Date Prepared: October 03, 2010

Material Safety Data Sheet

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1. Identification of the Substance/Preparation and of the Company

Product Name	NEOVAC MR-200
Product Code	00013
Manufacturer	MORESCO Corporation
Address	5-5-3, Minatojima-minamimachi, Chuo-ku, Kobe-city, Hyogo, Japan
Telephone Number	81-78-303-9010 FAX: 81-78-303-9020
Emergency Telephone Number	Functional Fluids Sales Department Sales Section
	Tel: 81-6-6262-3310 FAX: 81-6-6262-3327
	Functional Fluids Sales Department Tokyo Sales Section
	Tel: 81-3-3273-7526 FAX: 81-3-3281-7756
	Lubricating Oils Manufacturing Department Technology Section
	Tel: 81-791-42-2100 FAX: 81-791-43-3179
	Customer Center
	Tel: 81-6-6262-3385 FAX: 81-6-6262-3327
	Email Address: customercenter@moresco.co.jp
Recommended Use and Restrictions on Use	VACUUM PUMP OIL

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2. Hazard Identification

GHS Classification:

Physical Hazards:

Explosives	Classification Not Possible
Flammable Gases	Not Applicable
Flammable Aerosols	Not Applicable
Oxidizing Gases	Not Applicable
Gases Under Pressure	Not Applicable
Flammable Liquids	Not Classified
Flammable Solids	Not Applicable
Self-Reactive Substances and Mixtures	Classification Not Possible
Pyrophoric Liquids	Not Classified
Pyrophoric Solids	Not Applicable
Self-Heating Substances and Mixtures	Classification Not Possible
Substances and Mixtures Which, in contact with water, Emit Flammable Gases	Classification Not Possible
Oxidizing Liquids	Classification Not Possible
Oxidizing Solids	Not Applicable

Organic Peroxides	Classification Not Possible
Corrosive to Metals	Classification Not Possible
Health Hazards:	
Acute Toxicity - Oral	Not Classified
Acute Toxicity - Dermal	Not Classified
Acute Toxicity -Inhalation: Gas	Not Applicable
Acute Toxicity - Inhalation: Vapor	Classification Not Possible
Acute Toxicity - Inhalation: Dust, Mist	Category 4
Skin Corrosion/Irritation	Category 3
Serious Eye Damage/Eye Irritation	Category 2B
Respiratory Sensitization	Classification Not Possible
Skin Sensitization	Not Classified
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Not Classified
Toxic to Reproduction	Classification Not Possible
STOT/Systemic Toxicity - Single Exposure	Category 2
STOT/Systemic Toxicity - Repeated Exposure	Category 1
Aspiration Hazard	Category 1
Environmental Hazards: Hazardous to Aquatic Environment	
Hazardous to The Aquatic Environment-Acute Hazard	Classification Not Possible
Hazardous to The Aquatic Environment-Chronic Hazard	Classification Not Possible

Label Elements:

Pictograms/Symbols

Signal Ward	Danger
Hazard Statements	Harmful if inhaled
	Causes mild skin irritation
	Causes eye irritation
	Suspected of causing genetic defects
	May cause damage to lungs
	Causes damage to lungs and skin through prolonged or repeated exposure
	May be fatal if swallowed and enters airways
Precautionary Statements	[Prevention]
	Obtain special instructions before use.
	Do not handle until all safety precautions have been read and understood.
	Do not breathe mist/vapors/spray.

Use only outdoors or in a well-ventilated area.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Wear eye protection/face protection.
Use personal protective equipment as required.
[Response].
If Swallowed: Immediately call a Poison Center or doctor/physician. Do not induce vomiting.
If Inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If in Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
If exposed or concerned: Get medical advice/attention.
If skin irritation occurs : Get medical advice/attention.
Get medical advice/attention if you feel unwell.
[Storage]
Store locked up.
[Disposal]
Dispose of contents/container in accordance with regulations.

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3. Composition/Information on Ingredients

Distinction between Substance and Mixture :	Substance	
Chemical Name/Generic Name:	Petro-hydrocarbons	
Chemical Formula	Not identified	
Ingredient and Concentration	Lubricating base oil	100%

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4. First-Aid Measures

Inhalation:	Remove victim to fresh air and let him rinse mouth thoroughly with water. Wrapping a blanket and the like around him to keep warm for a rest, call a doctor/physician immediately.
Skin Contact:	Wash skin with soap and water.
Eye Contact:	Immediately rinse eyes with clean water for at least 15 minutes. Remove contact lenses if present. Continue rinsing. Get medical attention, if eye irritation persists.
Ingestion:	Do not induce vomiting. Immediately call a doctor. If affected, the mouth should be rinsed out thoroughly with water.
Expected Acute and Delayed Symptoms, and	If swallowed, may suffer from diarrhea and vomiting. May cause inflammation if in eyes.

Most Important Symptoms/ Effects:	May cause inflammation if on skin. May feel unwell if mist is inhaled.

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5. Fire-Fighting Measures

Suitable Extinguishing Media	Foggy reinforcing agent, foam, powder, or carbon dioxide
Unsuitable Extinguishing Media	Jet water
Specific Hazards	Remove containers from a fire area if safe to do so. If containers cannot be removed, cool them by pouring water in a manner that they may not be damaged. Keep cooling containers thoroughly with plenty of water after extinguishing fire.
Specific Fire-Fighting Measures	Shut off the fire source. Use powder or carbon dioxide extinguishers at the beginning of fire. It is effective to intercept the air from a big fire with foam extinguishers. Use of water may cause spreading of fire. Cool the surrounding facilities with water spray. Evacuate non essential personnel around the fire.
Special Protective Actions for Fire-Fighting	Wearing protective glasses, protective clothing, and if necessary, respiratory protective equipment, start to fight fire on the windward side.

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6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures	Immediately isolate the spill area wide enough in all directions. Evacuate non essential personnel. If skin or eye contact is possible, wear protective equipment. If mist is produced, wear respiratory protective equipment to avoid inhalation. Stay on the windward side. Leave away from the low ground. Ventilate confined rooms before entering.
Environmental Precautions	Take up as much as possible to avoid soil contamination and water pollution. Avoid release to the environment.
Collection/Neutralization	In the case of a large amount: Dike ahead of liquid spill area to minimize migration and then sweep into an empty container for disposal in a safe place. After disposal, wash away with plenty of water. In doing so, take care to prevent the high concentration of wastes from entering public watercourses such as rivers. Be sure to wear protective equipment.

	In the case of a small amount: Take up into an empty container by absorbing the spill with earth and sand or rags, and furthermore sop up with rags thoroughly.
Methods and Materials for Containment	If spilled, minimize migration and take up by scooping or absorbing with appropriate absorbent. Ground all the equipment used to handle spill.
Prevention of Secondary Hazards	Remove all the ignition sources immediately. (Do not smoke nearby and keep away from sparks and flames.) Prevent spilling fluid from flowing in the drains, basement or the close place. Remove the surrounding ignition sources Report to the related organs for help. Do not let water go in the container.

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7. Handling and Storage

Handling:

Technical Measures	Before repairing machinery with remnant oils on, remove them thoroughly in a safe place. Take precautionary measures against static discharge and wear electro conductive clothing and shoes. As vapors released from petroleum products are heavier than air, they are liable to stagnate. Due to it, attention should be paid to ventilation and fire. Handle at room temperatures, paying attention to moisture and to impurities not to mix with. If skin or eye contact is possible, wear protective equipment. If mist is produced, wear respiratory protective equipment to avoid inhalation. Use a pump and the like to take out of container. Do not suck through a tube. Do not weld, heat, hole, and cut off the container. Residues may ignite involving explosion.
Local Exhaust Ventilation/ Full Ventilation System	Refer to ‘8. Exposure Controls/Personal Protection’.
Avoiding Contact	Refer to ’10. Stability and Reactivity’.
Precautions for Safe Handling.	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Be cautious not to use any naked fire. Provide exhaust ventilation to keep the concentration of vapors below

	the exposure limit.
	Wash hands thoroughly after handling.
	Use in a well-ventilated area.
	Do not eat, drink or smoke when using this product.
	Do not press an empty container. It may explode under pressure.
	Do not drink.
	Keep out of reach of children.

Storage:

Technical Measures	Keep container in fire prevention storage area.
	Keep container in a cool, well-ventilated area.
	Avoid heat, sparks, flames, and static electricity.
	Keep container tightly closed.
	Store avoiding exposure to direct sunlight.
Incompatible Materials	Refer to '10. Stability and Reactivity'.
Conditions for Safe Storage	Store in a well-ventilated area.
	Store avoiding exposure to direct sunlight.
	Store away from oxidizer.
	Store locked up.
Materials for Containers/Packaging	When replacing the container, use metal or glass container. Some kinds of resin-treated container may melt.

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8. Exposure Controls/Personal Protection

Permissible Concentration (Exposure Limit, a biological exposure index)

Japan Society for Occupational Health (2008): 3mg/m^3 (mineral oil mist) [1)]

ACGIH (2008): TWA 5mg/ m^3 (mineral oil mist) [2)]

Standards for Allowable Density of Hazardous Substances in Labor Operation Air: Not established

Engineering Controls:	When mist and vapors are produced, seal off sources or provide exhaust ventilation. Facilities for rinsing eyes and washing a body are required near the workplace.

Personal Protective Equipment

Respiratory Protection:	Wear appropriate respiratory protection.
Hand Protection:	If necessary, wear oil-resistant protective gloves.
Eye Protection:	If diffusion is possible, wear eye protection.
Skin and Body Protection:	If necessary, wear protective clothing and face protection.
Hygienic Precautions:	Wash hands thoroughly after handling.
	Regularly inspect protective equipment according to the inspection table of protective equipment.
	Do not eat, drink or smoke when using this product.

9. Physical and Chemical Properties

Physical State:	
Appearance	Liquid
Color	Light Yellow
Odor	Slight oily odor
pH	Not applicable
Melting/Freezing Point	Not applicable
Boiling Point	230℃/13Pa(0.1mmH)
Flash Point	≧250 ℃(COC)
Explosive Range (Explosive Limits)	Upper limit: 7% Lower limit: 1% (estimated value)
Vapor Pressure	No data available
Vapor Density (air=1)	No data available
Specific Gravity (Density)	0.88g/cm^3 (15℃)
Solubility	Insoluble in water
Partition Coefficient: n-octanol/water	No data available
Auto-ignition Temperature	No data available
Pour point	<-10℃
Volatility	None (at room temperatures)

10. Stability and Reactivity

Stability	Stable
Possibility of Hazardous Reactions	Reacts with strong oxidizer.
Conditions to Avoid	No data available (Hazardous reactions will not occur under normal use)
Incompatible Materials	Strong oxidizer
Hazardous Decomposition Products	None

11. Toxicological Information

Acute Toxicity:

Oral	LD_{50} > 5000mg/kg Acute Toxicity:Oral is classified in Not Classified.
Dermal	LD_{50} > 5000mg/kg Acute Toxicity:Dermal is classified in Not Classified.
Inhalation	LD_{50} = 2.18mg/L Acute Toxicity:Inhalation is classified in Category 4 (Harmful if inhaled).

Skin Corrosion/Irritation	Causes mild skin irritation（Rat） Skin Corrosion/Irritation is classified in Category 3 (Causes mild skin irritation).
Serious Eye Damage/Eye Irritation	Causes mild eye irritation（Rat） Serious Eye Damage/Eye Irritation is classified into Category 2B (Causes eye irritation)
Respiratory or Skin Sensitization	Respiratory Sensitization. : No information available Respiratory Sensitization is classified in Classification Not Possible. Skin Sensitization is classified in Not Classified.
Germ Cell Mutagenicity	Based on the increase in the abnormal cells in the cytogenetic study [chromosomal aberration test] (somatic cell in vivo mutagenicity test) using the rat (IUCLID (2000)), and based on the fact that increase was observed in frequency of the chromosomal aberration in the peripheral blood lymphocyte of the human who received occupational exposure (IARC suppl.7 (1987)), and on the fact that there being no information about the productive cell in vivo genotoxicity study. Germ Cell Mutagenicity is classified in Category 2 (Suspected of causing genetic defects).
Carcinogenicity	Highly refined oil is into group 3 (IARC (1987)), and the proposal of ACGIH (2006) can also be said to be the almost same category. Carcinogenicity is classified in Not Classified.
Reproductive Toxicity	No information available. Reproductive Toxicity is classified in Classification Not Possible.
STOT/Systemic Toxicity - Single Exposure	There is the statement that there is the grossly, histopathological acute changes (details unknown) in dependance to dose (1.51～5.05mg/L) in the rat test of inhalation exposure (IUCLID (2000)). Specific Target Organ Toxicity/Systemic Toxicity (Single Exposure) is classified in Category 2 (May cause damage to lungs).
STOT/Systemic Toxicity - Repeated Exposure	Pulmonary fibrosis, lipid pneumonias and lipogranuloma of lungs are reported in humans who received exposure of the mineral oils or the mist over many years (ACGIH (2001) and IARC 33 (1984), EHC 20 (1982)), and generation of the serious folliculitis is reported in the epidemiological study by occupational exposure to cutting oil (IARC 33 (1984)) . Specific Target Organ Toxicity/Systemic Toxicity (Repeated Exposure) is classified in Category 1(Causes damage to lungs and skin through prolonged or repeated exposure).

Aspiration Hazard	Ingestion of mineral oil causes the aspiration into the lungs, and as a result it occures the pneumonie huileuses or chemical pneumonia in t he human (EHC 20 (1982), IARC 33 (1984), ICSC (2001), ACGIH (2001)). Aspiration Hazard is classified Category 1 (May be fatal if swallowed and enters airways.)

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12. Ecological Information

Ecotoxicity	No information available. Ecotoxicity is classified in Classification Not Possible.
Persistence and Degradability	No information available
Bioaccumulative Potential	No information available
Mobility in Soil	No information available
Other Adverse Effects	No information available
Environmental Criteria	No information available

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13. Disposal Considerations

Waste Residues	Dispose the waste according to national and local regulations. Do not dump.
Contaminated Containers and Packaging	Contaminated or empty container/packaging are to be disposed according to national and local regulations.

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14. Transport Information

International Regulation	Not applicable
UN Classification	Not applicable
Special Precautions:	Load the containers in a manner that they are certain not to result in direct sunlight exposure, damage, corrosion, leak, while being transported. Load the containers in manner that they are not to fall apart while being transport. Do not place heavy load on top of the container.

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15. Regulatory Information

No Information

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16. Other Information

References:

1) Recommendation of Occupational Exposure Limits by Japan Society for Occupational Health
2) Thresholds limit values for chemical substances and physical agents and biological exposure indices by ACGIH
3) National Institute of Technology and Evaluation

1. As evaluations on hazards are not necessary satisfactory, special attention should be paid for use.
2. This MSDS, summarizing matters to be attended to, is required for proper use of the product and is intended for normal use.
3. Referring to this MSDS, properly use and handle this product on the user's own responsibility.
4. The contents of this MSDS are based on information available as of today and our knowledge. The information, data, and evaluations herein are not guaranteed, and in addition, may be revised due to revision of laws or knowledge newly obtained.