

92ΦΦ-16Φ1C
mobile oil # 2

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Data Sheets of Products Safety

? Mobil Gear 632

1. Products and Information on Company

Product Appellation Mobil Compound Oil
 Company Name Rigaku Industrial Corporation
 Address 14-8 Akaohjimachi Takatsuki city Osaka, Japan
 Section in Company Design Management Section
 Person in charge Seiya Shibata
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2. Information of Composition and Components

Distinction of One Element Product or Mixed Product : Mixed Product

Classification of Chemical Product : Lubricant Oil for Industry

Appellation of chemical products	Components and content by percentage	Chemical formula	Arrangement No. of the Official gazette	CAS No.	Object for PRTR
Lubricant base oil	85.5-90				
Mineral oil	9-10	C20-C50	(9)-1692	64742-54-7	No
MoS ₂	0.1-0.5	MoS ₂	(1)-481	1317-33-5	No
Addition A	< 4.5				
Addition B	0.5				No

Toxic components : Lubricant base oil Mineral oil MoS₂ Addition A Addition B

3. Outline of toxicity.

The most serious toxicity. :

Details of toxicity. : Inhalation of fines can cause sickness.

Contact with either skin or eyes can cause inflammation.

Ingestion of chemicals will cause nausea or diarrhea.

Special toxicity : These are not designated as carcinogenic substance.

The cardinal syndrome : Indisposition, Vomiting, Diarrhea

Appellation of the classification(Classified according to the Japanese Standard) :
These products are out of the classification standard but hazard and harmful.

4. First aid treatment.

When inhaled. :

Move the person to a place where the air is fresh as soon as possible and cover his or her body with a blanket to keep them warm and let them rest quietly in bed. If necessary, send a doctor.

When hazardous substances stick to a person's skin. :

After wiping off the substances which are stuck to skin, wash substances away on skin with moderate temperature water and mild soap. If you feel strange, see a doctor as soon as possible.

When hazardous substances come into contact with eyes. :

Move the person to the place where he or she can wash their eyes as quickly as you can.

Wash substance away with a moderate temperature water keeping open for at least 15 minutes. See an oculist as soon as possible.

When swallowed, :

Wipe the remained substance in the mouth out and then gargle with water. Do not force him or her to vomit. If he or she is unconscious, do not put him anything in from his or her mouth. See a doctor a soon as possible.

5. If fire breaks out.

A fire extinguisher. : Liquid extinguisher like a Sprayer, Bubble,
Powder extinguisher , Carbon dioxide extinguisher, Dry sand.

Forbidden extinguisher. : Spraying high pressure water with a hose.
(Spraying like a stick.)

Toxic substances are produced when a fire breaks out. :

Toxic substances (Carbon dioxide, Carbon oxide, Nitrogen oxide, Sulfide oxide) are emitted.

How to extinguish a fire. :

The area must be off-limits save for specific business purpose.

At first, use a Powder Extinguisher or a Carbon Dioxide Extinguisher after removing the burning material.

In a large scale of a fire, it is effective to use a Bubble Extinguisher and shut out air with a Bubble Extinguisher.

If a fire breaks out in the neighborhood, spray water on the facility near here in order to prevent a spread of a fire. If there are movable containers, move them to the safe place as soon as possible.

Extinguish the fire from upwind. Protect against the inhalation of smoke and vapor and extinguish the fire from a safe and defensible place, wearing a suitable protective clothes.

Prevent liquid or material from fire extinguisher flowing into a sewer or area of water for public use.

Protection for persons who extinguish a fire. (Protective clothes, etc.):

The people who extinguish a fire should wear a suitable protective instruments (with a automatic respiration instrument or a heat proof protective clothes.)

6. Measures to be taken during a leakage.

To protect lives. :

Display "No admittance except on business" signs and rope off the area.

The workers should wear the suitable protective instrument (See 8 . Precautions to be taken against exposure.) when needed. Take care that spray does not stick and that gas is not inhaled.

Work from upwind place and evacuate people who are on the lee according to the situation. When a leakage occurred indoor, ventilate the leakage place.

Environmental precautions. :

The following should be prevented.

The leaked substances and polluted liquid wastes are not disposed of and they flow out into the public water area or permeate into underground.

How to remove. :

In case of small amount. ;

Absorb the leaked substances with soils and sands ,damp cloth, an nonflammable adsorbent. Collect substances in a vessel and then wipe away with a damp cloth.

In case of a large leak. ;

Stop the leak by raising the ground level. Collect the leaked waste in a vessel.

The collected liquid should be disposed as with a small leak.

Prevention of secondary pollution. :

Remove any possible causes of ignition in the neighborhood as soon as possible.

Forbid smoking, flame or other causes of ignition (working of heater ,switch).

Prepare a suitable extinguisher for ignition.

7. Measures for treatment and preservation.

Treatment :

Technical measurements ; Take measurement for the vessel, equip against static electricity. Working cloth and Safety shoes, etc should be conductive.

Treatment place should be in a no fire risk area. The electrical facility should be an explosion proof structure.

The vessels should not be knocked over, dropped ,shocked or dragged.

Caution ;

If more than the specified numbers are treated, treat them in the Factory,

Storage-space ,Treatment-place where the Japanese laws on Dangerous Substances are satisfied.

Prevent the leak of liquid and divergence of vapor as much as you can. If there is a place where vapor occurs, install local ventilation equipment to keep the density of the dangerous substance under the allowed limit in the working environment

Treat the substances at the room temperature. Be careful not to mix with water or foreign substance.

As vapor occurring from the oil is heavier than air, the vapor tends to stay for a long time.

For this reason, be careful to provide ventilation and prevent fires.

When you repair or manufacture the machine facility, etc, where the dangerous substance remains, do it in a safe place after removing the dangerous substance.

Do not swallow dangerous substances.

If there is a possibility that you may touch or inhale, wear personal protective clothes.

When you take the OIL out of the vessel, use a pump, etc. Do not Syphon with your mouth using a fine tube.

Caution for safety ; Do not touch the OIL with strong Oxide or strong basic substances.

Preservation:

Suitable Storage Conditions ;

The electrical equipment ,etc should be in an explosion proof structure and all of the equipment should be grounded.

The vessel should be preserved at a fixed place in a well ventilated chilly dried storage.

Keep the vessel out of the direct rays of sun.

The vessel should be preserved after closing completely as best you can.

Prevent causes of ignition (Heat, Spark, Flame),high temperature substance, and accumulation of the static electricity .

Do not allow the coexistence of the OIL with a halogen, strong oxide or strong basic substance, etc. Preserve the OIL vessel displaying a Dangerous Substance Sign.

The safe pack material for the vessel.:

Follows the related law with the fire laws, etc.

Do not press the vacant vessel. If pressed, the vessel may explode.

The vessel should not be welded ,heated, drilled or cut. If done, the vessel will explode and the left over liquid may spray.

8. Precautions to be taken against exposure.

Measures for facility :

When the OIL is treated at an indoor workshop, the followings should be performed in order to restrain exposure of the OIL at the minimum level and maintain good working order.

- 1) Making the cause of vapor airtight and installing local ventilation equipment or a central ventilation system.
- 2) The equipment with electricity should be an explosion proof structure ,if necessary.
- 3) Measures against static electricity for the equipment should be taken.

Install a shower, a rest room ,eye-bathing area and display their position clearly.

The allowed density :

Chemical appellation	Managed density 2) 1999 edition	ACGIH(2000) 3)		Industry & Hygiene Society (2000) 4)	
		TLV-TWA ppm	TLV-STEL mg/m3	ppm	mg/m3
Lubricant base oil	No setting	5mg/m3*1	—	—	3*1
Mineral oil	No setting	5mg/m3*1	—	—	3*1
MoS ₂	No-setting	—	—	—	—
Addition A	?	?		?	
Addition B	?	?		?	

*1 Mineral oil mist

Protective clothes :

Select and wear clothes which are suitable for work from the followings.

Protective clothes for breath :

Usually not necessary. Wear a gas mask if necessary(for organic gas).

Protective gloves for hands :

If you contact for a long time or repeatedly, wear gloves which are oil proof (not permeated.)

Protection for eyes :

Wear usual glasses if you are sprayed.

Protection for skin and body.:

When you treat for long time or environmental pollution occurs, wear long sleeve work clothes which are oil proof.

Measures to be taken for the suitable hygiene.:

The protective clothes should be washed after using and kept clean.

The material of the protective clothes should be oil proof and an absorbent of a mask should be changed periodically according to the used time.

Polluted clothes should be reused after cleaning completely.

9. Physical and chemical Characteristic.

Physical state

State	:	Liquid
Color	:	Dark brown
Odor	:	Special odor (Mineral oil odor)
PH	:	No data

The characteristic temperature (Physical state changes)/Temperature range

Vaporization temperature	:	> 250°C	
Ignition point	:	> 200°C	(COC)
Explosion characteristic			
Limit of explosion	:	Upper point 7 vol.%	Lower limit 1 vol.% (Estimated value)
Vapor density	:	Heavier than air	
Density	:	> 0.88 g/cm ³	
Solubility	:	Insoluble in water.	
Other data			
Pour point	:	-22.5	

10. Stability and reaction character

Stability : Stable under the usual conditions.

Reaction characteristic : Reacts if it touches a strong oxide substance, acid, corrosive agent(Base).

Conditions to be avoided. : High temperature, Heat, Flash, Fire or Cause of ignition, Do not contact with Halogen substance, Strong oxide, Alkali substance, Oxide.

Harmful and dangerous resolution products : After burning, Carbon oxide
Carbon dioxide, Nitrogen oxide, Sulfide oxide are produced.

11. Information on Harm

Acute toxicity : If the OIL is inhaled, you feel indisposed. If the OIL is ingested, you may vomit or have diarrhea.

To be taken orally(Toxicity)	Rat	LD50	> 2g/kg (Estimated value)
	Rat	LD50	16mg/kg(MoS ₂)

Local effect : If you are in contact with it for a long time , your skin may feel irritated.

Sensitization : Sensitization for skin is not shown according to a guinea pig experiment.(9)

Chronic toxicity : The highly purified OIL base(The Same High Quality Oil base as we use the base.) does not show the carcinogenesis as a result of Skin Application Test for Mouse.

Carcinogenesis :

(Base) IARC has classified Group 3

(It is impossible to classify regarding carcinogenesis.). 5)

EU reported that classification as carcinogenesis does not have to be applied. 6)

(Addition) ;

There are no data which show carcinogenesis.

Displacive transformation : Highly Refined OIL shows no reaction for Revised EMUS Method. 9)

12 Information on Environmental Effect :

Fish toxicity :

The toxicity test for the rainbow trout has been performed for the similar product It is estimated that there is no toxicity for fish. 9)

13 Caution for disposal .

Dispose the OIL according to the applicable law.(Follow the Laws and Regulations of Japanese government, each prefecture, provinces)

Perform disposal according to the following guidelines.

Burning up. :

Spray the OIL into a AFTER BURNER and INCINERATOR with SCRAPER. and burn up.(Be careful when burnt up, lots of smoke and harmful gas is produced.)

When burnt up, perform at the safe place where harm or damage does not occur even though burning or explosion occur. A guard is necessary.

Disposal of the activated sludge :

Low density waste water should be disposed of after the treatment equipment of the activated sludge.

Entrustment to Dealers :

After making the contents clear, you can entrust the Disposal of OIL to the dealers or the local public organization which have a license from the prefecture governor as an Industrial Waste Disposal Dealer.

Disposal by Reclaim. :

After burning up the OIL with an incinerator in the facility, you have to check the constituents of the cinders.

The following materials should be less than the standard values which are regulated

by the Prime Minister's Office.

Copper or its chemical compounds, Zinc or its chemical compounds, Fluoridation compounds, Alkyl Mercury compounds, Mercury or its chemical compounds,

Arsenic or its chemical compounds.

- ③ The Dangerous Substances of the first class and the sixth class should not be placed together on a car

2. Marine transportation and Air transportation.

Shipping Safety Law : No Dangerous Substances, Individual transportation,
Transportation after loaded in pieces.

A civil aeronautics law ; Non Dangerous Substances.

Measures Conditions for Special Safety of Transportation.

As the OIL is flammable, NO FIRE.

When the OIL is transported by cars, a driver needs to carry a YELLOW CARD.

15. Applied law

The main applied laws are as follows.

A Fire Law : Dangerous substances The fourth classification ,The fourth
petroleum(Specification : 6000ℓ)

The Labor Safety Sanitary Law : Enforcement ordinance(18-2) Toxic substances to
be notified the appellation.

The Water Pollution Prevention Law. : Regulation for Oil Ingredient Discharge
(5mg/ℓ is Allowed density.) Detected as
the Normal Hexane Extraction

The International Convention for
the Prevention of Pollution from Ships. :

Regulation for Oil Ingredient Discharge
(Principal)

The Sewage Law :

Regulation for Mineral Oil Discharge(5mg/ℓ)

The Waste Disposal and Cleaning Law :

Regulation for Industrial Waste(Forbidden
for Diffusion and Outflow)

16. Other information

A reference regarding the contents in these papers.

Rigaku Industrial Corporation TEL.0726(93)7992 FAX 0726(94)6500

Books for reference

- 1) ANSIZ129,1-1994 American National Standard Institute.
- 2) Poisoning Tel.110 (Hoken Dojinsha)
- 3) Counsel of the Allowed Density.(1996) Japan Industrial Sanitary Society.38
P.172-183
- 4) Thresholds Limit values for chemical substances and physical agents and biological exposure indices, ACGIH(2000)
- 5) IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO HUMANS. VOLUME.33
- 6) EC Instructions of a board of directors 67/548/ECC Attached document 1 「List of Harmful Substances」
- 7) A Guideline for Production of Products Safety Data Sheets.
(Japan Chemical Industrial Association)
- 8) A Guideline for Production of Oil Products Safety Data Sheets.(Oil League)
- 9) Mobil Oil Corporation MSDS (TRN:610865-64 06/03/94)
- 10) JIS Z 7250-2000 Safety Data Sheets for Chemicals (MSDS)
- 11) Retrieval System of Law Regulation of Chemicals of Japan Chemical Association.

The Products Safety Data Sheets are supplied to the Dealers as the reference information in order to secure the safe treatment for the dangerous and harmful chemical products.

After dealers understand that each chemical product should be treated according to the substance of the chemicals for each treatment ,they should make good use of these data sheets.

For this reason, this data sheet is not a letter of guarantee.