# SAFETY DATA SHEET

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

As of the revision date above, this (M)SDS meets the regulations in the United Kingdom & Ireland.

**PRODUCT**

**Product Name: KEROSENE**
**Product Description:** Petroleum Hydrocarbons
**Product Code:** 7033158-60
**Intended Use:** Fuel

**COMPANY IDENTIFICATION**

**Supplier:** **Esso Petroleum Company, Limited**
ExxonMobil House
Ermyn Way
KT22 8UX Leatherhead, Surrey
United Kingdom

**24 Hour Environmental / Health Emergency Telephone** 01372 222 000 (UK) / +44 1372 222 000 (Ireland)

## SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

This material is regulated as a complex substance.

**Reportable Hazardous Substance(s) or Complex Substance(s)**

| Name | CAS# | EINECS / ELINCS | Concentration* | Symbols/Risk Phrases |
|---|---|---|---|---|
| KEROSENE | 8008-20-6 | 232-366-4 | > 99% | R10, Xi;R38, Xn;R65, N;R51/53, Note H |

**Reportable Hazardous Constituent(s) Contained in Complex Substance(s)**

| Name | CAS# | EINECS / ELINCS | Concentration* | Symbols/Risk Phrases |
|---|---|---|---|---|
| ETHYL BENZENE | 100-41-4 | 202-849-4 | 0.1 - 1% | F;R11, Xn;R20 |
| Naphthalene | 91-20-3 | 202-049-5 | < 1% | Xn;R22, Xn;Carc. Cat. 3;R40, N;R50/53 |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## SECTION 3 HAZARDS IDENTIFICATION

This material is dangerous according to regulatory guidelines (see (M)SDS Section 15).

**CLASSIFICATION:** | R10 | Xn; R65 | Xi; R38 | N; R51/53 |

**PHYSICAL / CHEMICAL HAZARDS**

Flammable. Material can release vapours that readily form flammable mixtures. Vapour accumulation could flash and/or explode if ignited. Material can accumulate static charges which may cause an incendiary electrical discharge.

**HEALTH HAZARDS**

Harmful: may cause lung damage if swallowed. Irritating to skin. May be irritating to the eyes, nose, throat, and lungs. Breathing of high vapour concentrations may cause dizziness, light-headedness, headache, nausea and loss of co-ordination. Continued inhalation may result in unconsciousness. High-pressure injection under skin may cause serious damage.

**ENVIRONMENTAL HAZARDS**

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Note:** This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

## SECTION 4 FIRST AID MEASURES

**INHALATION**

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

**SKIN CONTACT**

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

**EYE CONTACT**

Flush thoroughly with water. If irritation occurs, get medical assistance.

**INGESTION**

Seek immediate medical attention. Do not induce vomiting.

**NOTE TO PHYSICIAN**

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

**PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE**

Hydrocarbon Solvents/Petroleum Hydrocarbons- Skin contact may aggravate an existing dermatitis.

## SECTION 5 FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA**

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight streams of water

**FIRE FIGHTING**

**Fire Fighting Instructions:** Evacuate area. Prevent run-off from fire control or dilution from entering streams,

sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

**Unusual Fire Hazards:** FLAMMABLE. Hazardous material. Firefighters should consider protective equipment indicated in Section 8. Vapour is flammable and heavier than air. Vapour may travel across the ground and reach remote ignition sources, causing a flashback fire danger.

**Hazardous Combustion Products:** Incomplete combustion products, Oxides of carbon, Smoke, Fume, Aldehydes, Sulphur Oxides

**FLAMMABILITY PROPERTIES**

**Flash Point [Method]:** >38C (100F) [ ASTM D-93]
**Flammable Limits (Approximate volume % in air):** LEL: 0.7 UEL: 5.0
**Autoignition Temperature:** 250°C (482°F)

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**NOTIFICATION PROCEDURES**

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

**PROTECTIVE MEASURES**

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required, due to toxicity or flammability of the material. See Section 5 for fire fighting information. See Section 3 for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for Personal Protective Equipment.

**SPILL MANAGEMENT**

**Land Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapour-suppressing foam may be used to reduce vapour. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapour, but may not prevent ignition in enclosed spaces.

**Water Spill:** Stop leak if you can do so without risk. Eliminate sources of ignition. If the Flash Point exceeds the Ambient Temperature by 10 deg C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Temperature by 10 deg C or is less than the Ambient Temperature, use booms as a barrier to protect shorelines and allow the material to evaporate. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

**ENVIRONMENTAL PRECAUTIONS**

Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

## SECTION 7 HANDLING AND STORAGE

### HANDLING

Avoid all personal contact. Do not siphon by mouth. Use proper bonding and/or earthing procedures. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices etc) in or around any fuelling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source).

**Static Accumulator:** This material is a static accumulator.

### STORAGE

Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be earthed and bonded. Drums must be earthed and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters.

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE LIMIT VALUES

**Exposure limits/standards (Note: Exposure limits are not additive)**

| Substance Name | Form | Limit/Standard | | | Note | Source | Year |
|---|---|---|---|---|---|---|---|
| ETHYL BENZENE | | STEL | 552 mg/m3 | 125 ppm | Skin | UK EH40 | 2005 |
| ETHYL BENZENE | | TWA | 441 mg/m3 | 100 ppm | Skin | UK EH40 | 2005 |
| ETHYL BENZENE | | STEL | 125 ppm | | | ACGIH | 2006 |
| ETHYL BENZENE | | TWA | 100 ppm | | | ACGIH | 2006 |
| KEROSENE | Stable Aerosol. | TWA | 5 mg/m3 | | | ExxonMobil | 2006 |
| KEROSENE | Total vapour and aerosol. | TWA | 500 mg/m3 | | | ExxonMobil | 2006 |
| KEROSENE | Vapour and aerosol. | TWA | 500 mg/m3 | 100 ppm | | ExxonMobil | 2006 |
| KEROSENE [total hydrocarbon vapour] | Non-Aerosol | TWA | 200 mg/m3 | | Skin | ACGIH | 2006 |
| Naphthalene | | STEL | 15 ppm | | Skin | ACGIH | 2006 |
| Naphthalene | | TWA | 10 ppm | | Skin | ACGIH | 2006 |

Information about recommended monitoring procedures can be obtained from the following agency(ies)/institute(s):
France L'Institut National de Recherche et de Sécurité (INRS) Germany Berufsgenossenschaftliches Institut für Arbeitssicherheit (BIA) UK Health and Safety Executive (HSE)

### ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

## PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Type A filter material

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove manufacturer data. Work conditions can greatly effect glove durability; inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves. Nitrile, Viton, CEN standards EN 420 and EN 374 provide general requirements and lists of glove types.

**Eye Protection:** If contact is likely, safety glasses with side shields are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical/oil resistant clothing is recommended.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

## ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.**

### GENERAL INFORMATION

**Physical State:** Liquid
**Colour:** Pale yellow
**Odour:** petroleum/solvent
**Odour Threshold:** N/D

### IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 15 C):** 0.775 - 0.83
**Flash Point [Method]:** >38C (100F) [ ASTM D-93]

**Flammable Limits (Approximate volume % in air):** LEL: 0.7 UEL: 5.0
**Autoignition Temperature:** 250°C (482°F)
**Boiling Point / Range:** > 200C (392F)
**Vapour Density (Air = 1):** N/D
**Vapour Pressure:** < 0.133 kPa (1 mm Hg) at 20°C
**Evaporation Rate (N-Butyl Acetate = 1):** N/D
**pH:** N/A
**Log Pow (n-Octanol/Water Partition Coefficient):** > 3.5
**Solubility in Water:** Negligible
**Viscosity:** 1.1 cSt (1.1 mm²/sec) at 40°C
**Oxidising properties:** See Sections 3, 15, 16.

**OTHER INFORMATION**

**Freezing Point:** -47°C (-53°F)
**Melting Point:** N/A

## SECTION 10 STABILITY AND REACTIVITY

**STABILITY:** Material is stable under normal conditions.

**CONDITIONS TO AVOID:** Avoid heat, sparks, open flames and other ignition sources.

**MATERIALS TO AVOID:** Halogens, Strong Acids, Alkalies, Strong oxidisers

**HAZARDOUS DECOMPOSITION PRODUCTS:** Material does not decompose at ambient temperatures.

**HAZARDOUS POLYMERIZATION:** Will not occur.

## SECTION 11 TOXICOLOGICAL INFORMATION

**Acute Toxicity**

| Route of Exposure | Conclusion / Remarks |
|---|---|
| **INHALATION** | |
| Toxicity: LC50 > 5000 mg/m3 | Minimally Toxic. Based on test data for structurally similar materials. |
| Irritation: No end point data. | Elevated temperatures or mechanical action may form vapours, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs. Based on assessment of the components. |
| | |
| **INGESTION** | |
| Toxicity: LD50 > 2000 mg/kg | Minimally Toxic. Based on test data for structurally similar materials. |
| | |
| **Skin** | |
| Toxicity: LD50 > 2000 mg/kg | Minimally Toxic. Based on test data for structurally similar materials. |
| Irritation: Data available. | Moderately irritating to skin with prolonged exposure. Based on test data for structurally similar materials. |
| | |
| **Eye** | |
| Irritation: Data available. | May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. |

**CHRONIC/OTHER EFFECTS**

**For the product itself:**

Vapour/aerosol concentrations above recommended exposure levels are irritating to the eyes and respiratory tract, may cause headaches, dizziness, anaesthesia, drowsiness, unconsciousness and other central nervous system effects including death. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

**Contains:**

Kerosene: Carcinogenic in animal tests. Lifetime skin painting tests produced tumours, but the mechanism is due to repeated cycles of skin damage and restorative hyperplasia. This mechanism is considered unlikely in humans where such prolonged skin irritation would not be tolerated. Did not cause mutations in-vitro. Inhalation of vapours did not result in reproductive or developmental effects in laboratory animals. Inhalation of high concentrations in animals resulted in respiratory tract irritation, lung changes and some reduction in lung function. Non-sensitizing in animal tests. NAPHTHALENE: Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain. Ethylbenzene: Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

Additional information is available by request.

## SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

**ECOTOXICITY**

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

**MOBILITY**

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

High molecular wt. component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

**PERSISTENCE AND DEGRADABILITY**

**Biodegradation:**

Majority of components -- Expected to be inherently biodegradable

**Atmospheric Oxidation:**

More volatile component -- Expected to degrade rapidly in air

**BIOACCUMULATION POTENTIAL**

Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

## SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable

laws and regulations, and material characteristics at time of disposal.

**DISPOSAL RECOMMENDATIONS**

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

**REGULATORY DISPOSAL INFORMATION**

**European Waste Code:** 13 07 03

NOTE: These codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code(s).

This material is considered as hazardous waste pursuant to Directive 91/689/EEC on hazardous waste, and subject to the provisions of that Directive unless Article 1(5) of that Directive applies.

**Empty Container Warning** (where applicable): Empty containers may retain residue and can be dangerous. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

## SECTION 14 TRANSPORT INFORMATION

**LAND (ADR/RID)**

**Proper Shipping Name:** KEROSENE
**Hazard Class:** 3
**Classification Code:** F1
**UN Number:** 1223
**Packing Group:** III
**Label(s) / Mark(s):** 3
**Hazard ID Number:** 30
**CEFIC Tremcard:** 30S1223
**Hazchem EAC:** 3Y
**Transport Document Name:** UN1223, KEROSENE, 3, PG III

**INLAND WATERWAYS (ADNR)**

**Proper Shipping Name:** KEROSENE
**Hazard Class:** 3
**Hazard ID Number:** 30
**UN or ID Number:** 1223
**Packing Group:** III
**Label(s) / Mark(s):** 3
**Transport Document Name:** UN1223, KEROSENE, 3, PG III

**SEA (IMDG)**

**Proper Shipping Name:** KEROSENE
**Hazard Class & Division:** 3
**UN Number:** 1223
**Packing Group:** III
**Label(s):** 3

**EMS Number:** F-E, S-E
**Transport Document Name:** UN1223, KEROSENE, 3, PG III, (38°C c.c.)

**AIR (IATA)**
**Proper Shipping Name:** KEROSENE
**Hazard Class & Division:** 3
**UN Number:** 1223
**Packing Group:** III
**Label(s):** 3
**Transport Document Name:** UN1223, KEROSENE, 3, PG III

## SECTION 15 REGULATORY INFORMATION

**Material is dangerous as defined by the EU Dangerous Substances/Preparations Directives.**

**CLASSIFICATION:** Flammable. Harmful. Irritant. Dangerous for the environment.

**EU LABELING:**
**Symbol:** Xn, N


Harmful.


Dangerous for the environment.

**Nature of Special Risk:** R10; Flammable. R65; Harmful: may cause lung damage if swallowed. R38; Irritating to skin. R51/53; Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety Advice:** S23; Do not breathe vapour. S24; Avoid contact with skin. S36/37; Wear suitable protective clothing and gloves. S43; In case of fire use carbon dioxide (CO2), foam, dry chemical, or water fog. S61; Avoid release to the environment. Refer to special instructions/safety data sheets. S62; If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

**Contains:** KEROSENE

**REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS**

**Complies with the following national/regional chemical inventory requirements:** AICS, DSL, EINECS, ENCS, KECI, PICCS, TSCA

## SECTION 16 OTHER INFORMATION

**N/D = Not determined, N/A = Not applicable**
**KEY TO THE RISK CODES CONTAINED IN SECTION 2 AND 3 OF THIS DOCUMENT (for information only):**
R10; Flammable.
R11; Highly flammable.
R20; Harmful by inhalation.

R22; Harmful if swallowed.
R38; Irritating to skin.
R40; Limited evidence of a carcinogenic effect.
R50/53; Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53; Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65; Harmful: may cause lung damage if swallowed.

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**
No revision information is available.

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Internal Use Only
MHC: 1A, 0, 0, 0, 3, 1 PPEC: C

DGN: 2028424XGB (1013454)

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