
Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product name: Hydraulic Mineral Oil for Disc Brake

Product type : Hydraulic Oil

Number : Y83901010-Eng

Company Identification

Manufacture & Distributor : SHIMANO AMERICAN CORPORATION

Address : One Holland, Irvine, California 92618, U.S.A

Emergency Phone number : +1-949-951-5003 (Business Hours Only)

Manufacture & Distributor : SHIMANO EUROPE B.V.

Address : Industrieweg 24, 8071 CT Nunspeet, The Netherlands

Emergency Phone number : +31-341-272222 (Business Hours Only)

Manufacture & Distributor : SHIMANO INC.

Address : 3-77 Oimatsu-cho Sakaiku Sakai OSAKA 5908577, JAPAN

Emergency Phone number : 0570-031961 (Business Hours Only)

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification

<Physical hazards> Not classified

<Health hazards> Aspiration Hazard

Category 1

<Environmental hazards> Acute Aquatic Toxicity

Category 3

Label Elements

<Hazards symbol>



<Signal word> DANGER

GHS Precautionary Statements May be fatal if swallowed and enters airways

Harmful to aquatic life

Prevention : Avoid release to the environment.

Response : IF SWALLOWED: Immediately call a POISON CENTER
or doctor/physician.

: Do NOT induce vomiting.

Storage : Store locked up.

Disposal : Dispose of contents and container to appropriate waste site or
reclaimer in accordance with local and national regulations.

Other hazards

Not classified as flammable but will burn.

Please see Chapter 4 - 8 before use for Prevention/Response/
Storage/Disposal.

Used oil may contain harmful impurities.

3. HAZARDS IDENTIFICATION

Substance or Mixture	: Mixture
Chemical Description	: Blend of highly refined mineral oil and additives.
Component Information	: Lubricant base oil $\geq 97\%$ Additives $\leq 3\%$
Chemical Formula	: Not possible to define.
CAS registry number	: Trade secret
Additional Information	: The highly refined mineral oil contains <3% DMSO-extract, according to IP346.
Pollutant Release and Transfer Register (PRTR) Law	: Not applicable
Industrial Safety and Health Law	: Article 57-2(Delivery of Documents)/No.168 Mineral oil 90-100% Article 57-2(Delivery of Documents)/No.262 2,6-Di-tert-butyl-4-cresol 0.1-0.99%
Poisonous and Deleterious	: Not applicable
Substance Control Law	
Classification of components according to GHS	: [Chemical Identity/Hazard Class (category)/Hazard

4. FIRST AID MEASURES

General Information	: Not expected to be a health hazard when used under normal conditions.
Inhalation	: Remove casualty to fresh air and keep at rest in a position comfortable for breathing. Cover with blanket to keep warm and rest in a quiet surrounding. Seek immediate medical advice and attention.
Skin Contact	: Wash skin with large amount of water using soap.
Eye Contact	: Rinse cautiously with clean water for several minutes. Remove contact lenses, if present and easy to do, and continue rinsing. After rinsing for a minimum of 15 minutes, seek medical advice and attention.
Ingestion	: Without inducing vomiting, call a doctor for treatment. If mouth has been dirtied, clean with water.
Most Important Symptoms/Effects, Acute & Delayed	: If swallowed, may irritate mucous membrane of stomach and induce vomiting. Inhalation if mist may cause feeling ill. Skin contact and eye contact may cause irritation.
Immediate Medical Attention, Special Treatment	: Treat symptomatically. Call a doctor or poison control center for guidance.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

Suitable Extinguishing Media : Concentrated strong liquid in mist and powder forms, carbon dioxide and foam. Use powder and carbon dioxide may be used small fires only. Effective to use foam to shutdown the air in a large fires.

Unsuitable Extinguishing Media : Do not use water in a jet.

Specific Hazards Arising from Chemicals

Hazardous combustion products may include:

A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide.

Unidentified organic and inorganic compounds

Fire fighting instructions : Water the surrounding equipment to cool them down. Cordon off the affected place and its vicinity to all, except the concerned parties.

Protective Equipment & Precautions for Fighters : Ensure to wear protective equipment and approach from windward.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

Personal precautions : Avoid contact with skin and eyes. Prepare suitable equipment and materials.

Protective Equipment and Emergency Procedures Environmental Precautions

: Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. In event of entering in the sea, extend oil fences to prevent from spreading, and sop up with absorbent materials. Use chemicals and/or detergents, they must satisfy technical standards as set by the Ministry of Land, Infrastructure and Transport / Ministry of the Environment.

Methods and Material for Containment and Clean Up

: Promptly remove all ignition sources and stop leakages. In a small leakage, absorb and recover by use of soil, sand, sawdust and waste clothes. In a large leakage, cordon off the danger zone, prevent from entering and enclose it with sand bank and stop outflow. Cover liquid surface with foam, and recover liquid into containers.

Additional Advice : Local authorities should be advised if significant spillages cannot be contained.

7. HANDLING AND STORAGE

Handling:

Technical Measures : In handling this material over the allocated volume, ensure approval to meet requires of the laws. Keep away from heat, sparks, open flames, hot objects. No smoking. Take measures against static discharge. Ensure to wear clothing and shoes made of conductive materials. When fixing or processing machine, it carries out after removing dangerous objects completely. NEVER suck up (siphoning) this material by mouth. Wear suitable protect equipment if skin or eye contact may cause. Seal containers hermetically without handling in violent such as falling, dropping, or jolting.

Ventilation Precautions : see Chapter 8

Precautions for Safe Handling : Use under normal temperature. Prevent from mixing water and impurity. Avoid contact with halogens, strong acids, alkali and oxidizing materials.

STORAGE

Conditions for Safe Storage : Keep containers tightly closed and in a cool, well-ventilated place away from direct sunlight. It is recommended to lock up storage area. Use properly labeled and closeable containers. Avoid heat, sparks, open flame and static accumulation.

Technical Measures : All electrical appliances shall be explosion-proof types , and they all must be earthed.

Precautions for Safe Storage : Avoid contact and storage in same place with halogens, strong acids , alkali and oxidizing materials.

Recommended Materials : Storage in original containers. Do not pressurize empty containers. May cause rupture. Do not weld, heat up, drill or cut containers. May ignite the residue and cause explosion.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.

Equipment : Seal or install ventilations for mist occurs.
Install eye shower and body shower near working site.

Standard Concentration Control : Not specified

Occupational Exposure Limits

(Oil mist, mineral) : Japan Society for Occupational Health(2010)⁽¹⁾ 3mg/m³
ACGIH(2010) TWA[Inhalable fraction.]⁽²⁾ 5mg/m³

Protective Equipment : Skin protection not ordinarily required beyond standard issue work clothes.

Respiratory Protection : No respiratory protection is ordinarily required under normal conditions of use.
Use appropriate equipment in response to the circumstances.

Hand Protection : Use oil-proof protective hand gloves under prolonged or repeated skin contact.

Eye Protection : Wear safety glasses or full face shield if splashes are likely to occur.

Skin and Body Protection : Use oil-proof/long sleeved clothing under prolonged usage.

Appropriate Sanitary Measures : Remove immediately all contaminated clothing.
Contaminated clothing must be laundered before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid at ambient temperature
Color: Pink
Odor: Mineral oil
Odor Threshold (ppm): Not available
pH: Not available
Melting/freezing point: No Data
Initial boiling point/range: Expected >200°C
Flash point: $\geq 130^{\circ}\text{C}$ (COC)
Evaporation rate: Not available
Flammability (solid, gas): Not applicable
Flamm. or expl. Limits: Typical 1-7%(v) (based on mineral oil)
Vapor pressure: Not available
Vapor density: Data not available. Expected >1
Relative density: Approx. 0.83/cm³ at 15 °C
Solubility: Negligible in water, Other solvents: Not available
Partition coeff. (K_{ow}): Not available
Auto-ignition temp.: Data not available. Expected >320°C
Decomposition temp.: Not available
Viscosity: Not available
Explosive properties: Not available
Oxidizing properties: Not available

10. STABILITY/REACTIVITY

Chemical Stability : Stable under normal condition.
Reactivity: : Avoid contact with strong oxidizing agent.
Conditions to Avoid : Avoid contact with halogens, strong acids, alkalis,
and oxidizing materials.
Incompatible Materials : Data not available.
Hazardous Decomposition : Hazardous decomposition products are not expected to form
Products during normal storage.
Generates smoke, carbon monoxide, sulfurous acid
gas etc. during combustion.

11. TOXICOLOGICAL INFORMATION

Basis for assessment: : Information given is based on data on the toxicology of highly refined mineral oils. Toxicological information on product is not available. Components contained above cutoff value is described on Chapter 3.

Acute toxicity - oral: : 1 Oral Expected to be of low toxicity
: $LD_{50} > 5000 \text{ mg/kg}$, Rat⁽³⁾
2 Dermal Expected to be of low toxicity
: $LD_{50} > 5000 \text{ mg/kg}$, Rat⁽³⁾
3 Inhalation(Vapor) Data not available
4 Inhalation(Mist) Low toxicity: $LC_{50} > 5 \text{ mg/l}$, 4h, Rat⁽³⁾

Skin irritation: : Not classified as a skin irritation (rabbit test).⁽³⁾ Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.
Eye irritation: : Not classified as an eye irritation (rabbit test).⁽³⁾

Skin sensitization: : Not expected to be a skin sensitizer

- Germ Cell Mutagenicity : The mutagenic potential of the product category 'other lubricant base oils' has been extensively studied in a range of "in vivo" and "in vitro" assays. The majority of the studies showed no evidence of mutagenic activity.⁽³⁾
- Carcinogenicity: : Product contains mineral oils of types shown to be no carcinogenic in animal skin painting studies.⁽³⁾
Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC monographs: Group 3)⁽⁴⁾, ACGIH⁽⁵⁾ and EU Directives.⁽⁶⁾
- Reproductive and Developmental Toxicity : Results of developmental and reproductive toxicity studies showed no evidence of developmental or reproductive toxicity in rats.⁽³⁾
- Specific target organ toxicity - single exposure : Acute studies do not indicate any specific organ toxicity following single exposure.⁽³⁾
- Specific target organ toxicity - repeated exposure : The repeat dose toxicity has been investigated by dermal and inhalation routes for periods between 4 weeks and up to 2 years. No systemic effects showed.⁽³⁾
- Aspiration Hazard : Classified as a hydrocarbon with kinetic viscosity $\leq 20.5\text{mm}^2/\text{s}$ measured at 40°C. To be regarded as if they cause human aspiration toxicity hazard.
- Other information: : Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal. ALL used oil should be handled with caution and skin contact avoided as far as possible.

12. ECOLOGICAL INFORMATION

- Basis for assessment : Eco toxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Components contained above cut-off value is described on Chapter 3.
- Caution : Poorly soluble mixture.
May cause physical fouling of aquatic organisms.
The Water Accommodated Fraction (WAF) is applied following tests..
- Toxicity : Fish(Fathead minnow, 96h) $LL_{50} > 100\text{mg/L}$ ⁽³⁾
: Fish(Fathead minnow, 14d) $NOEL > 100\text{mg/L}$ ⁽³⁾
: Crustacea (Daphnia magna, 48h) $EL_{50}/NOEL > 10,000\text{mg/L}$ ⁽³⁾
: Crustacea (Daphnia magna, 21d) $NOEL > 10\text{mg/L}$ ⁽³⁾
: Algae(Pseudokirchneriella subcapitata) $NOEL > 100\text{mg/L}$ ⁽³⁾
: In a static 4-day microorganism luminescence inhibition study, no significant luminescence inhibition was observed.⁽³⁾
- Acute Aquatic Toxicity : Not expected to be a hazard.
- Chronic Aquatic Toxicity : Not expected to be a hazard.
- Mobility : Generally floats on water.
Lubricating oil components have estimated $\log K_{oc} > 3$, indicating these components are likely to be adsorbed onto soil and sediment and are not likely to leach to ground water.

Persistence/degradability : Another lubricant base oil was determined to be inherently biodegradable but not readily biodegradable, with a mean degradation of 31% by day 28.

Bioaccumulation : Not available as highly refined base oil.

13. DISPOSAL CONSIDERATIONS

- Material Disposal
- 1 Waste disposal yourself or entrust the industrial waste treatment company who obtained the prefectural governor's permission or municipal corporation. Disposal should be in accordance with applicable regional, national, and local laws and regulations.
 - 2 Do not dispose into the environment, in drains or in water courses.
 - 3 For landfill disposal, destroy by fire and confirm cinders agreed to Waste Disposal Law.
 - 4 In event of burning this material, ensure to carryout work in safe place with guards in position, and select a method that would not cause any harm or damage to others during combustion or explosion.
- Container Disposal
- Purify and recycle or performs suitable disposal in accordance with the standard of related laws and regulations.
Disposal with remove content completely.

14. TRANSPORT INFORMATION

International Restriction

UN Class : Not applicable.

UN Number : Not applicable.

Other Information : This material is not classified as dangerous under IMDG/IATA regulations.

Domestic Restriction : Since domestic laws and regulations shown below are applicable, containers and transportation methods shall be required to follow each and every regulation.

Land

Fire Service Law: : Dangerous goods. Group 4 (flammable liquid), Class 3 petroleum, Danger grade III (water insoluble)

Container: : If product classified as dangerous goods, use containers (other than tanker, tank car and tank truck) for transportation usage, shall meet the Clause 2, Notice Attachment 3, concerning dangerous materials.

Sea : Ship Safety Law: Not Dangerous Goods.

Air : Civil Aeronautics Act: Not Dangerous Goods.

Specific safety measures and conditions for transportation :

- 1 Caution: Flammable.
- 2 Transport remarkably with containers may not cause friction or agitation.
- 3 Display signage on vehicle and provide with fire fighting equipment, if and when required to transport more than the specified quantity.
Total piled height of vehicle shall be less than 3 meters.
- 4 Consolidation of this material with dangerous goods belonging to the 1st and 6th Classification is prohibited.
- 5 Abide by other laws and regulations that are applicable.

15. REGULATORY INFORMATION

International Information

EINECS/ELINCS (EC)	: All components listed or polymer exempt.
TSCA (USA)	: All components listed or in compliance.
METI (JAPAN)	: All components listed or in compliance.

Domestic Information

Fire Service Law	: Dangerous goods. Group 4 (flammable liquid), Class 3 petroleum, Danger grade III (water insoluble)
------------------	--

Marine Pollution	: Waste Oil Regulation.
------------------	-------------------------

Protection Law

Sewage Control Law : Mineral Oil Disposal Regulation. (5mg/L)

Water Pollution : Oil Disposal Regulation. (5mg/L)

Prevention Law

Waste Disposal and Public Cleaning Law

Industrial Waste Regulation

16. OTHER INFORMATION

- Subscribe "%" in this document means weight percentage.

All substances contained in Hydraulic Mineral Oil are registered as existing substances in Inventory of Existing Chemical Substances in China.(IECSC)

[Quotation]

1. Recommendation of Occupational Exposure Limits (2010), Japanese Society of Occupational Health
2. Thresholds limit values for chemical substances and physical agents and biological exposure indices, ACGIH (2010)
3. ECHA (European Chemicals Agency), website "ECHA CHEM", Information on Registered Substances (2011).
SDS of EU suppliers (2011)
4. IARC Monographs Programme on the Evaluation of Carcinogenic Risk to Humans (2006)
5. ACGIH documentation (2006)
6. EC Directive 67/548/EEC Annex I, EU CLP Regulation(EC) No.1272/2008 Annex VI Table3.1,Table3.2

[Reference]

- Globally Harmonized System of Classification and Labeling of Chemicals (GHS) 2nd/3rd revised edition, UNITED NATIONS(2007/2009)
- Japanese Standards Association (JSA), JIS Z 2005:7250, JIS Z 2006:7251, JIS Z 2009:7252
- National Institute of Technology and Evaluation (nite) "GHS Information"
- Japan Advanced Information Center of Safety and Health, "Label and MSDS information for GHS model"

Complied by : Showa Shell Skiyu K.K.
Shimano Inc.

Reference : Showa Shell Skiyu K.K., 1 June 2012, "Shell Tellus Oil C 8,10",
Safety Data Sheet, 461162, Showa Shell Skiyu K.K.

Disclaimer

The information above is believed to be accurate and represents the best information currently available to us. We have reviewed any information contained herein which we received from sources outside SHIMANO INC.. However, no warranty or representation, express or implied is made as to the accuracy or completeness of the data and information contained in this data sheet.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations.

No statement made in this data sheet shall be construed as a permission, recommendation or authorization given or implied to practice any patented invention without a valid license.

SHIMANO INC. shall not be responsible for any damage or injury resulting from abnormal use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material.