

# FUEL OILS

## SPECIFICATION DATA SHEET

### Unleaded Petrol 95 Octane BS EN 228

#### Sulphur-free petrol – 10 ppm maximum sulphur (PU10)

Unleaded Petrol is suitable for use in all petrol (spark ignition) engine vehicles where the vehicle manufacturer recommends the use of an unleaded petrol with a Research Octane Number of 95 (RON 95).

Unleaded Petrol is not suitable for use in all vehicles and in cases of doubt the vehicle manufacturers should always be consulted prior to use.

Ultra Low Sulphur Petrol exceeds the latest requirements of the relevant British and European Standard specifications BS EN 228 and contains a detergent additive to help keep carburetors, fuel injectors and inlet valves clean, maintaining drivability and performance.

|  | MINIMUM        | MAXIMUM | TYPICAL        |
|--|----------------|---------|----------------|
| Appearance                             | Clear & Bright |         | Clear & Bright |
| Water and Suspended Matter             | None Visible   |         | None Visible   |
| Density @ 15 °C, kg/m                  | 720            | 775     | 724            |
| Copper Corrosion, 3 hours @ 50°C       | -              | 1       | 1              |
| Sulphur content, mg/kg                 | -              | 10.0    | 10.0           |
| Existent Gum (solvent washed) mg/100ml | -              | 5       | 1              |
| Oxidation stability, minutes           | 360            | -       | >360           |
| Lead Content, g/l                      | -              | 0.005   | <0.001         |
| Benzene Content % volume               | -              | 1.0     | 0.6            |
| Research Octane Number (RON)           | 95.0           | -       | 95.30          |
| Motor Octane Number                    | 85             | -       | 85.20          |
| <b>Distillation Characteristics</b>    |                |         |                |
|  | MINIMUM        | MAXIMUM | TYPICAL        |
| % Volume Evaporated @ 70°C             | 20             | 48      | 32             |
| % Volume Evaporated @ 100°C            | 46             | 71      | 56             |
| % Volume Evaporated @ 180°C            | 75             |         | 91             |
| Final Boiling Point °C                 | -              | 210     | 185            |
| Residue % Volume                       | -              | 2       | 1              |
| <b>Vapour Pressure, kPa</b>            |                |         |                |
| Ethanol (%V/V)                         |                | 5.0     |                |
| Summer                                 | 45             | 70      |                |
| Winter                                 | 70             | 100     | 73             |

# FUEL OILS

## SPECIFICATION DATA SHEET

### U.S. Petrol Safety Information

#### 1. CHEMICAL PRODUCT and COMPANY INFORMATION (rev. Jan-2003)

Fuel Oils  
Burnett Rd  
Darent Industrial Park  
Slade Green  
Erith, Kent. DA8 2LG

#### 2. COMPOSITION and INFORMATION ON INGREDIENTS

Complex mixture of hydrocarbons in the C<sub>4</sub>-C<sub>11</sub> range. CAS No 86290-81-5. EINECS No 289-220-8. The main components are paraffinic, naphthenic and aromatic hydrocarbons but catalytically and thermal cracked constituents from refinery processes may be present. May also contain up to 5% bio-ethanol.

Additives : Multifunctional gasoline additives xi, R36/37/38,43 <1%

Organic Potassium Salt (LRP only) xi, R36/38 <400ppm

Oxygenates up to the maximum permitted by BSEN228

Symbol/R & S Phrases Concentration :

Benzene T, R45 < 1%

n-Hexane Xn, R11, 48/20 < 2%

Methyl-tert-butyl ether (MTBE) - < 10%

Bio-ethanol F, R11 ≤ 5%

#### 3. HAZARDS IDENTIFICATION

##### EMERGENCY OVERVIEW

Extremely flammable. Explosive mixtures may form at ambient temperatures. May cause irritation in contact with eyes and skin. Harmful if swallowed. Aspiration into the lungs caused by vomiting is harmful and can be fatal. Contains benzene: prolonged or repeated exposure to benzene may cause anaemia and other blood diseases including leukemia. Classified as a category 2 carcinogen. Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

##### EYES

Likely to cause minor irritation if splashed into the eye with short-term redness and stinging

Immediately wash with fresh water for at least 15 minutes. Obtain medical advice if pain or redness develops.

##### SKIN

May cause irritation on brief or occasional contact; prolonged, repeated and heavy direct contact with the skin over a long period of time can cause defatting of the skin, erythema, dermatitis, oil acne.

Remove contaminated clothing as soon as possible. Wash exposed skin thoroughly with soap and water. If irritation persists, seek medical attention.

##### INGESTION

Likely to cause nausea and diarrhoea if small amounts are swallowed; larger amounts may effect the central nervous system. Signs and symptoms of nervous system effects may include one or more of the following; headaches, dizziness, loss of appetite, weakness and loss of concentration. The product can be harmful due to aspiration of liquid into the lungs following ingestion which may cause chemical pneumonitis and can be fatal.

If this material is swallowed, DO NOT INDUCE VOMITING. If unconscious, place in recovery position and protect airway. Seek immediate medical attention.

# FUEL OILS

## SPECIFICATION DATA SHEET

### INHALATION

No hazards associated in normal operations. Inhalation of vapours or fumes may cause headaches, nausea, drowsiness and irritation to the breathing passages and lungs with possible effects to the central nervous system. As gasoline contains benzene which is a known carcinogen continuous exposure to high levels of vapours may be toxic and in extreme cases may lead to leukemia. If over exposure occurs, remove to fresh air. Administer artificial respiration if breathing stops. Seek immediate medical attention.

### WARNING:

The burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

### CHRONIC EFFECTS and CARCINOGENICITY

Similar products have produced skin cancer and systemic toxicity in laboratory animals following repeated applications. The significance of these results to human exposures has not been determined – see Section 11 Toxicological Information.

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Irritation from skin exposure may aggravate existing open wounds, skin disorders, and dermatitis (rash).

## 4. FIRST AID MEASURES

### EYES

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

### SKIN

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or with waterless hand cleanser. Obtain medical attention if irritation or redness develops.

### INGESTION

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

### INHALATION

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

## 5. FIRE FIGHTING MEASURES

### FLAMMABLE PROPERTIES:

FLASH POINT: 100 °F (38 °C) minimum PMCC

AUTOIGNITION POINT: 494 °F (257 °C)

LOWER EXPLOSIVE LIMIT (%): 0.6

UPPER EXPLOSIVE LIMIT (%): 7.5

### FIRE AND EXPLOSION HAZARDS

OSHA and NFPA Class 2 COMBUSTIBLE LIQUID

Vapours may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapours may travel long

# FUEL OILS

## SPECIFICATION DATA SHEET

distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

### EXTINGUISHING MEDIA

#### SMALL FIRES:

Any extinguisher suitable for Class B fires, dry chemical, CO<sub>2</sub>, water spray, fire fighting foam, or Halon.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

### FIRE FIGHTING INSTRUCTIONS

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full face piece and full protective clothing.

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.

### 6. ACCIDENTAL RELEASE MEASURES

#### ACTIVATE FACILITY'S SPILL CONTINGENCY OR EMERGENCY RESPONSE PLAN.

Evacuate non essential 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 confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

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 vapours. 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.

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

### 7. HANDLING and STORAGE HANDLING PRECAUTIONS

Handle as a combustible liquid. Keep away from heat, sparks, excessive temperatures and open flame!

No smoking or open flame in storage, use or handling areas. Bond and ground containers during product transfer 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 this product is loaded into tanks previously containing low flash point products

### STORAGE PRECAUTIONS

Keep containers closed and clearly labeled. Use approved vented storage containers. Empty product containers or vessels may contain explosive vapours. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area.

Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow recommended practice "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and "Cleaning Petroleum Storage Tanks."



# FUEL OILS

## SPECIFICATION DATA SHEET

### WORK/HYGIENIC PRACTICES

Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent or harsh abrasive skin cleaners for washing this product from exposed skin areas.

Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse.

Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

### 8. EXPOSURE CONTROLS and PERSONAL PROTECTION

#### ENGINEERING CONTROLS

Use adequate ventilation to keep vapour concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

#### EYE/FACE PROTECTION

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

#### SKIN PROTECTION

Gloves constructed of nitrile, neoprene, or PVC are recommended. Chemical protective clothing based on degree of exposure.

Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

#### RESPIRATORY PROTECTION

An 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 odour or irritation. Protection provided by air-purifying respirators is limited.

Seek additional guidance from manufacturers on respiratory protection selection.

Use a positive pressure, air-supplied 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.

### 9. PHYSICAL and CHEMICAL PROPERTIES

#### APPEARANCE

Clear liquid. Pale yellow.

#### ODOUR

Mild, petroleum distillate odour

#### PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE Clear liquid. Pale yellow.

ODOUR Characteristic odour.

BOILING POINT (or RANGE) 25 - 220°C

FLASH POINT < -40°C

AUTO-IGNITION TEMP 450°C APPROX

EXPLOSIVE LIMITS

UPPER LIMIT 8%

LOWER LIMIT 1%

VAPOUR PRESSURE 0.5 – 1 bars

VAPOUR DENSITY 3 – 4 (air = 1)

DENSITY @ 15°C 720 – 775 kg/m<sup>3</sup>

SOLUBILITY Negligible, < 0.1%

# FUEL OILS

## SPECIFICATION DATA SHEET

### 10. STABILITY and REACTIVITY

#### STABILITY

Stable at ambient temperatures. Burning can be easily started

#### CONDITIONS TO AVOID and INCOMPATIBLE MATERIALS

Avoid exposure to heat and flame. Avoid strong oxidising materials.

#### HAZARDOUS DECOMPOSITION PRODUCTS

Incomplete combustion will generate carbon monoxide, carbon dioxide and other hazardous gases. Thermal decomposition products will vary with conditions.

### 11. TOXICOLOGICAL PROPERTIES

#### ACUTE EFFECTS

**EYES** Exposure to mist or direct splashing may cause irritation.

**SKIN** Will remove natural fats from the skin. Prolonged or repeated exposure may cause irritation or possibly dermatitis.

**INGESTION** Unlikely to occur in normal use. Spontaneous vomiting is common with consequent risk of aspiration resulting in a potentially fatal chemical pneumonitis.

**INHALATION** Exposure to high levels of vapour result in central nervous system and respiratory depression with subsequent loss of consciousness. Where ventilation is poor or temperatures high vapour production may be a hazard. Inhalation of oil mists may cause irritation to the upper respiratory tract.

**CHRONIC EFFECTS** This product contains Benzene (< 1%) which is classified as a carcinogen.

Exposure to benzene may result in blood disorders such as anaemia and leukemia.

This product is similar to Diesel Fuel. IARC classifies whole diesel fuel exhaust particulates as probably carcinogenic to humans (Group 2A) and NIOSH regards it as a potential cause of occupational lung cancer based on animal studies and limited evidence in humans.

#### MUTAGENICITY (genetic effects)

Material of similar composition has been positive in a mutagenicity study.

### 12. ECOLOGICAL INFORMATION

**MOBILITY** Spillages may penetrate the soil causing ground water contamination.

**PERSISTENCE & DEGRADABILITY** Ground spillage in large quantities may be of concern as the high mobility of the product could cause it to enter soil sub-strata, long term ground and ground water contamination may result. This product is inherently biodegradable.

**BIO-ACCUMULATION** Not determined.

**AQUATIC TOXICITY** Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Any films formed on water may effect oxygen transfer and damage organisms.

**OTHER** The vapours emitted are V.O.C's and may contribute to the formation of low level ozone.

### 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with local authority/national regulations relating to hazardous waste. Materials contaminated with product should be treated as highly flammable.

### 14. TRANSPORTATION INFORMATION

#### PACKAGING (Size & Description)

**TRANSPORT CLASSIFICATION** FLAMMABLE LIQUID

# FUEL OILS

## SPECIFICATION DATA SHEET

**UN NUMBER** 1203

**PROPER SHIPPING NAME** Petrol or Motor Spirit or Gasoline.

ICAO/IATA/IMDG CLASS 3

**SUBSIDIARY RISK**

PACKING GROUP II

ADR CLASS 3

**TRANSPORT HAZARD SYMBOL** Black flame on red.

**HAZARD IDENT. NUMBER** 33

**EMERGENCY ACTION CODE** 3YE

### 15. REGULATORY INFORMATION (Supply & Labelling)

**SUPPLY CLASSIFICATION** Extremely Flammable. Cat 2 Carcinogen.Harmful. Irritant.

Dangerous for the environment.

**LABELLING SYMBOLS** Black flame on orange square  
Black skull and crossbones on orange square.

Dead tree & fish.

**RISK PHRASES R12** Extremely flammable.

R38 Irritating to skin.

R45 May cause cancer.

R51/R53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R65 Harmful: May cause lung damage if swallowed.

R67 Vapours may cause drowsiness and dizziness.

**SAFETY PHRASES** S23 Do not breathe vapour. S24 Avoid contact with skin. S16 Keep away from sources of ignition. S33 Take precautionary measures against static discharge. S2 Keep out of the reach of children. S29 Do not empty into drains. S43 In case of fire, use foam/dry powder/ CO2. Never use water jets. 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.

### 16. OTHER INFORMATION

Fuel for spark ignition engines primarily, for automotive and commercial use but used in industrial and marine applications.

DO NOT siphon by mouth. DO NOT use as fuel for aircraft.

The information given in this data sheet is presented as guidance only for the purpose of determining health, safety and environmental measures. No warranty or representation express or implied is made as to the accuracy of completeness of the data and information contained in this data sheet. It is the users responsibility to evaluate this product and its intended use and to ensure compliance with applicable laws and regulations.

### CLEAN WATER ACT (OIL SPILLS)

Any spill or release of this product to "navigable waters" (essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported to the proper authorities immediately.