SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Diesel Low Sulfur (LSD) and Ultra Low Sulfur Diesel (ULSD)
Synonyms : 888100004478
MSDS Number : 888100004478  Version : 2.4
Product Use Description : Fuel
Company : Tesoro Refining & Marketing Co.
            300 Concord Plaza Drive, San Antonio, TX 78216-6999
Tesoro Call Center : (877) 783-7676  Chemtrec : (800) 424-9300
(Emergency Contact)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview
Regulatory status : This material is considered hazardous by the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200).
Signal Word : WARNING
Hazard Summary : Toxic. Combustible Liquid

Potential Health Effects
Eyes : Eye irritation may result from contact with liquid, mists, and/or vapors.
Inhalation : Vapors or mists from this material can irritate the nose, throat, and lungs, and can cause signs and symptoms of central nervous system depression, depending on the concentration and duration of exposure.
Skin : Skin irritation leading to dermatitis may occur upon prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed. Long-term, repeated skin contact may cause skin cancer.
Ingestion : Harmful or fatal if swallowed. Do NOT induce vomiting. This material can irritate the mouth, throat, stomach, and cause nausea, vomiting, diarrhea and restlessness. Aspiration hazard if liquid is inhaled into lungs, particularly from vomiting after ingestion. Aspiration may result in chemical pneumonia, severe lung damage, respiratory failure and even death.
Target Organs: Central nervous system, Eyes, Skin, Kidney, Liver

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuels, diesel, No 2; Gasoil - unspecified</td>
<td>68476-34-6</td>
<td>60 - 100%</td>
</tr>
<tr>
<td>Nonane</td>
<td>111-84-2</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>95-63-6</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>Sulfur</td>
<td>7704-34-9</td>
<td>15 ppm maximum</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

Inhalation: Move to fresh air. Give oxygen. If breathing is irregular or stopped, administer artificial respiration. Seek medical attention immediately.

Skin contact: Take off all contaminated clothing immediately. Wash off immediately with soap and plenty of water. Wash contaminated clothing before re-use. If skin irritation persists, seek medical attention immediately.

Eye contact: Remove contact lenses. Rinse thoroughly with plenty of water for at least 15 minutes. If symptoms persist, seek medical attention immediately.

Ingestion: Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Seek medical attention immediately.

Notes to physician: Symptoms: Dizziness, Discomfort, Headache, Nausea, Disorder, Vomiting, Lung edema, Aspiration may cause pulmonary edema and pneumonitis, Liver disorders, Kidney disorders.

SECTION 5. FIRE-FIGHTING MEASURES

Form: Liquid

Flash point: 38°C Minimum for #1 Diesel, 52°C Minimum for #2 Diesel

Auto Ignition temperature: 257 °C (495 °F)

Lower explosive limit: 0.6 % (V)

Upper explosive limit: 4.7 % (V)

Suitable extinguishing media: Carbon dioxide (CO2), Water spray, Dry chemical, Foam, Keep containers and surroundings cool with water spray.

Specific hazards during fire fighting: Fire Hazard Do not use a solid water stream as it may scatter and spread fire. Cool closed containers exposed to fire with water spray.

Special protective equipment: Wear self-contained breathing apparatus and protective suit. Use personal
for fire-fighters protective equipment.

Further information: Exposure to decomposition products may be a hazard to health. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to contain spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact. Ensure adequate ventilation. Use personal protective equipment.

Environmental precautions: Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection. Discharge into the environment must be avoided. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods for cleaning up: Take up with sand or oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal - caution, flammable vapors may accumulate in closed containers. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

CERCLA Hazardous substances and corresponding RQs:

- Xylene 1330-20-7 100 lbs
- Naphthalene 91-20-3 100 lbs
- Nonane 111-84-2 100 lbs

SECTION 7. HANDLING AND STORAGE

Handling: Use only in area provided with appropriate exhaust ventilation. Handle and open container with care. Use only intrinsically safe electrical equipment approved for use in classified areas. Do not smoke near areas where material is handled or stored. Remove all sources of ignition. Emergency eye wash capability should be available in the vicinity of any potential splash exposure.
**Advice on protection against fire and explosion**

Keep away from sources of ignition - No smoking. Ground and bond containers during product transfers to reduce the possibility of static-initiated fire or explosion. Special slow load procedures for “switch loading” must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products - see API Publication 2003, “Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents.”

**Dust explosion class**

Not applicable

**Advice on common storage**

Keep away from food, drink and animal feed. Incompatible with oxidizing agents. Incompatible with acids.

**Other data**

Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure.

### SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Exposure Guidelines

<table>
<thead>
<tr>
<th>List</th>
<th>Components</th>
<th>CAS-No.</th>
<th>Type:</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSHA Z1</td>
<td>Xylene</td>
<td>1330-20-7</td>
<td>PEL</td>
<td>100 ppm</td>
</tr>
<tr>
<td></td>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>PEL</td>
<td>10 ppm</td>
</tr>
<tr>
<td>ACGIH</td>
<td>Diesel Fuel</td>
<td>68476-30-2</td>
<td>TWA</td>
<td>100 mg/m3</td>
</tr>
<tr>
<td></td>
<td>Xylene</td>
<td>1330-20-7</td>
<td>TWA</td>
<td>100 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1330-20-7</td>
<td>STEL</td>
<td>150 ppm</td>
</tr>
<tr>
<td></td>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>TWA</td>
<td>10 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>91-20-3</td>
<td>STEL</td>
<td>15 ppm</td>
</tr>
<tr>
<td></td>
<td>Nonane</td>
<td>111-84-2</td>
<td>TWA</td>
<td>200 ppm</td>
</tr>
</tbody>
</table>

**Engineering measures**

Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use only intrinsically safe electrical equipment approved for use in classified areas.

**Eye protection**

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

**Hand protection**

Gloves constructed of nitrile, neoprene, or PVC are recommended. Consult manufacturer specifications for further information.

**Skin and body protection**

If needed to prevent skin contact, chemical protective clothing such as of DuPont TyChem®, Saranex or equivalent recommended based on degree of exposure. The resistance of specific material may vary from product to product as well as with degree of exposure.

**Respiratory protection**

A NIOSH/ MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection. Use a
NIOSH/MSHA-approved positive-pressure supplied-air respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Hygiene measures: Avoid repeated and/or prolonged skin exposure. Waterless hand cleaners are effective. Consider disposal of contaminated clothing rather than laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Emergency eye wash capability should be available in the vicinity of any potential splash exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Use good personal hygiene practices. DO NOT use gasoline, kerosene, solvents, or harsh abrasive skin cleaners to clean skin.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear, straw colored</td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic petroleum (kerosene) odor</td>
</tr>
<tr>
<td>Flash point - typical</td>
<td>38°C Minimum for #1 Diesel, 52°C Minimum for #2 Diesel</td>
</tr>
<tr>
<td>Auto Ignition temperature</td>
<td>257 °C (495 °F)</td>
</tr>
<tr>
<td>Thermal decomposition</td>
<td>No decomposition if stored and applied as directed.</td>
</tr>
<tr>
<td>Lower explosive limit</td>
<td>0.6 %(V)</td>
</tr>
<tr>
<td>Upper explosive limit</td>
<td>4.7 %(V)</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>148 - 372 °C (298 - 702 °F)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>&lt; 2 mm Hg at 20 °C</td>
</tr>
<tr>
<td>Density</td>
<td>0.86 g/cm³</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Negligible</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>1.7 - 40 mPa.s at 37.8 °C (100.0 °F)</td>
</tr>
<tr>
<td>Percent Volatiles</td>
<td>100 %</td>
</tr>
</tbody>
</table>

SECTION 10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions to avoid</td>
<td>Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Keep away from strong oxidizers. Viton ®; Fluorel ®</td>
</tr>
<tr>
<td>Materials to avoid</td>
<td>Strong oxidizing agents. Peroxides</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Carbon monoxide, carbon dioxide and noncombusted hydrocarbons (smoke). Diesel exhaust particulates may be a lung hazard - see Section 11.</td>
</tr>
<tr>
<td>Thermal decomposition</td>
<td>No decomposition if stored and applied as directed.</td>
</tr>
<tr>
<td>Hazardous reactions</td>
<td>Keep away from oxidizing agents, and acidic or alkaline products.</td>
</tr>
</tbody>
</table>
SECTION 11. TOXICOLOGICAL INFORMATION

Carcinogenicity

NTP : Naphthalene (CAS-No.: 91-20-3)
IARC : Naphthalene (CAS-No.: 91-20-3)
OSHA : No component of this product which is present at levels greater than or equal to 0.1 % is identified as a carcinogen or potential carcinogen by OSHA.

CA Prop 65 : WARNING! This product contains a chemical known to the State of California to cause cancer. Naphthalene (CAS-No.: 91-20-3)

Skin irritation : Irritating to skin.
Eye irritation : Irritating to eyes.

Further information : Studies have shown that similar products produce skin cancer or skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation. Positive mutagenicity results have been reported.
Repeated over-exposure may cause liver and kidney injury
IARC classifies whole diesel fuel exhaust particulates as probably carcinogenic to humans (Group 2A). NIOSH regards whole diesel fuel exhaust particulates as a potential cause of occupational lung cancer based on animal studies and limited evidence in humans.

Component:

Fuels, diesel, No 2; Gasoil - unspecified 68476-34-6
Acute oral toxicity: LD50 rat
Dose: 5,001 mg/kg

Acute dermal toxicity: LD50 rabbit
Dose: 2,001 mg/kg

Acute inhalation toxicity: LC50 rat
Dose: 7.64 mg/l
Exposure time: 4 h

Skin irritation: Classification: Irritating to skin.
Result: Severe skin irritation

Eye irritation: Classification: Irritating to eyes.
Result: Mild eye irritation

Nonane 111-84-2
Acute oral toxicity: LD50 mouse
Dose: 218 mg/kg

Acute inhalation toxicity: LC50 rat
Exposure time: 4 h

Naphthalene 91-20-3
Acute oral toxicity: LD50 rat
Dose: 2,001 mg/kg

Acute dermal toxicity: LD50 rat
Dose: 2,501 mg/kg

Acute inhalation toxicity: LC50 rat
Dose: 101 mg/l
Exposure time: 4 h

Skin irritation: Classification: Irritating to skin.
Result: Mild skin irritation

Eye irritation: Classification: Irritating to eyes.
Result: Mild eye irritation

Carcinogenicity: N11.00422130

1,2,4-Trimethylbenzene 95-63-6
Acute inhalation toxicity: LC50 rat
Dose: 18 mg/l
Exposure time: 4 h

Skin irritation: Classification: Irritating to skin.
Result: Skin irritation

Eye irritation: Classification: Irritating to eyes.
Result: Eye irritation

Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

Eye irritation: Classification: Irritating to eyes.
Result: Mild eye irritation

Xylene 1330-20-7
Acute oral toxicity: LD50 rat
Dose: 2,840 mg/kg

Acute dermal toxicity: LD50 rabbit
Dose: ca. 4,500 mg/kg

Acute inhalation toxicity: LC50 rat
Dose: 6,350 mg/l
Exposure time: 4 h

Skin irritation: Classification: Irritating to skin.
Result: Mild skin irritation

Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

Eye irritation: Classification: Irritating to eyes.
Result: Mild eye irritation

SECTION 12. ECOLOGICAL INFORMATION

Additional ecological information: Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under Federal and State regulations.

Component:

Naphthalene 91-20-3
Toxicity to algae:
EC50 Species:
Dose: 33 mg/l
Exposure time: 24 h

1,2,4-Trimethylbenzene 95-63-6
Toxicity to fish:
LC50 Species: Pimephales promelas (fathead minnow)
Dose: 7.72 mg/l
Exposure time: 96 h

Acute and prolonged toxicity for aquatic invertebrates:
EC50 Species: Daphnia
Dose: 3.6 mg/l
Exposure time: 48 h

SECTION 13. DISPOSAL CONSIDERATIONS
Disposal: In accordance with local and national regulations.

SECTION 14. TRANSPORT INFORMATION

CFR

Proper shipping name: DIESEL FUEL
UN-No.: UN1202 (NA 1993)
Class: 3
Packing group: III

TDG

Proper shipping name: DIESEL FUEL
UN-No.: UN1202 (NA 1993)
Class: 3
Packing group: III

IATA Cargo Transport

UN UN-No.: UN1202 (NA 1993)
Description of the goods: DIESEL FUEL
Class: 3
Packaging group: III
ICAO-Labels: 3
Packing instruction (cargo aircraft): 310
Packing instruction (cargo aircraft): Y309

IATA Passenger Transport

UN UN-No.: UN1202 (NA 1993)
Description of the goods: DIESEL FUEL
Class: 3
Packaging group: III
ICAO-Labels: 3
Packing instruction (passenger aircraft): 309
Packing instruction (passenger aircraft): Y309

IMDG-Code

UN-No.: UN 1202 (NA 1993)
Description of the goods: DIESEL FUEL
Class: 3
Packaging group: III
IMDG-Labels: 3
EmS Number: F-E S-E
Marine pollutant: No

SECTION 15. REGULATORY INFORMATION

OSHA Hazards: Combustible Liquid
Moderate skin irritant
Moderate eye irritant
Toxic by ingestion
POSSIBLE CANCER HAZARD

<table>
<thead>
<tr>
<th>TSCA Status</th>
<th>: On TSCA Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSL Status</td>
<td>: All components of this product are on the Canadian DSL list.</td>
</tr>
<tr>
<td>SARA 311/312 Hazards</td>
<td>: Fire Hazard</td>
</tr>
<tr>
<td></td>
<td>Acute Health Hazard</td>
</tr>
<tr>
<td></td>
<td>Chronic Health Hazard</td>
</tr>
</tbody>
</table>

**SARA III**
US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>95-63-6</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
</tr>
</tbody>
</table>

**PENN RTK**
US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonane</td>
<td>111-84-2</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>95-63-6</td>
</tr>
<tr>
<td>xylene</td>
<td>1330-20-7</td>
</tr>
</tbody>
</table>

**Fuels, diesel, No 2; Gasoil - unspecified**
68476-34-6

**MASS RTK**
US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>95-63-6</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
</tr>
<tr>
<td>Nonane</td>
<td>111-84-2</td>
</tr>
</tbody>
</table>

**NJ RTK**
US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonane</td>
<td>111-84-2</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>95-63-6</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
</tr>
</tbody>
</table>

**Fuels, diesel, No 2; Gasoil - unspecified**
68476-34-6
California Prop. 65 : WARNING! This product contains a chemical known to the State of California to cause cancer.

Naphthalene 91-20-3

SECTION 16. OTHER INFORMATION

Further information
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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D-57078 Siegen
Germany
Telephone: +49-(0)271-88072-0

Revision Date : 07/23/2008

65, 66, 105, 295, 1747