

Material Safety Data Sheet

1. MATERIAL AND MANUFACTURER INFORMATION

Material name: Export Protection Diesel
Synonyms: I
Suggested purposes and restrictions on use: Fuel for diesel cars and tractors; solvent
Name, address, and telephone number of the manufacturer or supplier: Oil Movement Department, Refinery Division, FPCC No. 15, Formosa Industrial Complex, Mailiao Village, Yunlin County
Emergency contact telephone number/fax number: +886+5+6815710 FAX : +886+5+6811042

2. HAZARDS IDENTIFICATION INFORMATION

Material hazard classification: Combustible Liquid Level 4, Skin Corrosion/Irritation Level 3, Eye Irritation Class 2B, Aspiration Hazard Level 2
Label content : Symbol sign: Danger to Health 
Warn sentence: Warning Hazard warning messages: Combustible liquid Can cause slight skin irritation Can causes eye irritation Possible hazards if swallowed and enters the respiratory tract Hazard precautions: Keep far away from ignitable materials – no-smoking Do not inhale gas/fume/vapor/fog Place containers at a well ventilated place Avoid contact with eyes
Other hazards: -

3. COMPONENT IDENTIFICATION INFORMATION

Mixtures:

Chemical Properties:	
Hazardous components	Concentration or concentration range (component%)

Diesel 68476-34-6	100%
Sulfur 7704-34-9	< 500ppmw

4. FIRST AID MEASURES

<p>First aid methods for different exposure pathways:</p> <p>Inhalation: Immediately move the toxicated victim away from the site to a undisturbed, cool, nicely ventilated space. If the victim looks pale, make the victim lie down and elevate both legs. If the face is flushing then lie the head on one side, elevate both legs, loosen collar and belt. Seek medical attention immediately</p> <p>Skin contact: Move the toxicated victim away from the contaminated area. Remove clothing of the infected skin and wash the infected area with clean water and neutral soap under a faucet. If there are burning or painful sensations of the skin then seek medical attention immediately. If there are no redness or pain of the skin but only dry feeling, whether medical attention is necessary may be determined after an observation of six hours.</p> <p>Eye contact: Move the toxicated victim away from the contaminated area. Rinse eyes under a faucet or eye wash for more than 15 minutes. Turn upper and lower eyelids inside out and slowly rotate eyes for complete rinsing. For those wearing glasses, it will be best to first remove glasses and then rinse. If pain continues, seek for an ophthalmologist</p> <p>Ingestion: Diesel must be removed within fifteen minutes by a professional. Active carbon (1g/kg body weight) or laxatives(Should not be used with those already having diarrhea, increased bowel movement, or intestine paralysis, and impaired renal function) can be used. Do not induce vomiting for the toxicated victim in order to prevent complications of the lung. Loosen the collar and belt. Seek medical attention immediately</p>
Major Symptoms and Hazard Effects: N/P
Protection for first aid personnel: Protection equipment of level C should be worn in a safe area to provide first aid
Tips for physicians: Providing oxygen is to be considered if inhaled by the victim. Gastric lavage and active carbon are for consideration if swallowed

5. FIRE EXTINGUISHING MEASURES

Usable fire extinguishing agents: Foam, dry chemical powder, carbon dioxide, water spray
<p>Special hazards that may be encountered when extinguishing a fire:</p> <ol style="list-style-type: none"> 1. The liquid will float on water and causing fire to spread 2. Toxic gases might be released at the fire scene 3. Containers overheated for a long time at the fire scene might crack
<p>Special fire extinguishing procedures:</p> <ol style="list-style-type: none"> 1. Evacuate and then extinguish fire from a safe distance or protected spot 2. Take position at the upwind side to avoid hazardous vapors and toxic degraded substances

3. Stop spill over before extinguishing the fire. If the spill over cannot be stopped and there are no danger of the surroundings, then let the burnout of the fire. If the spill over is not stopped while first extinguishing the fire, the vapor and air will form an explosive mixture and ignite again.
4. Separate substances that have not caught fire and protect personnels.
5. Under safe conditions, move the containers away from the fire scene.
6. Use water sprays to cool down exposed storage tanks or containers at the fire scene.
7. The use of water sprays to extinguish the fire might be invalid, unless the fire fighters have been trained to extinguish fires of various flammable liquids.
8. If the spill over has not ignited, spray water mist to disperse the vapor and to protect the personnels who are attempting to stop the spill over
9. The use of water column to extinguisher fire is invalid.
10. For a huge fire with a large area, use remotely operated water spray control stands or automated fire water monitors.
11. Evacuate from the fire scene and let the fire burnout if possible
12. Stay away from storage tanks
13. Evacuate immediately if the safety valve of the storage tanks have sounded or changed color due to catching on fire.
14. Personnels who have not worn special protection equipment cannot enter the fire scene.

Special safety equipment needed by fire extinguishing personnel:

Firefighters must be equipped with an air respirator, protective gloves, and fire clothes

6. LEAK HANDLING METHODS

Individual precautions: Avoid heat sources, flames, sparks, and other flammable substances

Environmental Precautions:

1. Provide appropriate protection and ventilative equipment
2. Remove the heat and fire source

Clean-up methods:

1. Appropriate absorbents which contains clay, sand, aluminum pieces or other materials
2. When a safe condition is allowed, attempt to stop or reduce the leakage
3. Try to recover the leaked liquid or absorbents as much as possible
4. Avoid flowing into sewers and gutters
5. If a large amount of substance have leaked into the surrounding environment, related environmental protection units should be informed and be dealt according to the Soil and Groundwater Pollution Remediation Act

7. SAFE DISPOSAL AND STORAGE METHODS

Disposal:

1. Operate under a well ventilated area and use the minimum amount
2. Stay far away from heat sources or flames

<p>3. Use fire-resistant containers as possible</p> <p>4. Wear appropriate protection equipment to avoid substance contact with the eyes and skin</p> <p>5. Avoid processes that create mist drops</p>
<p>Storage:</p> <p>1. Keep storage in closed containers and place at a cool and dry location. Keep away from general work areas and incompatible substances</p> <p>2. The storage area should have an appropriate independent ventilation system but with no heat sources, flames, or sparks</p> <p>3. Qualified safe solvent-use containers are best to be used</p> <p>4. The container should be covered when not in use and kept in storage within a fire-resistant and grounded cabinet</p> <p>5. Solvent-resistant materials should be used in the storage and operation area</p> <p>6. Grounding is necessary to prevent static</p>

8. EXPOSURE PREVENTION MEASURES

<p>Engineering control:</p> <p>1. Use partial exhausting equipment when used in large amounts or temperature rises</p> <p>2. General Ventilation may be used with small using amounts at room temperature</p> <p>3. The ventilated equipment should have explosion protection measures</p>			
<p>Control parameters:</p>			
Average allowable concentration in eight-hour day TWA	average allowable short-term concentration STEL	maximum allowable concentration CEILING	Biological indicators BEIs
-	-	-	-
<p>Biological indicators:</p>			
<p>Individual safety Equipment:</p> <p>Respiratory protection:</p> <p>1. 1000 ppm and below: Chemical filtration can with organic vapors or respiratory protection equipment or oxygen-supplying respiratory protective device</p> <p>2. 2500 ppm and below: Air-supplying fixed flow rate respiratory protective device, powered air-cleaning respiratory protection equipment with organic vapor cans</p> <p>3. 5000 ppm and below: Overall chemical-filtration respiratory protective device, gas mask with organic vapor filtration cans, tight mask with respiratory protective equipment or respiratory protective devices with powered organic filtration cans, overall self-carry type or air-supplying respiratory protective devices</p> <p>4. For unknown concentration: Positive pressure self-carry respiratory protective device, overall positive pressure air-supply respiratory protective device to aid positive pressure respiratory protective device</p>			

<p>5. Evacuation: Gas mask with organic filtration can, evacuation-type self-carry respiratory protective device</p> <p>Hand protection: 1. Protection gloves. Materials of nitrile rubber, polyethylene, Viton are the best</p> <p>Eye protection: 1. Chemical anti-splash goggles, face shield</p> <p>Skin and body protection: 1. One-piece work clothes of the rubber material described above, work boots</p>
<p>Health measures:</p> <ol style="list-style-type: none"> 1. Take off contaminated clothes as soon as possible after work. The clothes have to be washed clean before wearing them again or discarding. In addition the hazard of the contamination must be informed to the clothes washing workers 2. Smoking, eating, and drinking is prohibited at the working area 3. Hands must be washed after dealing with the substance 4. Maintain the cleanness of the working site

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Colorless to light yellow light petroleum appearance liquid	Odor: Petroleum odor
Smell threshold : -	Melting point: -
pH: -	Boiling point/boiling point range: 170~360 °C
Flammability (solid, gas)	Flash point: >62°C
Decomposition temperature: -	Test method: Closed cup
Self-ignition temperature: >220°C	Explosion limit: 1%~6%(V/V)
Vapor pressure: 2mmHg@20°C	Vapor density: >5 (air=1)
Density: 0.82~0.845 (water=1)	Solubility: Nearly immiscible with water
Octanol/ water partition coefficient (log Kow) : 3~6	Vaporization speed: -

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions
Hazardous reactions in special situations: No occurrence of polymerization
Situations to Avoid: sparks, heat, ignition source
Substances to Avoid: Oxidant (such as peroxides, chlorine, and fluorine)
Hazardous decomposition products: Toxic carbon oxides are released during heat degradation, such as carbon monoxide

11. TOXICOLOGICAL INFORMATION

Exposure method: Skin, inhalation, ingestion, eyes
Symptoms: Irritation, dizziness, light-headed, scorching of the chest, headache, nausea, infirmity, fluster and loss of coordination, stomach and intestine disorder

(vomit and diarrhoea), respiration disorder (pneumonia) and renal failure
<p>Acute toxicity:</p> <p>Skin: 1. Dryness and irritation due to the loss of fatty acids from the skin. 2. Stomach disorder (vomit and diarrhoea), respiration disorder (pneumonia) and renal failure are caused by absorbing an accumulative hazardous amount via the skin.</p> <p>Inhalation: 1. Vapor, mist drops, and aerosols will cause nasal and laryngitic irritation, dizziness and light-headed, scorching of the chest, headache, nausea, infirmity, fluster and loss of coordination. 2. Weariness is caused due to fluster and directional disorder. Spasm is occasionally occurred.</p> <p>Ingestion: 1. Scorching of the mouth, throat, and stomach. Nausea, diarrhea, weariness, and other ingestible symptoms. 2. Serious lung damage or death might occur if sucked into the lungs.</p> <p>Eye: 1. An extreme high concentration will irritate the surrounded ocular membrane, causing tears and redness.</p> <p>LD50(animal test, absorption path) : >5,000 mg/kg(rats , swallow) LC50(animal test, absorption path): >5,000 mg/m³/4H(rats , ingestion)</p>
<p>Chronic and long-term toxicity:</p> <p>1. Eczema and dermatitis when long-term contact with the skin 2. Might cause restraint of central nervous system, lung disease, stomach and intestine disease. IARC has classified as Group3 : Causing of cancer is indeterminable</p>

12. ECOLOGICAL INFORMATION

<p>Eco-toxicity :</p> <p>LC50 (Fish) : — EC50 (Water invertebrates) : — Bioconcentration Factor (BCF) : —</p>
<p>Persistence and degradability:</p> <p>Half-life (air): - Half-life (surface water): - Half-life (ground water): - Half-life (soil): -</p>
<p>Bio-accumulativity:</p> <p>Besides evaporation from the surface if diesel is discharged into the water; part of the compositions might adsorb with the sediments and suspensions in the water, or may cause bio-accumulativity inside fish or organic life forms.</p>
<p>The fluidity of soil:</p> <p>Diesel in the water and soil will go through bio-decomposition under aerobic and anaerobic conditions. The diesel in the soil will evaporate from the dry or wet soil. Some of the compositions will strongly adsorb with the soil.</p>
<p>Other negative effects: -</p>

13. WASTE DISPOSAL METHODS

1. Handling is based with the Local regulations.
2. Treated by sanitary landfill or incinerated by approved incineration plants

14. TRANSPORT INFORMATION

U.N. number:1202
U.N. shipping name: Diesel
Shipping hazardous classification: Combustible liquids of class III
Type of packaging: III
Marine pollutant (yes/no) : no
Special transport methods and precautions: -

15. REGULATORY INFORMATION

1. Installation Rule of Labor Safety and Health
2. Regulation of Labelling and Hazard Communication of Dangerous and Harmful Materials
3. Traffic Regulation
4. Methods and Facility Standards for the Storage, Clearance and Disposal of Industrial Waste
5. Public Hazardous Materials and Flammable Pressurized Gases Establishment Standards and Safety Control Regulations

16. OTHER INFORMATION

Reference Literature	CONCAWE; information of related oil products provided by ITRI	
Table producing unit	Name: Environmental Health and Safety Team, Refinery Division, Formosa Petrochemical	
	Add/Tel: No. 15, Formosa Industrial Complex, Mailiao Village, Yunlin County +886+5+ 6815621	
Produced by	Title : Refinery HSE team	Name (signature/seal): Chen kuan hung
Production Date	June 1, 2011	
Notation	The symbol “—” of above represents there are no related information at the present. And the symbol “ / ” represents that column is unsuitable for the substance.	