



SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier	: Pertamina Dex
Other means of identification	: Solar 53, Automotive Diesel Fuel, High Speed Diesel Fuel, Gasoil, HSD atau Distillate Diesel Fuel.
Recommended use of the chemical and restrictions on use	: Designed for diesel-fueled engine with high rotation and some of middle rotation Not recommended for gasoline-fueled engine.
Manufacturer	: PT Pertamina (Persero) Jl. Medan Merdeka Timur No. 1A Jakarta Pusat ZIP Code 10110 Phone: 1500-000 Email: pcc@pertamina.com
Emergency phone number	: 1500-000

2. HAZARD IDENTIFICATION

Classification	: Flammable liquid, category 3 Aspiration hazards, category 1 Skin corrosion/irritation, category 2 Acute toxicity (inhalation), category 4 Carcinogenicity, category 2 Specific target organ toxicity (STOT)-repeated exposure, category 2 Hazardous to the aquatic environment (long-term hazard), category 2
Signal word	: Warning
Hazard statement	: <u>Physical Hazard</u> H226 – Flammable liquid and vapor <u>Health Hazard</u> H304 – May be fatal if swallowed and enters airways H315 – Causes skin irritation H332 – Harmful if inhaled H351 – Suspected of causing cancer H373 – May cause damage to organs through prolonged or repeated exposure <u>Environmental Hazard</u> H411 – Toxic to aquatic life with long lasting effects
Precautionary statement	: <u>Prevention</u> P202 – Do not handle until all safety precautions have been read and understood P210 – Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P233 – Keep container tightly closed. P240 – Ground/bond container and receiving equipment. P241 – Use explosion-proof electrical/ventilating/lighting/equipment.



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2. HAZARD IDENTIFICATION

- P242 - Use only non-sparking tools.
- P243 –Take precautionary measures against static discharge.
- P260 –Do not breathe dust/fume/gas/mist/vapours/spray.
- P271 –Use only outdoors or in a well-ventilated area.
- P273 –Avoid release to the environment.
- P280 –Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301 + P310 –IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P331 – Do NOT induce vomiting.

P303+P361+P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P332 + P313 – If skin irritation occurs: Get medical advice/attention.

P312 – Call a POISON CENTER or doctor/physician if you feel unwell.

P362 + P364 – Take off contaminated clothing and wash it before reuse.

P370 + P378 – In case of fire: Use sand, dry chemical, or foam for extinction.

P391 –Collect spillage.

Storage

P403 + P235 –Store in a well-ventilated place. Keep cool.

P405 –Store locked up.

Disposal

P501 -Dispose of contents/container according to valid disposal regulations

Pictogram

:



Other hazards which do not result in classification

:

Current transfer may happen when pumping and other operational activity is being done.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name

CAS No.

Concentration (%)

Hydrocarbon

-

>99.9



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4. FIRST AID MEASURES

Necessary description

- **In case of eye contact** : Flush eye with plenty of water if any irritation occurred..If further irritation occurs, refer to a doctor/physician.
- **In case of skin contact** : Remove clothes and wash the contaminated skin with flowing water.
If irritation occurs, wear clean cloth and obtain medical advice. If there is no irritation, wash the skin with water and soap or antiseptic liquid.
Get medical advice immediately if further irritation occurs.
Wash the contaminated clothing before reuse.
If product is injected to body, get medical advice immediately.
- **If inhaled** : If symptoms on airways occur after exposure, move victim to fresh air and keep at rest in comfortable position for breathing. Get medical advice immediately if further irritation persists.
If victim stops breathing, clean victim's airways and do artificial respiration/ cardiopulmonary resuscitation (CPR).
If further breathing problem occurs, oxygen must be given to the victim by qualified person. Get medical advice immediately.
- **If swallowed** : Aspiration hazard : do not induce vomit and give anything through mouth. This product may be absorbed to lungs and cause severe pulmonary damage.
If the victim feels asleep or unconscious and vomit, tilt the victim to the left side with head in lower side.
If possible, do not leave the victim without any supervision and observe his/her respiratory system. Get medical advice.

Most important symptoms/effects

: Dry skin and skin irritation may occur after repeated exposure. High vapor concentration may cause mild respiratory irritation, headache, sleepy, imbalance, disorientation, and fatigue. This product may also cause digestive irritation, nausea, vomiting, and diarrhea if swallowed.

Indication that need immediate medical attention and special treatment

: Treat symptomatically

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media** : Carbon dioxide (CO₂), dry chemical powder and foam
- Unsuitable extinguishing media** : Water



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5. FIRE-FIGHTING MEASURES

Specific hazards

- **Other explosion and fire hazards** : This product may be ignited if there is heat, fire sparks, or other ignition sources (static electricity, mechanic/electric tools, and other electronic devices). The product's vapor may cause explosion in the room, in confined space, outside the room, and even in disposal lines. This product may float on the water. It is heavier than air and may be accumulated in low area. If the product's container is not placed in cool area, the container can be broken because of heat or fire.

Flash point°C : Min. 125.6°F atau 52°C

Flammability value : LEL 1.3%, UEL 6.0%

Hazardous chemical composition : Carbon monoxide (CO), smoke and uncompleted combustion product. Nitrogen oxide and sulphur are also maybe produced.

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).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures : The product spillage may cause condition that is easy to ignite and explode.
Keep away all ignition sources and hot metal surfaces from the spillage (if possible).
Use explosion proof electrical devices.
Do not contact with product spillage.
For huge spillage, isolate the area immediatelt and keep away any unconcerned people.
Wear appropriate personal protective equipment, including respiratory protection.

Environmental precautions : Stop the spillage/leakage if possible.
Prevent oil spill goes into drainage, sewage system, and soil.



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6. ACCIDENTAL RELEASE MEASURES

- Use foam to minimalise vapor from spillage.
Use water to minimalise environment contamination.
- Procedures** : 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** : Do oil spill control with oil spill kit (absorbents: sawdust, sorbent pad/pillow, etc, and other fire retardant material). Clean and dispose cleaned material in the right waste disposal according to valid regulations. If soil contamination occurs, clean the contaminated soil for remediation or disposal according to valid regulations.

7. HANDLING AND STORAGE

- Precautions for safe handling** : Cause serious effect if absorbed by skin.
Avoid inhalation of vapor and mist.
Portable storage container must be placed on soil and nozzle must always contacted with container while fulfilling it to avoid any electrostatic charge.
- Conditions for safe storage (including incompatibility)** : For indoor storage, be aware of the ventilation.
Storage in tank must aware about the classification requirements.
Flammable vapor may be molded although has been stored at lower temperature than the flammable point.
Keep away from flammable goods.
Storage must be grounded and bonded. It also must be completed with pressure vacuum valve and flame arrester.
Keep away from flammable goods, fire, electrical, or other heat sources.
Give "No Smoking" and "Keep Away from Open Flame" sign

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

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

Appropriate engineering control

- **Ventilation** : If product is used in closed area, the area must be completed with proper exhaust fan. All the ventilation and tools used must be explosion proof.

Individual protection

- **Eye and face protection** : Wear eye protection (*chemical type goggles*).

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

- **Skin protection** : Wear protective gloves (leather or PVC).
- **Respiratory protection** : Wear respiratory protection if concentration is above the TLV.
- **Hygiene practices** : Do good personal hygiene.

9. PHYSICAL AND CHEMICAL PROPERTIES AND SAFETY CHARACTERISTICS

Characteristic	Test Result
Organoleptic (physical appearance, color, etc)	: Liquid, clear, and bright
Odor	: Diesel
Odor threshold	: No data available
pH	: No data available
Melting/freezing point	: Cannot be applied
Boiling point/boiling range	: 200-370°C
Flammability	: Flammable liquid
Flash point	: Min. 52 °C
Evaporation rate	: No data available
Lower/upper flammability limit and explosion limit	: LEL 1.3%; UEL 6.0%
Vapor pressure	: No data available
Vapor density	: No data available
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	: 260 °C
Decomposition temperature	: No data available
Viscosity	: 2.0 – 4.5 mm ² /sec(at 40°C)

10. STABILITY AND REACTIVITY

Reactivity	: Chemically unreactive.
Chemical stability	: Stable in normal condition.
Possibility of hazardous reaction	: No hazardous reaction if handled and stored according to valid regulations.
Condition to avoid	: Heat, fire sparks, flame, or condition that induce static electricity.
Incompatible materials	: Halogen, strong acid, strong base and strong oxidizer.
Hazardous decomposition product	: Carbon monoxide (CO).

11. TOXICOLOGICAL INFORMATION**Comprehensive toxicological/health information**

- **Acute toxicity** : Acute toxicology testing with mist and vapor result shows no acute effect from respiratory.



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11. TOXICOLOGICAL INFORMATION

- **Skin corrosion/irritation** : Cause skin irritation. Repeated exposure cause dry skin.
- **Serious eye damage/irritation** : Cause mild eye irritation.
- **Respiratory or skin sensitization** : May not cause respiratory/skin sensitization.
- **Germ cell mutagenicity** : May not cause genetical effect that can be inherited.
- **Carcinogenicity** : Suspected that it may cause cancer. Crude oil distillate is known to cause cancer on mice with long and continuous exposure. Further study shows this tumor is produced by nongenotoxic mechanism which related to cell damage and repairment, and tend to not cause tumor without prolonged skin irritation.
- **Reproductive toxicity** : Exposure through skin to pregnant mice with representative dosage does not cause adverse effect both to the parent and the offspring.
- **STOT-single exposure** : May not cause effect to specific organ after single exposure.
- **STOT-repeated exposure** : May not cause effect to specific organ after repeated exposure.
- **Aspiration hazards** : May cause death if swallowed or enters the airway.
- Likely routes exposure information** : Inhaled, swallowed, and skin contact.
- Symptoms related to the physical, chemical, and toxicological characteristics** :
- Delayed and immediate effects, and also chronic effects both in short or long term exposure** : Dry skin and skin irritation may occur after repeated exposure. High vapor concentration may cause mild respiratory irritation, headache, sleepy, imbalance, disorientation, and fatigue. This product may also cause digestive irritation, nausea, vomiting, and diarrhea if swallowed.
- Numerical measure of toxicity** : 4.65 mg/L (CL50 – inhalation)
>5 g/kg (LD50 – oral)
>4.1 g/kg (LD50 – dermal)
- Interactive 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** : See numerical measure of toxicity
- Mixture vs. Ingredient information** : No data available. Further testing has not been done.
- Other information** : Diesel engine exhaust is classified as carcinogenic by International Agency for research on cancer (IARC) and National Toxicology Program (NTP).

12. ECOLOGICAL INFORMATION



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- Ecotoxicity** : Soil seepage may cause soil water contamination or aquifer.
- Persistence and degradability** : Oil and gas is complex combination of hydrocarbon. Hydrocarbon is not an easy biodegradable. Some types of hydrocarbon in crude oil are suspected as persistent, besides some of hydrocarbon components that degradable by microorganism in anaerob condition.
- Bioaccumulation potential** : Log Kow value shows around 3.9-6 that indicate it has high potential to bioaccumulated. Low weight compound is easy to matabolite. Bioaccumulation potential od compound with high molecular weight is limited with its low water solubility and bigger molecule size.
- Mobility in soil** : Product release in water will let hydrocarbon floats and spreads on water surface. For lighter component, evaporation becaomes important process to lessen the hazard for aquatic organism. In air, hydrocarbon vapor will react with radical hydroxil with half time less than 1 day. Fotooxidation on water surface is also significant reducing process especially for polycyclic aromatic compound. In water, most of the components will be adsorbed in sediment. Adsorbtion is the most dominant a physical process for releasing to soil. Adsorbed hydrocarbon will be degraded slowly both in water and soil.
- Other adverse effects** : No data available. Further testing has not been done.

13. DISPOSAL CONSIDERATION

- Disposal methods** : May be burned in closed place to receive energy or in incinerator. This product can be processed in recycling place according to valid regulations.

**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 1202
UN proper shipping name : Diesel fuel
Transport hazard class(es) : 3
Packing group (if available) : PG III
Environmental hazard : -
Special precautions for user (UN Model Regulation) : -

RID / ADR

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

UN Number : UN 1202
UN proper shipping name : Diesel fuel
Transport hazard class(es) : 3
Packing group (if available) : PG III
Environmental hazard : -
Special precautions for user : -

IMO

UN Number : UN 1203
UN proper shipping name : Diesel fuel
Transport hazard class(es) : 3.3
Packing group (if available) : PG III
Environmental hazard : Sea contaminant – hazardous for environment
Special precautions for user : If transported by ship in international water, the product is regulated under International Convention for the Prevention of Pollution from Ships (MARPOL) Annex I.

ICAO / IATA

UN Number : UN 1202
UN proper shipping name : Diesel fuel
Transport hazard class(es) : 3
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 Presiden Republik Indonesia
- 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®



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16. OTHER INFORMATION

Composing date :
Revision date : March 2017
Key/legend or acronym used in the SDS : ASTM (American Society for Testing and Material)
CAS No. (Chemical Abstract Service Number)
SCBA (Self Contained Breathing Apparatus)
PVC (Poly Vinyl Chlorida)
LEL (Lower Explosion Limit)
UEL (Upper Explosion Limit)
TCLP (Toxicity Characteristic Leaching Procedure)
USA DOT (United States Department of Transportation)
RID/ADR (European Agreements Concerning the International Carriage of Dangerous Goods by Rail and by road)
IMO (International Maritime Organization)
ICAO/IATA (International Civil Organization Aviation/ International Air Transport Association)
UN (United Nations)
PG (Packing Group)
ACGIH (American Conference on Governmental Industrial Hygienist)
TLV (Threshold Limit Value)
BEI (Biological Exposure Indices)
Key literature references and sources for data used in the SDS : -

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.