MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY

PRODUCT NAME

GAS OIL

NAME AND ADDRESS OF MANUFACTURER/SUPPLIER

ConocoPhillips Ltd, Humber Refinery, South Killingholme, North Lincolnshire DN40 3DW
Telephone No. 01469 571571
Facsimile No. 01469 555143

EMERGENCY CONTACT

ConocoPhillips Ltd. Humber Refinery, South Killingholme, Immingham, North Lincolnshire DN40 3DW.
Health and Safety Emergency Telephone No. 01469 555348 (24 hours)

APPLICATION

Heating and fuel oil for industrial applications.

2. COMPOSITION / INFORMATION ON INGREDIENTS

Petroleum Hydrocarbons >99%
Saturated olefinic and aromatic - C_{10} to C_{26} - may contain Polycyclic Aromatic Hydrocarbons - PAHs.
CAS No. 068334-30-5 EINECS No. 269-822-7 R40

Additives
1. Middle distillate flow improvers (various) up to 500ppm. (Dispersion of Ethylene vinyl acetate in an organic solvent).
2. Cetane improvers (Alkyl Nitrates) - up to 500ppm. CAS No. 27247-96-7. EINECS No. 248-363-6
3. Dye and Chemical Marker - Gas Oil Marker Concentrate. CAS No. 68334-30-5.

3. HAZARDS IDENTIFICATION

Health Hazards:
This product contains amounts of Polycyclic Aromatic Hydrocarbons (PAH's) some of which are known from experimental animal studies to be skin carcinogens. Prolonged and repeated exposure may therefore cause dermatitis and there is a risk of skin cancer. The risk of skin cancer will be very low, providing the handling precautions are such that prolonged and repeated skin contact is avoided and good personal hygiene is observed. Aspiration of liquid into the lungs directly or as a result of vomiting following ingestion of the liquid can cause severe lung damage and death.

Safety Hazards:
Product is combustible. Keep away from flames, sparks and other sources of ignition. Electrostatic charges may be generated during liquid transfer.

Environmental Hazard:
Dangerous for the environment. Studies on gas oils indicate toxicity to invertebrates (LL50 typically 1 – 10 mg/l), and slight toxicity to fish (LL50 10 - >100 mg/l).

4. FIRST AID MEASURES

Eyes : Rinse immediately with plenty of water until irritation subsides. If irritation persists, obtain medical attention.

Skin : Immediate flush with large amounts of water, using soap if available. Remove contaminated clothing, including shoes, after flushing has begun. If irritation persists, get medical attention.

Inhalation : In emergency situations use suitable respiratory protection to immediately remove the affected victim from exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Call for prompt medical attention.

Ingestion : DO NOT INDUCE VOMITING, since it is important that no amount of the material should enter the lungs (aspiration). Keep at rest. Get prompt medical attention.

Pressure Injection : ALWAYS OBTAIN IMMEDIATE MEDICAL ATTENTION EVEN THOUGH THE INJURY MAY APPEAR MINOR.

5. FIRE-FIGHTING MEASURES

Extinguishing Media : Foam, dry chemical powder, carbon dioxide.

Fire and Explosion Hazards : Flammable liquid, moderate hazard. Liquid can release vapours that readily form flammable mixtures at or above the flash point.
Static discharge; material can accumulate static charges which may cause an incendiary electrical discharge.

Special Fire-Fighting Procedures : Water fog or spray to cool fire exposed surfaces (e.g. containers) and to protect personnel, should only be used by personnel trained in fire-fighting. Cut off "fuel"; depending on circumstances, either allow the fire to burn out under controlled conditions or use foam or dry chemical powder to extinguish the fire. Respiratory and eye protection required for fire-fighting personnel exposed to fumes or smoke.

Hazardous Combustion Products : Smoke, sulphur oxides and carbon monoxide in the event of incomplete combustion.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions : See Section 8.

Environmental Precautions :

Land Spill : Eliminate sources of ignition. Shut off source taking normal safety precautions. Prevent liquid from entering sewers, watercourses or low lying areas; advise the relevant authorities if it has, or if it contaminates soil/vegetation. Take measures to minimise the effects of groundwater.

Water Spill : Eliminate the spill immediately with booms. Warn shipping. Notify port and other relevant authorities.

Decontamination Procedures :

Recover by skimming or pumping using explosion-proof equipment, or contain spilled liquid with booms, sand or other suitable absorbent and remove mechanically into containers. If necessary, dispose of absorbed residues as directed in Section 13.

7. HANDLING AND STORAGE

Store product in cool, well ventilated surroundings, well away from sources of ignition. Provide suitable mechanical equipment for the safe handling of drums and heavy packages.
Electrical equipment and fittings must comply with local regulations regarding fire prevention with this class of product.

Load/unload temperature : Ambient to 40°C **Storage temperature** : Ambient to 40°C

Special Precautions
Use the correct grounding procedure. Store and handle in closed or properly vented containers. Ensure compliance with statutory requirements for storage and handling. Check for and prevent potential leaks from containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Standard :

Substance	8-hour TWA	STEL	Source / Other Information
Oil Mist, Mineral	5 mgm^{-3}	10 mgm^{-3}	HSE Guidance: *not* listed in EH 40

Personal Protection : In open systems where contact is likely, wear safety goggles (standard EN 166), chemical-resistant overalls, and chemically impervious gloves (EN 374). Where only incidental contact is likely, wear safety glasses with side shields. No other special precautions are necessary provided skin/eye contact is avoided. Where concentrations in air may exceed OES approved respirators may be required (EN 405).

Monitoring Methods: Health & Safety Executive (HSE), Methods for the determination of Hazardous Substances (MDHS); MDHS 84.
http://www.hsl.gov.uk/search.htm

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance :	Clear red coloured liquid	**Odour** :	Pungent petroleum
Density at 15°C :	0.82 g/ml	**pH** :	Not applicable
Vapour Pressure at 20°C :	< 0.3 Kpa	**Vapour Density (air=1)** :	< 1
Boiling point, ^{o}C :	180 - 390	**Pour Point ^{o}C** :	-24°C
Flash Point (Closed Cup), ^{o}C :	> 55	**Auto-ignition Temperature, ^{o}C** :	250

Flammability Limit, in Air, % by Volume : **LEL** : 0.5 **UEL** : 5.0

Kinematic Viscosity at 20°C, mm^{2}s^{-1} : 4.8 **Kinematic Viscosity at 40°C, mm^{2}s^{-1}** : 3.0

Solubility : Negligible

PLEASE NOTE THAT THESE PROPERTIES DO NOT CONSTITUTE A SPECIFICATION.

10. STABILITY AND REACTIVITY

Stability :	The product is stable and not subject to polymerisation.
Conditions to avoid :	Avoid exposure to extreme heat.
Materials to avoid :	Avoid contact with strong oxidising agents such as liquid chlorine.
Hazardous Decomposition Products :	Product does not decompose at ambient temperature.

11. TOXICOLOGICAL INFORMATION

The following toxicological assessment is based on a knowledge of the toxicity of the product's component's

HEALTH EFFECTS

On eyes : Slightly irritating but does not damage eye tissue.

On skin : Low order of acute toxicity. Irritating. Prolonged or repeated contact may also lead to more serious skin disorders, including skin cancer. Certain components present in this material may be absorbed through the skin, possibly in toxic quantities.

By inhalation : In high concentrations and/or at elevated temperatures, vapour or mist is irritating to mucous membranes, may cause headaches and dizziness, may be anaesthetic and may cause other central nervous system effects. Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes, nose, throat and lungs. Avoid breathing vapours, mists or fumes.

By ingestion : Low order of acute/systematic toxicity. Minute amounts of aspirated Gas Oil into the lungs during ingestion or vomiting may cause severe pulmonary injury and death.

Chronic : Contains Polycyclic Aromatic Hydrocarbons (PAH's). Prolonged and/or repeated skin contact with certain PAH's has been shown to cause skin cancer. Prolonged and/or repeated exposures by inhalation of certain PAH's may also cause cancer of the lung and of other sites of the body.

Acute : Based upon animal test data from similar materials and products, the acute toxicity of this product is expected to be :

ORAL	LD50	> 5000 mg/kg (slightly toxic)
DERMAL	LD50	> 2000 mg/kg (moderately toxic)

12. ECOLOGICAL INFORMATION

This assessment is based on information developed with various other crude oils and in experimental studies on gas oils. Product will form films of hydrocarbons on release to water, which float and spread on the surface. On release to soil adsorption is the predominant process.

Ecotoxicity: Dangerous for the environment. Toxic to most invertebrates and slightly toxic to fish.

Mobility: Some mobility in soils.

Persistence and Degradability: Inherently biodegradable with hydrocarbon components degraded by micro-organisms. Lighter components volatilise, and in air undergo photolysis to give half lives of less than a day. Photoxidation of liquid hydrocarbons on water surfaces also contributes to the loss process. Adsorbed hydrocarbons from gas oils will slowly degrade, both in water and soil.

Bioaccumulation Potential: Gas oils have the potential to bioaccumulate, but metabolic processes may reduce this tendency.

13. DISPOSAL CONSIDERATIONS

The product contains hazardous ingredients listed in Section 2. Collects and dispose of it at an authorised disposal facility, in conformance with national and local regulations and in accordance with EEC Directives on hazardous waste.

---

14. TRANSPORT INFORMATION

Classification for Transport :	Rails cars, tank trucks, tankers, barges, drum.		
Shipping Name :	Gas Oil or Heating Oil, Light		
UN Number :	1202	**Packaging Group** :	III
UN Class :	Class 3	**Marine Pollutant** :	See Section 6
ADR/RID :	Class 3	**ICAO/IATA** :	Class 3.3

Emergency Action Code: 3Y

15. REGULATORY INFORMATION

Hazard Label Data : GAS OIL
Xn, Harmful. N, Dangerous for the environment

R & S Phrases :

R40	Limited evidence of carcinogenic effect
R51/53	Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment
S2	Keep out of reach of children
S36/37	Wear suitable protective clothing and gloves
S61	Avoid releases into the environment, see Section 6
S62	If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label .

EC Directives : EC Directive 91 / 155 / EEC

Waste Oil Directive 87 / 101/ EEC

Statutory Information : The Health and Safety at Work Act 1974

Consumer Protection Act 1987

Environmental Protection Act 1990

Control of Substances Hazardous to Health Regulations 2002 (as amended)

Chemicals (Hazard Information and Packaging for Supply) Regulations 2002

Dangerous Substances and Explosive Atmospheres Regulations 2002

European Waste Catalogue No : 13 02 02

16. OTHER INFORMATION

The data and advice given apply when the product is sold for the stated application or applications. The product is not sold as suitable for any other application. Use of the product for applications other than as stated in this sheet may give rise to risks not mentioned in this Sheet. You should not use the product other than for the stated application or applications.

If you have purchased the product for supply to a third party for use at work, it is your duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet.

If you are an employer, it is your duty to tell your employees and others or may be affected of any hazards described in this sheet and of any precautions that should be taken.

This data sheet has been revised in sections 1, 8 & 15