

Material Safety Data Sheet (MSDS)

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

PRODUCT NAME: MVO-100

INTRODUCTION: BASE OIL AND ADDITIVES

RECOMMENDED USE: HIGH SPEED VACUUM PUMP OIL

COMPANY PROFILE

SUPPLIER: SHANGHAI JIONG CHENG INDUSTRIAL CO., LTD.

ADDRESS: 1123 JIAXIN ROAD, JIADING DISTRICT, SHANGHAI.

SECTION 2

HAZARDS IDENTIFICATION

This substance is not classified as dangerous according to Directive (See **SECTION 15**).

Other hazards

Physical/Chemical Hazards:

No obvious hazard.

Health Hazards:

High pressure can cause serious damage to the skin. Excessive contact can cause eye, skin or respiratory irritation.

Environment Hazards:

No obvious hazard.

NOTES: Without consulting experts, this product cannot be used for any other purpose except for the specific use specified by SECTION 1. Health studies have shown that chemical exposure can pose a potential hazard to human health, and this varies from person to person.

SECTION 3

COMPOSITION / INFORMATION ON INGREDIENTS

Mineral oil (base oil)	90% ~ 95%
Lubricating oil additive (alkyl amine)	5% ~ 10%

No hazardous substances or compounds need to be disclosed.

SECTION 4

FIRST AID MEASURES

If inhaled:

Avoid further inhalation. For those who provide help, you or others should avoid inhalation. Take adequate respiratory protection. If you have respiratory irritations, dizziness, nausea, or confusion, seek medical attention immediately. If breathing stops, use mechanical equipment to help ventilate your mouth or give first aid to mouth-to-mouth resuscitation.

In case of skin contact:

Wash exposed areas with soap and water. If the product is injected into the skin or any part of the body, regardless of the appearance or size of the wound, the person being injected must be immediately examined by a doctor in accordance with surgical first aid. Even if the initial symptoms after high pressure injection are mild or asymptomatic, surgical treatment early in the first hours of the accident can significantly reduce the extent of the final injury.

In case of eye contact:

Rinse eyes thoroughly with water. If irritation occurs, seek medical assistance.

If swallowed:

Usually no first aid is needed. If feel unwell, seek medical advice.

SECTION 5**FIREFIGHTING MEASURES****Extinguishing media**

Suitable extinguishing media:

Fire water spray, foam, dry chemicals (dry powder) or carbon dioxide (CO₂).

Improper extinguishing media:

Use water directly.

Firefighting

Firefighting instructions:

Evacuate the area. Prevent the control of fire or diluted effluent from flowing into rivers, sewers, or drinking water sources. Firefighters should use standard protective equipment and use self-contained breathing apparatus (SCBA) in confined spaces. Use water spray to cool exposed surfaces and protect workers.

Fire hazard:

Oil mist may create flammable mixtures.

Dangerous combustion products:

Smoke, incomplete combustion products and carbon oxides.

Flammability

Flash Point [Test Method]: >210°C [ASTM D-92]

Flammability limit (%vol. in air): Lower explosive limit (LEL): Not formulated, Upper explosive limit (UEL): Not formulated

Spontaneous combustion temperature: not formulated

SECTION 6

ACCIDENTAL RELEASE MEASURES

Notice procedure

In the event of an overflow or leak accident, the relevant authorities should be notified in accordance with all applicable regulations.

Leaking treatment

Leaking on land:

If there is no danger, you can take action to stop the leak. Recover by pump or using a suitable adsorbent.

Leaking on water:

If there is no danger, you can take action to stop the leak. Barrier grille is used immediately to limit spillage range. Warn other boats. Remove from the surface or use a suitable adsorbent. Consult expert opinions before using dispersants.

The advice on the handling of a marine or land-based accident is based on the most likely leakage of the product; however, the geographical conditions, wind, temperature, and wave, flow direction and flow rate (for water leakage) may be imposed on the right solution has a great influence. For this purpose, local experts should be consulted. Note: Local regulations may have stipulations or restrictions on the adopted plan.

Environmental prevention

In case of leakage:

Construct breakwaters away from spilled liquids for subsequent recovery and disposal. Prevent access to waterways, sewers, basements or enclosed areas.

SECTION 7

HANDLING AND STORAGE

Precautions for safe handling

Prevent small spills and leaks and avoid slipping hazards. The product can accumulate static charges and cause sparks (ignition sources). When the product is handled in bulk, the spark can ignite any combustible vapor from the liquid or residue (such as switching operations for loading). Use appropriate connection and/or grounding procedures. However, connection and grounding may not eliminate static electricity accumulation disasters. Consult local applicable standards as a guide. Additional references include the American Petroleum Institute, 2003 (protection from static ignition, lightning and stray currents) or the

National Fire Protection Agency No. 77 (recommended practice for electrostatics) or CENELEC CLC/TR 50404 (Electrostatics - conventional code for avoiding static electricity).

Electrostatic collector:

This product accumulates static electricity.

Storage attention

The choice of container may affect the accumulation and dispersion of static electricity. Do not store in open or unmarked containers.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

Contact limit/standard when handling this product

When the oil mist appears, the following air sanitation standards are recommended: the maximum permissible concentration (TLV) is 10 mg/m³ for the United States ACGIH, and the average permissible concentration (STEL) is 10 mg/ m³ for the United States ACGIH.

Biological limit

No specific biological limit.

Note: Limits / standards are for guidance only. Please follow applicable regulations.

Engineering controls

The level of protection and the type of control measures required will vary depending on the potential exposure conditions. Alternative controls include: There are no special requirements under normal use conditions and adequate ventilation.

Personal protection

The choice of personal protective equipment varies according to possible exposure conditions such as application area, treatment work, concentration and ventilation. The following information on the selection of protective equipment for this product is based on the product's recommended use and is developed under normal use.

Respiratory protection:

If an engineering control facility cannot guarantee that the concentration of air pollutants is below a certain level that is sufficient to protect the health of workers, it is best to wear an approved respirator. The selection, use, and maintenance of the respirator must meet the specified requirements, if applicable. Alternative respirator types for this material may be considered to include: Under normal conditions of use, adequate ventilation usually does not require protective measures. Use particle filters when needed. In an environment with high airborne concentrations, use an approved self-contained breathing apparatus to work in positive pressure mode. Self-contained breathing apparatus with an escape bottle is suitable for oxygen deficiency, poor gas/vapor pre-warning characteristics, or overloaded air filters.

Hand protection:

The information provided for any glove is based on published literature and glove manufacturer data. According to the use of conditions to choose the type of gloves and use time. According to the conditions of use, the manufacturer of the gloves can be consulted about the type and the time of use. Check and replace worn and damaged gloves. The types of gloves that can be used to handle this material include: Normal protection is not required under normal conditions of use. Use nitrile gloves, synthetic rubber.

Eye protection:

It is advisable to use safety glasses with side shields if there is a chance of contact.

Skin and body protection:

Any specialized protective clothing information provided here is based on published literature or manufacturer data. The types of work clothes that may be considered for use with this product include: No special protection of the skin when used under normal conditions. Maintain good personal hygiene habits while taking precautions to avoid skin contact.

Hygiene measures:

Maintain good personal hygiene practices, such as washing hands after handling the product, and washing hands before eating, drinking, and/or smoking. Regularly clean overalls and protective equipment to remove contaminants. Discard contaminated clothing and shoes that cannot be washed. Develop good living habits.

Environment controls

See SECTION 6, 7, 12 and 13

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Typical physicochemical properties are as follows. For more information, please consult the supplier in SECTION 1.

General properties

Physical State: Liquid

Color: Colorless

Odor: Unique

Odor Threshold: No data available

Important health, safety and environmental properties

Relative Density (@ 15 C): 0.86

Flash Point [Test Method]: >200°C [ASTM D-92]

Flammability Limit (%vol. in air): Lower Explosive Limit (LEL): No data available, Upper Explosive Limit (UEL): No data available

Flammability (solid, gas): Not applicable

Auto-ignition temperature: No data available

Boiling point / range: No data available

Vapor density (air = 1): No data available
 Steam pressure: [No data available @ 20°C]
 Evaporation rate (n-butyl acetate=1): No data available
 PH: Not applicable
 Solubility in water: Negligible
 Viscosity: 46cSt @ 40°C
 Freezing point: No data available
 Melting point: Not applicable
 Decomposition temperature: No data available
 Oxidation: See HAZARDS IDENTIFICATION.

Other safety information

Pour point: -30°C

SECTION 10

STABILITY AND REACTIVITY

Stability: The product is stable under normal conditions.

Conditions to avoid: Excessive heat. High-energy ignition sources.

Substances to avoid: Strong Oxidizers.

Hazardous decomposition products: Do not decompose at ambient temperature.

Possibility of harmful reactions: No harmful polymerization reaction will occur.

SECTION 11

TOXICOLOGICAL INFORMATION

Acute toxicity

<u>Contact Method</u>	<u>Conclusion/Note</u>
Inhalation	
Toxicity (rat): LC50 > 5000 mg/m ³	Very low toxicity. Based on the analysis of the ingredients.
Irritability (rat): Data available	Risks are negligible at normal temperatures/normal processing temperatures. Based on the analysis of the ingredients.
Ingestion	
Toxicity (rat): LD50 > 2000 mg/kg	Very low toxicity. Based on the analysis of the ingredients.
Skin	
Toxicity (rabbit): LD50 > 2000 mg/kg	Very low toxicity. Based on the analysis of the ingredients.
Irritability (rabbit): Data available	The irritation to the skin at normal temperatures is negligible. Based on the analysis of the ingredients.
Eye	
Irritability (rabbit): Data available	May cause moderate, transient eye irritation. Based on the analysis of the ingredients.

Other health effects from short-term and long-term exposure:

No, not at all.

For additional information please contact the supplier.

Expected health effects from sub-chronic, chronic, respiratory or skin sensitization, mutator, reproductive toxicity, carcinogenicity, target organ toxicity (primary or repeated exposure), inhalation toxicity, and other data based on human experience and/or test data influences.

The list of ingredients is listed below: None

--Retrieved list of regulations --

1 = NTP CARC

3 = IARC 1

5 = IARC 2B

2 = NTP SUS

4 = IARC 2A

6 = OSHA CARC

SECTION 12**ECOLOGICAL INFORMATION**

The information given here is based on available data on the product, its components and similar products.

Ecotoxicity

This product is considered harmless to aquatic organisms.

Mobility

Most of the components - low in solubility, floatable, are thought to migrate from water to land. It is considered to be adsorbed on sediments and waste water solids.

Persistence and degradability

Biodegradable:

Most of the components are considered to be naturally biodegradable.

SECTION 13**DISPOSAL CONSIDERATIONS**

Disposal advice is given based on the materials provided. The treatment method must be consistent with the applicable laws and regulations at that time and be consistent with the characteristics of the material at the time of processing.

Disposal advice

The product is suitable for use as a fuel in a closed and controlled combustion furnace, or under the supervision of incineration at very high temperatures to prevent the occurrence of poor combustion products.

Empty container warning

Empty containers may contain residues and may be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until they are properly repaired or disposed of. Empty containers should be recycled, repaired or disposed of in accordance with governmental regulations by appropriate qualified or authorized contractors. Do not pressurize, cut, weld, braze, solder, drill, polish or expose these containers to heat sources, open flames, sparks, static electricity, or other sources of ignition. They may explode and cause disability or death.

SECTION 14

TRANSPORT INFORMATION

List of dangerous goods in China (GB 12268-2005): Land transport is not regulated.

China dangerous goods name No. (CN No.): not applicable.

International transport classification

1. Ocean Shipping (International Maritime Dangerous Goods, IMDG): according to IMDG-Code, ocean shipping is not regulated. Marine pollutants: no
2. Air transport (International Air Transport Association, IATA): Air transport is not controlled.

SECTION 15

REGULATORY INFORMATION

According to the General Standard for Chemical Classification and Hazard Communication (GB 13690-2009), this product is not a dangerous product.

Regulatory status and applicable laws and regulations

1. Preparation of Chemical Safety Labels (GB15258-2009): Unregulated
2. Law of the People's Republic of China on Prevention of Environmental Pollution by Solid Waste: See SECTION 13.
3. Meets the requirements of the following national/regional chemical catalogs: IECSC, ENCS, KECI, TSCA. Special situation:

Catalog	Current Situation
ELINCS	Restricted use

SECTION 16

OTHER INFORMATION

N/D = No Data Available, N/A = Not Applicable

The safety technical instructions of this product are revised as follows:

According to the implementation requirements of the United Nations Global Harmonization System (GHS) for classification and labelling of chemicals, corresponding updates were made.

Although we provide the data and recommendations listed above, and we think that it is correct at the time of publication, the company does not make a statement on its comprehensiveness or correctness. Before using these data, users should make their own judgement to determine whether they are suitable for their own applications. The company shall not be responsible for any injury caused by the use or belief in such information. Regarding the products involved in information or data, the company does not make a clear or implicit statement or guarantee for the suitability of its commercial, special use, and any other characteristics derived from this.