



SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier	: MFO 180
Other means of identification	: Marine Fuel Oil, Fuel Oil, Residual Fuel, Minyak Bakar, Residual Oil or Heavy Fuel Oil (HFO).
Recommended use of the chemical and restrictions on use	: Used for diesel fuel engine with slow rotation, boiler, furnace or external combustion engine.
Manufacturer	: PT Pertamina (Persero) Jl. Medan Merdeka Timur 1A Jakarta Pusat Kode Pos 10110 Phone: 1500-000 Email: pcc@pertamina.com
Emergency phone number	: 1500-000

2. HAZARD IDENTIFICATION

Classification	: Flammable liquid, category 4 Skin corrosion/irritation, category 2 Aspiration hazards, category 1 Hazardous to the aquatic environment (chronic), category 2
Signal word	: Warning
Hazard statement	: <u>Physical Hazard</u> H227 – Combustible liquid <u>Health Hazard</u> H304 – May be fatal if swallowed and enters airways H315 – Causes skin irritation H336 – May cause drowsiness or dizziness <u>Environmental Hazard</u> H411 – Toxic to aquatic life with long lasting effects
Precautionary statement	: <u>Prevention</u> P103 – Read label before use P280 –Wear protective gloves/protective clothing/eye protection/face protection. <u>Response</u> P301 + P310 –IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P302 + P352 –IF ON SKIN: Wash with plenty of soap and water. P304 + P340 –IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P308 + P313 –IF exposed or concerned: Get medical advice/attention. P331 –Do NOT induce vomiting. <u>Storage</u> P403 + P233 + P235 –Store in a well-ventilated place. Keep container tightly closed. Keep cool.



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2. HAZARD IDENTIFICATION

Disposal

P501 -Dispose of contents/container in accordance with national regulations.

Pictogram

:



Other hazards which do not result in classification

:

Irritation to the respiratory tract, dizziness, nausea, and unconsciousness. Repeated contact with the skin for a long time can cause skin irritation or more serious skin defects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name

CAS No.

Concentration (%)

Hydrocarbon

64741-62-4

100

4. FIRST AID MEASURES

Necessary description

- **In case of eye contact** : Flush eyes with plenty of water. Remove contact lenses. If irritation persists, refer to a doctor/physician.
- **In case of skin contact** : Wash the contaminated skin with water and soap. Dry it using dry and clean piece of cloth. Remove contaminated clothes and wash before reuse.
- **If inhaled** : Keep the victims away from further exposure with this product. At the occurrence of irritation to respiratory tract, dizziness, nausea and unconsciousness, seek medical help or doctors. When breathing stops do resuscitation from mouth to mouth or pure oxygen.
- **If swallowed** : Do not give anything through mouth that can induce nausea or vomiting. If spontaneous vomit happens, place head lower than the body to avoid aspiration.

Most important symptoms/effects

:

Repeated exposure may cause dry and cracked skin. Effects of H₂S depends on air concentration. In 0.02 ppm it will be smelled like rotten egg; 10 ppm may cause and respiratory irritation; 100 ppm may cause cough, headache, nausea, eye irritation, and loss of olfactory ability; 200 ppm is potential to cause lungs oedema for 20-30 minutes; 500 ppm may cause unconsciousness and dismissal of breath; >1000 ppm may cause unconsciousness, fatality so resuscitation is need. H₂S may cause loss of olfactory ability. Sign and symptoms of dermatitis consist of burning sensation and dry skin.

Indication of Immediate medical attention and special treatment needed, if necessary

:

Symptoms: dizziness, discomfort, headache, nausea, vomit, liver disorder, kidney disorder may cause lungs oedema and pneumonitis. Oxygen therapy is needed. It needs right treatment.



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5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide (CO₂), dry chemical powder and foam

Unsuitable extinguishing media : -

Specific hazards

- **Other explosion and fire hazards** : Combustion material contains particulate such as smoke, CO, nitrogen oxide, and sulphur oxide and other unidentified compounds. Flammable vapor may appear under flash point. Vapor is heavier than water, floating on soil, and able to ignited. It may float and ignite above sea water. H₂S and sulphur oxide may ignite if heated. Fire and explosion generally happen in unprotected storage tanks, delivery tanks, or other closed container around fire location.

Flash point°C : 60

Flammability value : LEL 0.6%, UEL 7.0%

Hazardous chemical composition : Carbon monoxide (CO)

Special protective actions for fire fighters

- a. **Carbon dioxide (CO₂)** : Spray to the origin of fire in the same direction with the wind.
- b. **Dry chemical powder** : Spray to the origin of fire in the same direction with the wind.
- c. **Foam** : If the fire is in a container, spray the foam to inner wall of the container (not to the ignited liquid) in the same direction with the wind. If the fire occurs because spill, spray to the origin of fire in the same direction with wind until all the fire covered. Do not dispose the spill to the clean water source (drinking water).

Special protective equipment for fire-fighter : If fire occurs in limited/indoor/closed area, fire fighter operator must wear Self-Contained Breathing Apparatus (SCBA). This condition happen in unprotected storage tank near a fire location.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures : Keep away from fire source. Avoid direct contact with skin, eye, and clothes. Evacuate personnel to the safe place. Beware of vapor which accumulates to form explosive concentration. Vapor can accumulate in low areas. Use personal protective equipment. Ensure adequate ventilation. Do not operate any electric device.

Environmental precautions : Prevent oil spill goes into water ditches, disposal channels, and seepage into soil. Keep away all things that may ignite. Try to disperse vapor or direct to safe location using fog spray. Do precaution action to avoid any static



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6. ACCIDENTAL RELEASE MEASURES

- Procedures** : electrical charge, make sure all electrical charge is bonded and grounded.
: Report spill according to the valid system and procedures. If spill can go into drainage or streams, do immediate report to the authority.
- Methods and materials for containment and cleaning up** : Eliminate all possible ignition condition.
For small amount spill (<1 drum), transfer spill to labeled container and close for disposal or product recovery. Let residue evaporates. Do oil spill absorption using sorbent, sawdust, vermiculate, and other fire retardant material. Clean and dispose cleaned material in the right waste disposal according to valid regulations.
For huge amount of spill (>1 drum), transfer spill mechanically (e.g with vacuum truck) to recovery tank or disposal. Do not clean residue with water, let it evaporate, and clean with right material then dispose according to valid regulation. Dispose contaminated soil safely to the container or do reclamation.

7. HANDLING AND STORAGE

- Precautions for safe handling** : When absorbed by skin for a long term and repeated, it will cause serious effect. Avoid the vapor or mist from being inhaled. Apply alarm system to monitor H₂S content in air. Keep the tank clean. Portable containers for storage must be placed on the ground and the nozzle must be attached to the container during filling to prevent static electricity.
- Conditions for safe storage (including any incompatibility)** : Store in a cool place. Flammable atmosphere can be formed on top of the storage tank, although it is stored below flash point. Keep away from combustible and flammable materials. For storage in drum, do not stack drum more than 3 level, prevent from water seepage. For tank storage, make sure tanks have been designed specifically for this product.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

- **Exposure limit** : TWA 200 mg/m³ (as total of hydrocarbon vapor)
Skin
- **Biological exposure indicator** : Not available

Appropriate engineering control

- **Ventilation** : If product is used in a relatively closed room, a local ventilation must be provided. Ventilation and the

**SAFETY DATA SHEET****8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

equipment used must be explosion proof.

Individual protection measures

- **Eye and face protection** : Wear eye protection (*chemical type goggles*).
- **Skin protection** : Wear nitrile gloves for long term handling (>240 minutes), neoprene/PVC gloves for incidental contact. Make sure gloves is resistant to chemical substances and heat.
- **Respiratory protection** : Wear respiratory protection when the pollution concentration in the air is higher than the permissible TLV.
- **Hygiene practices** : Apply good personal hygiene.

9. PHYSICAL AND CHEMICAL PROPERTIES AND SAFETY CHARACTERISTICS

Characteristic	Test Result
Organoleptic (physical appearance, color, etc)	: Liquid, brown, blackened
Odor	: Hydrocarbon
Odor threshold	: No data available
pH	: No data available
Melting/freezing point	: Cannot be applicated
Boiling point/boiling range	: 150-600°C
Flammability	: Flammable liquid
Flash point	: 60 °C
Evaporation rate	: No data available
Lower/upper flammability limit and explosion limit	: LEL 0.6%; UEL 7.0%
Vapor pressure	: No data available
Vapor density	: 991 kg/m ³
Relative density	: No data available
Solubility	
• Water solubility	: Not soluble
• Other solubility	: No data available
Partition coefficient (n-octanol/water)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: 180 mm ² /sec(at 50°C)

10. STABILITY AND REACTIVITY

- Reactivity** : Chemically unreactive
- Chemical stability** : Stable in normal condition
- Posibility of hazardous reactions** : Hazardous reaction may not be happened if handled and stored in valid regulation
- Conditions to avoid** : Heat, fire sparks, flame, or condition that induce electrostatic charge
- Incompatible materials** : Halogen, strong acid, strong base dan strong oxidizer.



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10. STABILITY AND REACTIVITY

Hazardous decomposition products : Carbon monoxide (CO), carbon dioxide (CO₂), sulphur oxide, H₂S, and other unidentified organic compound

11. TOXICOLOGICAL INFORMATION

Comprehensive toxicological/health information

- **Acute toxicity** : Vapor or mist may not cause respiratory irritation
- **Skin corrosion/irritation** : No data available. Suspected that it may cause mild irritation according to compound or product which has similar structure or composition.
- **Serious eye damage/irritation** : No data available. Suspected that it may not cause serious damage but cause mild irritation according to compound or product which has similar structure or composition.
- **Respiratory or skin sensitization** : No data available. Suspected that it may not cause respiratory/skin sensitization according to compound or product which has similar structure or composition.
- **Germ cell mutagenicity** : No data available. Suspected that it is not mutagen according to compound or product which has similar structure or composition.
- **Carcinogenicity** : No data available. Suspected that it is not carcinogen according to compound or product which has similar structure or composition.
- **Reproductive toxicity** : No data available. Suspected that it is not reproductive toxicant according to compound or product which has similar structure or composition.
- **STOT-single exposure** : No data available. Suspected that it may cause narcotic effect according to compound or product which has similar structure or composition.
- **STOT-repeated exposure** : No data available. Suspected that it is not toxic to specific organ after repeated exposure according to compound or product which has similar structure or composition.
- **Aspiration hazards** : No data available but this product may cause death if swallowed or enters the airway according to compound or product which has similar structure or composition.

Information on the likely routes exposure : Inhaled, swallowed, skin contact, and eye contact.

Symptoms related to the physical, chemical, and toxicological characteristics : Skin irritation signs and symptoms may include a burning sensation, skin rash, or swelling. Eye irritation signs and symptoms may include a burning sensation and a temporary eye irritation. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, short breath, and/or fever, the onset of respiratory symptoms may be delayed for several hours after exposure.

Delayed and immediate effects, and also chronic effects from both short or : No data available. Further testing has not been done.



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11. TOXICOLOGICAL INFORMATION

- long term exposure
- Numerical measure of toxicity** : No data available. Further testing has not been done.
- Interative effects** : No data available. Further testing has not been done.
- Where specific chemical data are not available** : No data available. Further testing has not been done.
- Mixture** : No data available. Further testing has not been done.
- Mixture vs. Ingredient information** : No data available. Further testing has not been done.
- Other in formation** : Won't affect human in good hygiene condition.

12. ECOLOGICAL INFORMATION

- Ecotoxicity** : In long term, soil seepage may cause soil water contamination or aquifer.
- Persistence and degradability** : No data available. Further testing has not been done.
- Bioaccumulation potential** : No data available. Detailed toxic effects is related to concentration nominal value. Further testing has not been done.
- Mobility in soil** : Soil seepage may cause aquifer pollution.
- Other adverse effects** : Oil film that appears on water may disturb oxygen transfer and cause microorganism damage

13. DISPOSAL CONSIDERATION

- Disposal methods** : This product may be burned in closed place to gain energy, or burned in incinerator. This product can also be recycled in the recycling place determined by the government.

**Law information: this product sludge waste is classified as hazardous waste (except it is not proven after TCLP (Toxicity Characteristic Leaching Procedure) testing), so that the disposal must follow valid provision.*

14. TRANSPORT INFORMATION

USA DOT

- UN Number** : UN 3082
- UN proper shipping name** : Environmentally hazardous substance, liquid, N.O.S
- Transport hazard class(es)** : 9
- Packing group (if available)** : PG III
- Environmental hazard** : -
- Special precautions for user (UN Model Regulation)** : -

RID / ADR

- UN Number** : UN 3082
- UN proper shipping name** : Environmentally hazardous substance, liquid, N.O.S

**SAFETY DATA SHEET****14. TRANSPORT INFORMATION**

Transport hazard class(es) : 9
Packing group (if available) : PG III
Environmental hazard : -
Special precautions for user : -

IMO

UN Number : UN 3082
UN proper shipping name : Environmentally hazardous substance, liquid, N.O.S
Transport hazard class(es) : 9
Packing group (if available) : PG III
Environmental hazard : -
Special precautions for user : -

ICAO / IATA

UN Number : UN 3082
UN proper shipping name : Environmentally hazardous substance, liquid, N.O.S
Transport hazard class(es) : 9
Packing group (if available) : PG III
Environmental hazard : -
Special precautions for user : -

15. REGULATORY INFORMATION

Safety, health, and environmental regulation (specific for the product in question) : - Peraturan Menteri Perindustrian Nomor 23/M-IND/PER/4/2013 tentang Perubahan Atas Peraturan Menteri Perindustrian Nomor 87/M-IND/PER/9/2009 Tentang Sistem Harmonisasi Global Klasifikasi dan Label pada Bahan Kimia
- Peraturan Direktur Jenderal Basis Industri Manufaktur No. 04/BIM/PER/I/2014 tentang Petunjuk Teknis dan Petunjuk Pengawasan Pelaksanaan Sistem Harmonisasi Global Klasifikasi dan Label Pada Bahan Kimia
- Peraturan Pemerintah Republik Indonesia Nomor 74 Tahun 2001 Tentang Pengelolaan Bahan Berbahaya dan Beracun
- Keputusan Menteri Tenaga Kerja No Kep-187/Men/1999 tentang Pengendalian Bahan Kimia Berbahaya
- Peraturan Menteri Kesehatan Republik Indonesia Nomor 70 Tahun 2016 tentang Standar dan Persyaratan Kesehatan Lingkungan Kerja Industri
- ACGIH®. 2016. TLVs® and BEIs®
- Registered at TSCA EINECS/ELINCS dan AICS
- OSHA 29 CFR 1910.1200

16. OTHER INFORMATION



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Composing date :
Revision date : March 2017
Key/legend or acronym used in the SDS : ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road
ASTM – American Society for Testing and Materials
CEC – The Coordinating European Council
IATA – The International Air Transport Association
ICAO – The International Civil Aviation Organization
IMO – The International Maritime Organization
NAB – Nilai Ambang Batas
PG – Packaging Group
RID – Regulation concerning the International Carriage of Dangerous Goods by Rail
UN – United Nations
USA DOT – United States Department of Transportation
Key literature references and sources for data used in the SDS : The data above is cited from but not limited to information sources like DOT ERG No.128, OSHA 29 CFR 1910.1200

Disclaimer

The information is composed based on current knowledge and intended to describe safety, health, and environment hazard of the product. Therefore, it should not be construed as guarantee any specific property of the product. All risks while using this product is the user's responsibility. It is not allowed to make change of this document, except there is legal consent.