aggravate an existing dermatitis.

12. ECOLOGICAL INFORMATION

CLEAN WATER ACT / OIL POLLUTION ACT

This product may be classified as an oil mist under Section 311 of the Clean Water Act, and under the Oil Pollution Act. Discharges or spills into or leading to surface waters that cause a sheen must be reported to the National Response Center (1-800-424-8802).

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Shut off and eliminate all ignition sources. Keep people away. Recover free product. Add sand, earth or other suitable absorbent to spill area. Minimize breathing vapors. Minimize skin contact. Ventilate confined spaces. Open all windows and doors. Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas.

Assure conformity with applicable governmental regulations. Continue to observe precautions for volatile, flammable vapors from absorbed material.

THE FOLLOWING INFORMATION MAY BE USEFUL IN COMPLYING WITH VARIOUS STATE AND FEDERAL LAWS AND REGULATIONS UNDER VARIOUS ENVIRONMENTAL STATUTES:

THRESHOLD PLANNING QUANTITY (TPQ), EPA REGULATION 40 CFR 355 (SARA Sections 301-304)

No TPQ for product or any constituent greater than 1% or 0.1% (carcinogen).

TOXIC CHEMICAL RELEASE REPORTING, EPA REGULATION 40 CFR 372 (SARA SECTION 313)

This product contains approximately 55% n-hexane

This product contains approximately 3% cyclohexane.

HAZARDOUS CHEMICAL REPORTING, EPA REGULATION 40 CFR 370 (SARA Sections 311-312)

EPA Hazard Classification Codes: Chronic, Fire

TOXIC SUBSTANCE CONTROL ACT

This product contains the following TSCA 12b reportable chemical substance (s): Hexane

13. DISPOSAL CONSIDERATIONS

Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

14. TRANSPORTATION AND OSHA RELATED LABEL INFORMATION

The description shown may not apply to all shipping situations. Consult 49 CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT SHIPPING NAME: HEXANE
DOT HAZARD CLASS: 3
DOT IDENTIFICATION NUMBER: UN1208
DOT PACKING GROUP: II

ADDITIONAL INFORMATION: NON-BULK PACKAGES ARE NOT REGULATED IN THE U.S.A. UNLESS SHIPPED BY AIRCRAFT OR VESSEL. 49 CFR 173.150 (f)

LABEL/PLACARD: EXTREMELY FLAMMABLE

15. REGULATORY INFORMATION

SARA 311 CATEGORIES:

1. Immediate (Acute) Health Effects: NO
2. Delayed (Chronic) Health Effects: NO
3. Fire Hazard: YES
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01=SARA 313	11=NJ RTK	22=TSCA Sect 5(a) (2)
02=MASS RTK	12=Cercla 302.4	23=TSCA Sect 6
03=NTP Carcinogen	13=MN RTK	24=TSCA Sect 12 (b)
04=CA Prop 65-Carcin	14=ACGIH TWA	25=TSCA Sect 8 (d)
05=CA Prop 65-Repro Tox	15=ACGIH STEL	26=TSCA Sect 8 (a)
06=IARC Group 1	16=ACGIH Calc TLV	27=TSCA Sect 4 (a)
07=IARC Group 2A	17=OSHA PEL	28=Canadian WHMIS
08=IARC Group 2B	18=DOT Marine Pollutant	29=OSHA CEILING
09=SARA 302/304	19=Sentinel TWA	30=Sentinel STEL
10=PA RTK	20=EPA Carcinogen	

The following components of this material are found on the regulatory lists indicated.

MOLYBDENUM DISULFIDE
is found on lists: 02, 11, 14

EU RISK AND SAFETY LABEL PHRASES:
May cause long-term adverse effects in the aquatic environment

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A.
34:5A-1 et. Seq., the product is to be identified as follows:
PETROLEUM OIL

16. OTHER INFORMATION

NFPA RATINGS: Health 1; Flammability 2; Reactivity 0;

HMIS RATINGS: Health 1; Flammability 2; Reactivity 0;

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator).

These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (For HMIS ratings)

REVISION STATEMENT:

This is a new Material Safety Data Sheet.

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV	-	Threshold Limit Value	TWA	-	Time Weighted Average
STEL	-	Short-term Exposure Limit	TPQ	-	Threshold Planning Quantity
RQ	-	Reportable Quantity	PEL	-	Permissible Exposure Limit
C	-	Ceiling Limit	CAS	-	Chemical Abstract Service Number
A1-5	-	Appendix A Categories	()	-	Change Has Been Proposed
NDA	-	No Data Available	NA	-	Not Applicable

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1)

The above information is based on the data of which we are aware and is believed to be correct as of data hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date. Hereof may suggest modification of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.