

# Appendix 16

## Material Safety Data Sheets

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SDS No. DMC04009

Industrial Gas Oil

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

**Product name:** Industrial Gas Oil

**Product code:** MGO

**Product type:** Fuel for use in off-road diesel engines, boilers, gas turbines and other combustion equipment.

**Supplier:** Irish Shell Limited

**Address:** Shell House, Beech Hill  
Clonskeagh, Dublin 4

**Contact numbers:**

**Telephone:** +353 1 202 8888

**Telex:** 93634

**Fax:** + 353 1 283 8320

**Emergency telephone number:**

**Emergency Cover** +353 1 808 8232

2. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms:** Diesel, IGO, Gas Oil, Heating Oil.

**Preparation description:** Complex mixture of hydrocarbons consisting of paraffins, cycloparaffins, aromatic and olefinic hydrocarbons with carbon numbers predominantly in the C10 to C22 range. May contain catalytically cracked oils in which polycyclic aromatic compounds, mainly 3-ring but some 4- to 6-ring species, are present. It may also contain one or more of the following additives: anti-oxidants, corrosion inhibitors, flow improvers, biocides, dyes, markers, deodorants, reodorants, static dissipators, anti-foams, de-hazers, metal de-activators, icing inhibitors proprietary performance improving additives.

**Dangerous components/constituents:**

Component name	CAS number	Content range	EC hazard	R phrases
Fuel oil No.2 or Fuel oil No 4	68476-30-2 or 68476-31-3	>99 %(m/m)	Carc Cat 3	R40-65-66

Note: EU Dangerous Substances Directive, 67/548/EEC, Annex I number for the above substance is 649-224-00-6.

Contains the following substances for which exposure limits apply: No ACGIH limits established.

### 3. HAZARDS IDENTIFICATION

**Human health hazards:**

Possible risks of irreversible effects. Product classified as a Category 3 carcinogen. Harmful: may cause lung damage if swallowed. Aspiration into the lungs may cause chemical pneumonitis which can be fatal. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis. Under conditions of poor personal hygiene, excessive exposure may lead to irritation, oil acne and folliculitis and development of warty growths which may subsequently become malignant. Prolonged exposure to vapour concentrations may affect the central nervous system.

**Safety hazards:**

Not classified as flammable, but will burn.

**Environmental hazards:**

Harmful to aquatic organisms. May cause long term adverse effects in the environment. Large volumes may penetrate soil and could contaminate groundwater. Not readily biodegradable. Has the potential to bioaccumulate. Persists under anaerobic conditions.

### 4. FIRST AID MEASURES

**Symptoms and effects:**

Splashes into the eye may cause irritation. If ingested can lead to irritation of the mouth, irritation of the throat, irritation of the digestive tract, vomiting. Aspiration into the lungs may occur directly or following ingestion. This can cause chemical pneumonitis which may be fatal. Prolonged exposure to vapour/mist concentrations above the recommended occupational exposure standard may cause: headache, dizziness, nausea, irritation of the eyes, upper respiratory tract, mouth, and digestive tract, cardiac irregularities, asphyxiation, unconsciousness and even death.

**First Aid - Inhalation:**

Remove to fresh air. If breathing but unconscious, place in the recovery position. If breathing has stopped, apply artificial respiration. If heartbeat absent give external cardiac compression. Monitor breathing and pulse. **OBTAIN MEDICAL ATTENTION IMMEDIATELY.**

**First Aid - Skin:**

Wash skin with water using soap if available. Contaminated clothing must be removed as soon as possible. It must be laundered before reuse.

**First Aid - Eye:**

Flush eye with water. If persistent irritation occurs, obtain medical attention.

**First Aid - Ingestion:**

**DO NOT DELAY.** Do not induce vomiting. Protect the airway if vomiting begins. Give nothing by mouth. If breathing but unconscious, place in the recovery position. If breathing has stopped, apply artificial respiration. **OBTAIN MEDICAL ATTENTION IMMEDIATELY.**

**Advice to physicians:**

Treat symptomatically. Diagnosis of ingestion of this product is by the characteristic odour on the victim's breath and from the history of events. In cases of ingestion, consider gastric lavage. Gastric lavage must only be undertaken after cuffed endotracheal intubation in view of the risk of aspiration. In cases of chemical pneumonitis, antibiotic and corticosteroid therapy should be considered. Administration of medicinal liquid paraffin or carbon for medicinal use (carbo medicinalis) may reduce absorption from the digestive tract.

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## 5. FIRE FIGHTING MEASURES

<b>Specific hazards:</b>	Hazardous combustion products may include: carbon monoxide, oxides of nitrogen, oxides of sulphur, unburnt hydrocarbons.
<b>Extinguishing media:</b>	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
<b>Unsuitable extinguishing media:</b>	Water in a jet. Use of Halon extinguishers should be avoided for environmental reasons.
<b>Other information:</b>	Keep adjacent drums and tanks cool by spraying with water.

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## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions:</b>	Remove all possible sources of ignition in the surrounding area and evacuate all personnel. Do not breathe: vapour, mists. Avoid contact with: skin, eyes and clothing. Take off immediately all contaminated clothing.
<b>Personal protection:</b>	Wear: impervious overalls, PVC or nitrile rubber gloves, safety shoes or boots - chemical resistant, monogoggles.
<b>Environmental precautions:</b>	Prevent from entering into drains, ditches or rivers. Use appropriate containment to avoid environmental contamination.
<b>Clean-up methods - small spillage:</b>	Absorb or contain liquid with sand, earth or spill control material. Shovel up and place in a labelled sealable container for subsequent safe disposal. Do not disperse using water.
<b>Clean-up methods - large spillage:</b>	Transfer to a labelled, sealable container for product recovery or safe disposal. Otherwise treat as for small spillage.
<b>Other information:</b>	Local authorities should be advised if significant spillages cannot be contained. Observe all relevant local regulations. See Section 13 for information on disposal.

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## 7. HANDLING AND STORAGE

<b>Handling:</b>	When using do not eat, drink or smoke. Only use in well-ventilated areas. Take precautionary measures against static discharges. Earth or bond all equipment.
<b>Handling temperature:</b>	Ambient.
<b>Storage:</b>	Locate tanks away from heat and other sources of ignition. Do not store in unsuitable, unlabelled or incorrectly labelled containers. Keep container tightly closed in a dry, well-ventilated place away from direct sunlight and other sources of heat or ignition. Drums should be correctly stacked to a maximum of 3 high. Prevent ingress of water. Keep in a bunded area. Keep out of reach of children.
<b>Storage temperature:</b>	Ambient.
<b>Product transfer:</b>	Electrostatic charges may be generated during pumping. Ensure electrical continuity by bonding all equipment. Avoid splash filling. Particular care must be taken when 'switch loading' road/rail tankers which have previously contained gasoline. Wait 10 minutes after tank filling before opening hatches or manholes.



**Tank cleaning:**

Cleaning, inspection and maintenance of storage tanks is a specialist operation which requires the implementation of strict procedures and precautions. These include issuing of work permits, gas-freeing of tanks, using a manned harness and lifelines and wearing air-supplied breathing apparatus. Prior to entry and whilst cleaning is underway, the atmosphere within the tank must be monitored using an oxygen meter and/or explosimeter. Additional precautions are required where the tank may in the past have contained leaded gasoline. Consult the Associated Octel Company publication 'Leaded Gasoline Tanks - Cleaning and Disposal of Sludge'.

**Recommended materials:**

For containers, use: mild steel, stainless steel. Aluminium may also be used for applications where it does not present an unnecessary fire hazard. For container linings, use: amine-adduct cured epoxy paint. For seals and gaskets, use: compressed asbestos fibre, PTFE, Viton A, Viton B.

**Unsuitable materials:**

Examples of materials to avoid in the construction of facilities for the storage, handling and distribution of this product are: copper, copper alloys (ferrous and non-ferrous), zinc, zinc alloys. Synthetic materials such as plastics and fibreglass may also be unsuitable, depending on the material specification and intended use. Materials for packages, containers (including containers for the retention or despatch of samples) and container linings must not adversely affect the quality of the product. They must be impermeable and must not be weakened or otherwise affected by the product. Examples of materials to avoid are: natural rubber, polymethyl methacrylate, polystyrene, polyvinyl chloride, polyisobutylene. Polyethylene and polypropylene are also unsuitable unless they are high density types which have been specifically tested for compatibility with this product.

**Other information:**

Ensure that all local regulations regarding handling and storage facilities are followed. Never siphon by mouth.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Occupational exposure standards:**

None established.

**Respiratory protection:**

Not normally required. In a confined space self-contained breathing apparatus may be required.

**Hand protection:**

PVC or nitrile rubber gloves if splashes are likely to occur.

**Eye protection:**

Monogoggles if splashes are likely to occur.

**Body protection:**

Wear overalls to minimise contamination of personal clothing. Launder overalls and undergarments regularly. Safety shoes or boots - chemical resistant.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Physical state:**

Liquid at ambient temperature

**Colour:**

Green

**Odour:**

Characteristic

**Initial boiling point:**

circa 170°C

<b>Final boiling point:</b>	circa 390°C
<b>Vapour pressure:</b>	<0.1 kPa at 40°C
<b>Density:</b>	820-900 kg/m <sup>3</sup> at 15°C
<b>Kinematic viscosity:</b>	2-7 mm <sup>2</sup> /s at 40°C
<b>Vapour density (air=1):</b>	> 5
<b>Pour point:</b>	< -15°C
<b>Flash point:</b>	> 56°C (PMCC)
<b>Flammability limit - lower:</b>	circa 1 %(V/V)
<b>Flammability limit - upper:</b>	circa 6 %(V/V)
<b>Auto-ignition temperature:</b>	> 220 °C
<b>Explosive properties:</b>	In use, may form flammable/explosive vapour-air mixture
<b>Oxidizing properties:</b>	None
<b>Solubility in water:</b>	Data not available
<b>n-octanol/water partition coefficient:</b>	log P <sub>ow</sub> = 3-7
<b>Evaporation rate:</b>	Data not available

## 10. STABILITY/REACTIVITY

<b>Stability:</b>	Stable.
<b>Conditions to avoid:</b>	Heat, flames and sparks.
<b>Materials to avoid:</b>	Strong oxidizing agents.
<b>Hazardous decomposition products:</b>	None known.

## 11. TOXICOLOGICAL INFORMATION

<b>Basis for assessment:</b>	Toxicological data have not been determined specifically for this product. Information given is based on a knowledge of the toxicology of similar products.
<b>Acute toxicity - oral:</b>	LD <sub>50</sub> >5000 mg/kg.
<b>Acute toxicity - dermal:</b>	LD <sub>50</sub> >2000 mg/kg.
<b>Acute toxicity - inhalation:</b>	LC <sub>50</sub> >5 mg/l.
<b>Eye irritation:</b>	Expected to be slightly irritant.
<b>Skin irritation:</b>	Expected to be slightly irritant.
<b>Respiratory irritation:</b>	Data not available from animal studies.
<b>Skin sensitization:</b>	Not expected to be a skin sensitizer.
<b>(Sub) chronic toxicity:</b>	Repeated skin exposure expected to cause moderate to severe irritation. Repeated inhalation of mists expected to cause irritation of the respiratory tract.
<b>Carcinogenicity:</b>	Dermal application to mice causes skin tumours.
<b>Mutagenicity:</b>	Not considered to be a mutagenic hazard.

<b>Reproductive toxicity:</b>	Does not impair fertility. Not a developmental toxicant.
<b>Human effects:</b>	Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis. Under conditions of poor personal hygiene, excessive exposure may lead to irritation, oil acne and folliculitis and development of warty growths which may subsequently become malignant. See Section 4 for information regarding acute effects to humans.

## 12. ECOLOGICAL INFORMATION

<b>Basis for assessment:</b>	Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the ecotoxicology of similar products.
<b>Mobility:</b>	Floats on water. Partly evaporates from water or soil surfaces, but a significant proportion will remain after one day. Large volumes may penetrate soil and could contaminate groundwater.
<b>Persistence/degradability:</b>	Not readily biodegradable. Persists under anaerobic conditions. Oxidizes rapidly by photochemical reactions in air.
<b>Bioaccumulation:</b>	Has the potential to bioaccumulate. May cause tainting of fish and shellfish.
<b>Ecotoxicity:</b>	Poorly soluble mixture. Harmful, $10 < LC/EC_{50} \leq 100$ mg/l, to aquatic organisms. ( $LC/EC_{50}$ expressed as the nominal amount of product required to prepare aqueous test extract). Low acute toxicity to mammals. May cause physical fouling of aquatic organisms.
<b>Sewage treatment:</b>	Product is expected to be harmful, $EC_{50} > 10-100$ mg/l, to organisms in sewage treatment plants. ( $EC_{50}$ expressed as the nominal amount of product required to prepare aqueous test extract).
<b>Other information:</b>	This product is a preparation. The EC has not yet defined criteria for classifying preparations as dangerous for the environment. However, the refinery streams which constitute > 99 % (m/m) of this product meet the criteria for classification as dangerous for the environment, with the following Risk phrases: R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**13. DISPOSAL CONSIDERATIONS**

<b>Precautions:</b>	See Section 8.
<b>Waste disposal:</b>	Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand. Do not dispose into the environment, in drains or in water courses.
<b>Product disposal:</b>	
<b>Container disposal:</b>	200 litre drums should be emptied and returned to the supplier or sent to a drum conditioner without removing or defacing markings or labels. Drums should not be reused without first obliterating all markings.
<b>Local legislation:</b>	Dangerous Substances (Conveyance of Petroleum by Road) Regulations 1979 - SI No 314 of 1979. The European Communities (Waste Oils) Regulations 1992 - SI 399 of 1992. Local Government (Water Pollution) (Amendment) Act 1990.

**14. TRANSPORT INFORMATION**

<b>UN Number:</b>	1202
<b>UN Class/Packing Group:</b>	3, III
<b>UN Proper Shipping Name:</b>	Gas oil
<b>UN Number (sea transport, IMO):</b>	1202
<b>IMO Class/Packing Group:</b>	3.3, III
<b>IMO Symbol:</b>	Flammable Liquid
<b>IMO Marine Pollutant:</b>	No
<b>IMO Proper Shipping Name:</b>	Gas oil
<b>ADR/RID Class/Item:</b>	3, 31° (c)
<b>ADR/RID Symbol:</b>	Flammable Liquid
<b>ADR/RID Kemler Number:</b>	30-1202
<b>ADR/RID Proper Shipping Name:</b>	Gas oil
<b>ADNR Class/Item:</b>	
<b>UN Number (air transport, ICAO):</b>	1202
<b>IATA/ICAO Class/Packing Group:</b>	3, III
<b>IATA/ICAO Symbol:</b>	Flammable Liquid
<b>IATA/ICAO Proper Shipping Name:</b>	Gas oil

**Local regulations:**

Dangerous Substances (Conveyance of Petroleum by Road) Regulations 1979 - SI No 314 of 1979.

European Communities (Classification, Packaging, Labelling and Notification of Dangerous Substances) Regulations 1994 - SI No 77 of 1994.

Local Government (Water Pollution) (Amendment) Act 1990.

EC Directive 94/63/EC on VOC.

**15. REGULATORY INFORMATION**

<b>EC Label name:</b>	Contains: gas oil - unspecified
<b>EC Classification:</b>	Carcinogenic, category 3 Harmful
<b>EC Symbols:</b>	Xn
<b>EC Risk Phrases:</b>	R40 Possible risks of irreversible effects R65 Harmful: may cause lung damage if swallowed
<b>EC Safety Phrases:</b>	S2 Keep out of reach of children. S24 Avoid contact with skin. S36/37 Wear suitable protective clothing and gloves. S43 In case of fire use foam/dry powder/CO <sub>2</sub> - Never use water. S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
<b>EINECS (EC):</b>	All components listed.
<b>National legislation:</b>	Dangerous Substances (Retail and Private Petroleum Stores) Regulations 1979 - SI No 311 of 1979. Dangerous Substances (Conveyance of Petroleum by Road) Regulations 1979 - SI No 314 of 1979. Safety, Health and Welfare at Work Act, 1993. Local Government (Water Pollution) (Amendment) Act 1990. The European Communities (Waste Oils) Regulations 1992 - SI 399 of 1992. EC Directive 94/63/EC on VOC. European Communities (Classification, Packaging, Labelling and Notification of Dangerous Substances) Regulations 1994 - SI No 77 of 1994. European Communities (Dangerous Substances & Preparations Marketing and Use) Regulations 1994 - SI No 79 of 1994.
<b>Other information:</b>	



**16. OTHER INFORMATION****Uses and restrictions:**

Fuel for use in off-road diesel engines, boilers, gas turbines and other combustion equipment. This product must not be used in applications other than the above without first seeking the advice of the supplier. This product is not to be used: as a solvent or cleaning agent; for lighting or brightening fires; as a skin cleanser.

**Technical contact point:**

PQE

**Technical contact number:**

**Telephone:** +353 1 202 8827  
**Telex:** 93634  
**Fax:** + 353 1 283 8318

**SDS history:**

**Edition number:** 3  
**First issued:** June 1, 1993  
**Previous revisions:** April 16, 1996  
**Revised:** February 22<sup>nd</sup> 2001

**Revisions highlighted:**

Sections 2, 3 and 15: classification and labelling for the aspiration hazard revised in line with the 22<sup>nd</sup> ATP to the EU Dangerous Substances Directive.  
 Section 2, 3 and 12: recommended CONCAWE environmental classification for gas oil added.  
 Sections 3 and 5: Comment on distant ignition of vapour deleted.  
 Section 3, 4, 6, 7 and 11: Editorial changes.  
 Section 8: OEL for oil mist deleted.  
 Section 15: error in EC Classification corrected.  
 Changes indicated by vertical line to left of text.

**SDS distribution:**

This document contains important information to ensure the safe storage, handling and use of this product. The information in this document should be brought to the attention of the person in your organisation responsible for advising on safety matters.

**Other information:****References:**

Useful references include the following:  
 The Institute of Petroleum, London, 'Marketing Safety Code', Heyden and Son Limited, 1978  
 Applied Science, London, 'European Model Code of Safe Practice in the Storage and Handling of Petroleum Products Part 1: Operations'. (1973)  
 CONCAWE, Brussels. 'Gas Oils (diesel fuels/heating oils)' Product Dossier No 96/107.  
 Associated Octel Company, 'Leaded gasoline tanks - cleaning and disposal of sludge',.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not be construed as guaranteeing any specific property of the product.

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SDS No. DMC04005

Shell Ultra Low Sulphur Diesel

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

**Product name:** ULSD  
**Product code:** "DERV"  
**Product type:** Fuel for on-road diesel-powered engines.  
**Supplier:** Irish Shell Limited  
**Address:** Shell House, Beech Hill  
Clonskeagh, Dublin 4  
**Contact numbers:**  
**Telephone:** +353 1 202 8888  
**Telex:** 93634  
**Fax:** + 353 1 283 8320  
**Emergency telephone number:**  
**Emergency Cover:** +353 1 808 6232

2. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms:** Diesel, AGO.

**Preparation description:** Complex mixture of hydrocarbons consisting of paraffins, cycloparaffins, aromatic and olefinic hydrocarbons with carbon numbers predominantly in the C10 to C22 range. May contain catalytically cracked oils in which polycyclic aromatic compounds, mainly 3-ring but some 4- to 6-ring species, are present. It may also contain one or more of the following additives: anti-oxidants, corrosion inhibitors, biocides, dyes, markers, proprietary performance improving additives.

**Dangerous components/constituents:**

Component name	CAS number	Content range	EC hazard	R phrases
Fuels, diesel	68334-30-5	>99 %(m/m)	Carc Cat 3	R40-65

Note: EU Dangerous Substances Directive, 67/548/EEC, Annex I number for the above substance is 649-224-00-6.

Contains the following substances for which exposure limits apply: No ACGIH limits established.

### 3. HAZARDS IDENTIFICATION

<b>Human health hazards:</b>	Possible risks of irreversible effects. Product classified as a Category 3 carcinogen. Harmful: may cause lung damage if swallowed. Aspiration into the lungs may cause chemical pneumonitis which can be fatal. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis. Under conditions of poor personal hygiene, excessive exposure may lead to irritation, oil acne and folliculitis and development of warty growths which may subsequently become malignant. Prolonged exposure to vapour concentrations may affect the central nervous system.
<b>Safety hazards:</b>	Not classified as flammable, but will burn.
<b>Environmental hazards:</b>	Harmful to aquatic organisms. May cause long term adverse effects in the environment. Large volumes may penetrate soil and could contaminate groundwater. Not readily biodegradable. Has the potential to bioaccumulate. Persists under anaerobic conditions.

### 4. FIRST AID MEASURES

<b>Symptoms and effects:</b>	Splashes into the eye may cause irritation. If ingested can lead to irritation of the mouth, irritation of the throat, irritation of the digestive tract, vomiting. Aspiration into the lungs may occur directly or following ingestion. This can cause chemical pneumonitis which may be fatal. Prolonged exposure to vapour/mist concentrations above the recommended occupational exposure standard may cause: headache, dizziness, nausea, irritation of the eyes, upper respiratory tract, mouth, and digestive tract, cardiac irregularities, asphyxiation, unconsciousness and even death.
<b>First Aid - Inhalation:</b>	Remove to fresh air. If breathing but unconscious, place in the recovery position. If breathing has stopped, apply artificial respiration. If heartbeat absent give external cardiac compression. Monitor breathing and pulse. OBTAIN MEDICAL ATTENTION IMMEDIATELY.
<b>First Aid - Skin:</b>	Wash skin with water using soap if available. Contaminated clothing must be removed as soon as possible. It must be laundered before reuse.
<b>First Aid - Eye:</b>	Flush eye with water. If persistent irritation occurs, obtain medical attention.
<b>First Aid - Ingestion:</b>	DO NOT DELAY. Do not induce vomiting. Protect the airway if vomiting begins. Give nothing by mouth. If breathing but unconscious, place in the recovery position. If breathing has stopped, apply artificial respiration. OBTAIN MEDICAL ATTENTION IMMEDIATELY.
<b>Advice to physicians:</b>	Treat symptomatically. Diagnosis of ingestion of this product is by the characteristic odour on the victim's breath and from the history of events. In cases of ingestion, consider gastric lavage. Gastric lavage must only be undertaken after cuffed endotracheal intubation in view of the risk of aspiration. In cases of chemical pneumonitis, antibiotic and corticosteroid therapy should be considered. Administration of medicinal liquid paraffin or carbon for medicinal use (carbo medicinalis) may reduce absorption from the digestive tract.

## 5. FIRE FIGHTING MEASURES

<b>Specific hazards:</b>	Hazardous combustion products may include: carbon monoxide, oxides of nitrogen, oxides of sulphur, unburnt hydrocarbons.
<b>Extinguishing media:</b>	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
<b>Unsuitable extinguishing media:</b>	Water in a jet. Use of Halon extinguishers should be avoided for environmental reasons.
<b>Other information:</b>	Keep adjacent drums and tanks cool by spraying with water.

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions:</b>	Remove all possible sources of ignition in the surrounding area and evacuate all personnel. Do not breathe: vapour, mists. Avoid contact with: skin, eyes and clothing. Take off immediately all contaminated clothing.
<b>Personal protection:</b>	Wear: impervious overalls, PVC or nitrile rubber gloves, safety shoes or boots - chemical resistant, monogoggles.
<b>Environmental precautions:</b>	Prevent from entering into drains, ditches or rivers. Use appropriate containment to avoid environmental contamination.
<b>Clean-up methods - small spillage:</b>	Absorb or contain liquid with sand, earth or spill control material. Shovel up and place in a labelled sealable container for subsequent safe disposal. Do not disperse using water.
<b>Clean-up methods - large spillage:</b>	Transfer to a labelled, sealable container for product recovery or safe disposal. Otherwise treat as for small spillage.
<b>Other information:</b>	Local authorities should be advised if significant spillages cannot be contained. Observe all relevant local regulations. See Section 13 for information on disposal.

## 7. HANDLING AND STORAGE

<b>Handling:</b>	When using do not eat, drink or smoke. Only use in well-ventilated areas. Take precautionary measures against static discharges. Earth or bond all equipment.
<b>Handling temperature:</b>	Ambient.
<b>Storage:</b>	Locate tanks away from heat and other sources of ignition. This product must never be stored in buildings occupied by people. Small volumes may be stored in a suitably designed portable container. Such containers should be stored in well-ventilated areas, flameproof cabinets or stores. Do not store in unsuitable, unlabelled or incorrectly labelled containers. Keep container tightly closed in a dry, well-ventilated place away from direct sunlight and other sources of heat or ignition. Keep in a bunded area. Prevent ingress of water. Drums should be correctly stacked to a maximum of 3 high. Keep out of reach of children.
<b>Storage temperature:</b>	Ambient.



**Product transfer:**

Electrostatic charges may be generated during pumping. Ensure electrical continuity by bonding all equipment. Avoid splash filling. Particular care must be taken when 'switch loading' road/rail tankers which have previously contained gasoline. Wait 10 minutes after tank filling before opening hatches or manholes.

**Tank cleaning:**

Cleaning, inspection and maintenance of storage tanks is a specialist operation which requires the implementation of strict procedures and precautions. These include issuing of work permits, gas-freeing of tanks, using a manned harness and lifelines and wearing air-supplied breathing apparatus. Prior to entry and whilst cleaning is underway, the atmosphere within the tank must be monitored using an oxygen meter and/or explosimeter. Additional precautions are required where the tank may in the past have contained leaded gasoline. Consult the Associated Octel Company publication 'Leaded Gasoline Tanks - Cleaning and Disposal of Sludge'.

**Recommended materials:**

For containers, use: mild steel, stainless steel. Aluminium may also be used for applications where it does not present an unnecessary fire hazard. For container linings, use: amine-adduct cured epoxy paint. For seals and gaskets, use: compressed asbestos fibre, PTFE, Viton A, Viton B.

**Unsuitable materials:**

Examples of materials to avoid in the construction of facilities for the storage, handling and distribution of this product are: copper, copper alloys (ferrous and non-ferrous), zinc, zinc alloys. Synthetic materials such as plastics and fibreglass may also be unsuitable, depending on the material specification and intended use. Materials for packages, containers (including containers for the retention or despatch of samples) and container linings must not adversely affect the quality of the product. They must be impermeable and must not be weakened or otherwise affected by the product. Examples of materials to avoid are: natural rubber, polymethyl methacrylate, polystyrene, polyvinyl chloride, polyisobutylene. Polyethylene and polypropylene are also unsuitable unless they are high density types which have been specifically tested for compatibility with this product.

**Other information:**

Ensure that all local regulations regarding handling and storage facilities are followed. Never siphon by mouth.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Occupational exposure standards:**

None established.

**Respiratory protection:**

Not normally required. In a confined space self-contained breathing apparatus may be required.

**Hand protection:**

PVC or nitrile rubber gloves if splashes are likely to occur.

**Eye protection:**

Monogoggles if splashes are likely to occur.

**Body protection:**

Wear overalls to minimise contamination of personal clothing. Launder overalls and undergarments regularly. Safety shoes or boots - chemical resistant.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b>	Liquid at ambient temperature
<b>Colour:</b>	Clear
<b>Odour:</b>	Characteristic
<b>Initial boiling point:</b>	circa 150°C
<b>Final boiling point:</b>	circa 390°C
<b>Vapour pressure:</b>	<0.5 kPa at 40°C
<b>Density:</b>	820-845 kg/m <sup>3</sup> at 15°C
<b>Kinematic viscosity:</b>	2-7 mm <sup>2</sup> /s at 40°C
<b>Vapour density (air=1):</b>	> 5
<b>Pour point:</b>	< -15°C
<b>Flash point:</b>	> 56°C (PMCC)
<b>Flammability limit - lower:</b>	circa 1 % (V/V)
<b>Flammability limit - upper:</b>	circa 6 % (V/V)
<b>Auto-ignition temperature:</b>	> 250 °C
<b>Explosive properties:</b>	In use, may form flammable/explosive vapour-air mixture
<b>Oxidizing properties:</b>	None
<b>Solubility in water:</b>	Data not available
<b>n-octanol/water partition coefficient:</b>	log P <sub>ow</sub> = 3-7
<b>Evaporation rate:</b>	Data not available
<b>Sulphur content</b>	< 50 ppm

## 10. STABILITY/REACTIVITY

<b>Stability:</b>	Stable.
<b>Conditions to avoid:</b>	Heat, flames and sparks.
<b>Materials to avoid:</b>	Strong oxidizing agents.
<b>Hazardous decomposition products:</b>	None known.

## 11. TOXICOLOGICAL INFORMATION

<b>Basis for assessment:</b>	Toxicological data have not been determined specifically for this product. Information given is based on a knowledge of the toxicology of similar products.
<b>Acute toxicity - oral:</b>	LD <sub>50</sub> >5000 mg/kg.
<b>Acute toxicity - dermal:</b>	LD <sub>50</sub> >2000 mg/kg.
<b>Acute toxicity - inhalation:</b>	LC <sub>50</sub> >5 mg/l.
<b>Eye irritation:</b>	Expected to be slightly irritant.
<b>Skin irritation:</b>	Expected to be slightly irritant.
<b>Respiratory irritation:</b>	Data not available from animal studies.

<b>Skin sensitization:</b>	Not expected to be a skin sensitizer.
<b>(Sub) chronic toxicity:</b>	Repeated skin exposure expected to cause moderate to severe irritation. Repeated inhalation of mists expected to cause irritation of the respiratory tract.
<b>Carcinogenicity:</b>	Dermal application to mice causes skin tumours.
<b>Mutagenicity:</b>	Not considered to be a mutagenic hazard.
<b>Reproductive toxicity:</b>	Does not impair fertility Not a developmental toxicant.
<b>Human effects:</b>	Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis. Under conditions of poor personal hygiene, excessive exposure may lead to irritation, oil acne and folliculitis and development of warty growths which may subsequently become malignant. See Section 4 for information regarding acute effects to humans.

## 12. ECOLOGICAL INFORMATION

<b>Basis for assessment:</b>	Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the ecotoxicology of similar products.
<b>Mobility:</b>	Floats on water. Partly evaporates from water or soil surfaces, but a significant proportion will remain after one day. Large volumes may penetrate soil and could contaminate groundwater.
<b>Persistence/degradability:</b>	Not readily biodegradable. Persists under anaerobic conditions Oxidizes rapidly by photochemical reactions in air.
<b>Bioaccumulation:</b>	Has the potential to bioaccumulate. May cause tainting of fish and shellfish.
<b>Ecotoxicity:</b>	Poorly soluble mixture. Harmful, $10 < LC/EC_{50} \leq 100$ mg/l, to aquatic organisms. (LC/EC <sub>50</sub> expressed as the nominal amount of product required to prepare aqueous test extract). Low acute toxicity to mammals. May cause physical fouling of aquatic organisms.
<b>Sewage treatment:</b>	Product is expected to be harmful, EC <sub>50</sub> >10-100 mg/l, to organisms in sewage treatment plants. (EC <sub>50</sub> expressed as the nominal amount of product required to prepare aqueous test extract).
<b>Other information:</b>	This product is a preparation. The EC has not yet defined criteria for classifying preparations as dangerous for the environment. However, the refinery streams which constitute > 99 % (m/m) of this product meet the criteria for classification as dangerous for the environment, with the following Risk phrases: R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## 13. DISPOSAL CONSIDERATIONS

<b>Precautions:</b>	See Section 8.
<b>Waste disposal:</b>	Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand. Do not dispose into the environment, in drains or in water courses.

**Product disposal:****Container disposal:**

200 litre drums should be emptied and returned to the supplier or sent to a drum conditioner without removing or defacing markings or labels. Drums should not be reused without first obliterating all markings.

**Local legislation:**

Dangerous Substances (Conveyance of Petroleum by Road) Regulations 1979 - SI No 314 of 1979.

The European Communities (Waste Oils) Regulations 1992 - SI 399 of 1992.

Local Government (Water Pollution) (Amendment) Act 1990.

**14. TRANSPORT INFORMATION**

**UN Number:** 1202

**UN Class/Packing Group:** 3, III

**UN Proper Shipping Name:** Gas oil or Diesel fuel

**UN Number (sea transport, IMO):** 1202

**IMO Class/Packing Group:** 3.3, III

**IMO Symbol:** Flammable Liquid

**IMO Marine Pollutant:** No

**IMO Proper Shipping Name:** Gas oil or Diesel fuel

**ADR/RID Class/Item:** 3, 31° (c)

**ADR/RID Symbol:** Flammable Liquid

**ADR/RID Kemler Number:** 30-1202

**ADR/RID Proper Shipping Name:** Gas oil or Diesel fuel

**ADNR Class/Item:**

**UN Number (air transport, ICAO):** 1202

**IATA/ICAO Class/Packing Group:** 3, III

**IATA/ICAO Symbol:** Flammable Liquid

**IATA/ICAO Proper Shipping Name:** Gas oil or Diesel Fuel

**Local regulations:**

Dangerous Substances (Conveyance of Petroleum by Road) Regulations 1979 - SI No 314 of 1979.

European Communities (Classification, Packaging, Labelling and Notification of Dangerous Substances) Regulations 1994 - SI No 77 of 1994.

Local Government (Water Pollution) (Amendment) Act 1990.

EC Directive 94/63/EC on VOC.

**15. REGULATORY INFORMATION**

**EC Label name:** Contains: gas oil - unspecified

<b>EC Classification:</b>	Carcinogenic, category 3 Harmful
<b>EC Symbols:</b>	Xn
<b>EC Risk Phrases:</b>	R40 Possible risks of irreversible effects R65 Harmful: may cause lung damage if swallowed
<b>EC Safety Phrases:</b>	S2 Keep out of reach of children. S24 Avoid contact with skin. S36/37 Wear suitable protective clothing and gloves. S43 In case of fire use foam/dry powder/CO <sub>2</sub> - Never use water. S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
<b>EINECS (EC):</b>	All components listed.
<b>National legislation:</b>	Dangerous Substances (Retail and Private Petroleum Stores) Regulations 1979 - SI No 311 of 1979. Dangerous Substances (Conveyance of Petroleum by Road) Regulations 1979 - SI No 314 of 1979. Safety, Health and Welfare at Work Act, 1993. Local Government (Water Pollution) (Amendment) Act 1990. The European Communities (Waste Oils) Regulations 1992 - SI 399 of 1992. EC Directive 94/63/EC on VOC. European Communities (Classification, Packaging, Labelling and Notification of Dangerous Substances) Regulations 1994 - SI No 77 of 1994. European Communities (Dangerous Substances & Preparations Marketing and Use) Regulations 1994 - SI No 79 of 1994.

**Other information:****16. OTHER INFORMATION**

<b>Uses and restrictions:</b>	Fuel for on-road diesel-powered engines. This product must not be used in applications other than the above without first seeking the advice of the supplier. This product is not to be used: as a solvent or cleaning agent; for lighting or brightening fires; as a skin cleanser.
<b>Technical contact point:</b>	PQE
<b>Technical contact number:</b>	
<b>Telephone:</b>	+353 1 202 8827
<b>Telex:</b>	93634
<b>Fax:</b>	+ 353 1 283 8318
<b>SDS history:</b>	Edition number: 3 First issued: June 1, 1993 Previous revisions: April 10, 1996 Revised: February 22nd 2001



**Revisions highlighted:**

Sections 2, 3 and 15: classification and labelling for the aspiration hazard revised in line with the 22nd ATP to the EU Dangerous Substances Directive.  
Sections 2, 3 and 12: recommended CONCAWE environmental classification for gas oil added.  
Sections 3 and 5: Comment on distant ignition of vapour deleted.  
Section 3, 4, 6, 7 and 11: Editorial changes.  
Section 8: OEL for oil mist deleted.  
Section 15: error in EC Classification corrected.  
Changes indicated by vertical line to left of text.

**SDS distribution:**

This document contains important information to ensure the safe storage, handling and use of this product. The information in this document should be brought to the attention of the person in your organisation responsible for advising on safety matters.

**Other information:**

**References:**

Useful references include the following:  
The Institute of Petroleum, London, 'Marketing Safety Code', Heyden and Son Limited, 1978  
Applied Science, London, 'European Model Code of Safe Practice in the Storage and Handling of Petroleum Products Part 1: Operations', 1973.  
CONCAWE, Brussels. 'Gas Oils (diesel fuels/heating oils) Product Dossier No 96/107.'  
Associated Octel Company, 'Leaded gasoline tanks - cleaning and disposal of sludge'.

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# MAXOL LUBRICANTS LIMITED

## MATERIAL SAFETY DATA SHEET

### HYDRAULIC OILS

Supplier	Maxol Lubricants Ltd, Unit D, Airport Industrial Estate, Santry, Dublin 9.	Phone: (353) 1 806 0300 Fax : (353) 1 862 3200
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### COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredient	None
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### HAZARDS IDENTIFICATION

	This product consists of highly refined base oils with additives. It is of low oral and dermal toxicity and under normal conditions of use should present no significant health hazards. However, in common with most mineral oils prolonged and repeated skin contact may cause dermatitis.
--	--

### FIRST AID MEASURES

Inhalation:-	At ambient/normal handling temperatures, inhalation of vapours is normally not a problem. If overexposed to oil mist, remove from further exposure. Administer artificial respiration if breathing is irregular or has stopped. Get prompt medical attention.
Skin Contact:-	Wash thoroughly with plenty of water using soap if available. Remove contaminated clothing. If irritation persists, get medical attention.
Eye Contact:-	Rinse immediately with plenty of water until irritation subsides. If irritation persists, obtain medical advice.
Ingestion:-	If swallowed, DO NOT INDUCE VOMITING, keep at rest and call a physician.

## FIRE FIGHTING MEASURES

Extinguishing Media:-	Foam, Dry Chemical powder, carbon dioxide.
Explosion Hazards:-	Combustible material, low hazard. The product can form flammable mixtures or can burn only on heating above the flash point. However, minor contamination by hydrocarbons of higher volatility may increase the hazard.
Hazardous Combustion Products	Smoke, oxides of sulphur an phosphorous and carbon monoxide in the event of incomplete combustion. Possible release of hydrogen sulphide during hearing or hot storage.

## ACCIDENTAL RELEASE MEASURES

Personal Precautions:-	In open systems where contact is likely wear safety goggles, chemical-resistant overalls and chemically impervious gloves. Where only incidental contact is likely, wear safety glasses with side shields. No other special protection precautions are necessary provided skin/eye contact is avoided.
Land Spill	Shut off source taking normal safety precautions. Prevent liquid from entering sewers, water courses or low lying areas, advise the relevant authorities if it has or if it contaminates soil/vegetation. Take measure to minimise the effects on ground water.
Accidental Release Measures:	Recover by skimming or pumping using explosion-proof equipment, or contain spilled liquid with booms, sand or other suitable absorbent material and remove mechanically into containers. If necessary, dispose of absorbed residues.

## HANDLING AND STORAGE

Store the 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.
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## EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Controls:-	5 mg/m <sup>3</sup> for oil mists (TWA, 8h - workday) recommended based upon the ACGIH TLV (Analysis according to US NIOSH Method 5026, NIOSH Manual of Analytical Methods, 3 <sup>rd</sup> Ed)
Personal Protection:-	When concentrations in air may exceed the occupational exposure limit and where engineering work practices or other means of exposure reduction are not adequate approved respirators may be required..

## STABILITY AND REACTIVITY

Stability	Stable
Conditions to Avoid	Keep away from heat sources open flames and other sources of ignition.
Incompatible Materials	Avoid contact with strong oxidants such as liquid chlorine and concentration oxygen.
Hazardous Decomposition Products:-	Product does not decompose at ambient temperature

## TOXICOLOGICAL INFORMATION

Inhalation:	Negligible hazard at ambient/normal handling temperatures. 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.
Skin Contact:	Low order of acute toxicity. Prolonged or repeated contact may lead to mild skin irritation.
Eye Contact:	Slightly irritating, but does not injure eye tissue.
Ingestion:	Low order of acute/systematic toxicity.
Chronic:	Base oil components of this product have shown no evidence of carcinogenic activity in experimental animals.

## ECOLOGICAL INFORMATION

In the absence of specific environmental data for this product this assessment is based on information for general hydrocarbon components found in lubricant mineral oils. Lubricant mineral oil immediately following a release into the environment will remain largely on the soil surface and in water, will remain on the water surface. Based on chemical/physical information from the literature for this product category, no harmful effects to terrestrial or aquatic habitats would be expected. This product is expected to be resistant to biodegradation and to persist in the environment. This product may contain additives for which no environmental data is available. Hence, the above assessment concern the base oil(s) only.



## DISPOSAL CONSIDERATIONS

Collect and dispose of waste product at an authorised disposal facility, in conformance with national and local regulations and in accordance with EEC Directives on the disposal of waste.

## REGULATORY INFORMATION

EC Dangerous Substances/Preparation Classifications

Not Regulated.

Refer to your local national legislation implementing the EC Directive 91/55/EC.

## OTHER INFORMATION

Legal disclaimer

The information contained herein is based on the present knowledge and experience of Maxol Lubricants Ltd. It in no way constitutes the users own assessment of work place risk as required by other health and safety legislation.

Maxol Lubricants Ltd. does not, by supplying this information, guarantee or warrant any specific properties or qualities of goods supplied. It is the responsibility of the purchaser to determine whether the goods ordered are fit for any purpose for which they may be required.

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# MAXOL LUBRICANTS SAFETY DATA SHEET ANTIFREEZE / SUMMER COOLANT

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

**PRODUCT NAME:** ANTIFREEZE / SUMMER COOLANT C200

**APPLI CATIONS:** Automotive Industry

**SUPPLIER:** Maxol Lubricants Ltd  
Unit D  
Airport Business Campus  
Santry  
Dublin 9  
Ireland

**EMERGENCY TELEPHONES:** Please contact Head Office On +353(0) 1 806 0300

## 2. COMPOSITION/ INFORMATION ON INGREDIENTS:

NAME	CAS No.:	CLASSIFICATION	CONTENT
ETHANEDIOL	203-473-3	Xn R-22 107-21-1	60-100 %

The Full Text for all R-Phrases are Displayed in Section 16

**CAS No.:** Preparation

### COMPOSITI ON COMMENTS:

Bitrex [Denatonium benzoate CAS 3734-33-6] may have been added in small quantities by customer request.

**Contains:** Inhibitors

## 3. HAZARDS IDENTIFICATION

**Harmful if swallowed.**

## 4. FIRST AID MEASURES:

### INHALATION:

Remove victim immediately from source of exposure. Place unconscious person on the side in the recovery position and ensure breathing Get medical attention.

### INGESTION:

DO NOT INDUCE VOMITING! When risk of unconsciousness, place and transport the victim in secured side position. Drink plenty of water. Do not give victim anything to drink if he is unconscious. Get medical attention immediately!

**SKIN:**

Remove contaminated clothing. Wash the skin immediately with soap and water. Get medical attention if any discomfort continues.

**EYES:**

Promptly wash eyes with plenty of water while lifting the eye lids. Make sure to remove any contact lenses from the eyes before rinsing. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

**5. FIRE FIGHTING MEASURES:****EXTINGUISHING MEDIA:**

Stop flow of material to fire. Fire can be extinguished using: Water fog or mist. Alcohol resistant foam. Carbon dioxide (CO<sub>2</sub>). Dry chemicals, sand, dolomite etc.

**SPECIAL FIRE FIGHTING PROCEDURES:**

Avoid breathing fire vapours. Use water to keep fire exposed containers cool and disperse vapours. Keep run-off water out of sewers and water sources. Dike for water control.

**6. ACCIDENTAL RELEASE MEASURES:****PRECAUTIONS TO PROTECT ENVIRONMENT:**

Protect drains by covering to avoid any spillage entering the drainage system.

**SPILL CLEANUP METHODS:**

Stop leak if possible without risk. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Wear necessary protective equipment. Absorb in vermiculite, dry sand or earth and place into containers. Disposal should be carried out in accordance with the Special Waste Regulations. If any liquid enters the drainage system or watercourse inform the local authorities, Fire Brigade and Environment Agency

**7. HANDLING AND STORAGE:****USAGE PRECAUTIONS:**

Do not use in confined spaces without adequate ventilation and/or respirator. Eliminate all sources of ignition. Keep away from heat, sparks and open flame. Avoid inhalation of vapours. Avoid acids, moisture, and combustible materials.

**STORAGE PRECAUTIONS:**

Keep in cool, dry, ventilated storage and closed containers. Keep away from heat, sparks and open flame.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION:

INGREDIENT NAME:	CAS No.:	STD	LT EXP 8 Hrs	ST EXP 15 Min
ETHANEDIOL	107-21-1	OES	52 mg/m <sup>3</sup> (Sk)	104 mg/m <sup>3</sup> (Sk)
ANTIFREEZE AF-1	Preparation	OES	60 mg/m <sup>3</sup>	125 mg/m <sup>3</sup>

### PROTECTIVE EQUIPMENT:

### VENTILATION:

Must not be handled in confined space without sufficient ventilation.

### PROTECTIVE GLOVES:

Chemical resistant gloves required for prolonged or repeated contact. Use protective gloves made of: Impermeable material.

### EYE PROTECTION:

Wear approved safety goggles.

### HYGIENIC WORK PRACTICES:

Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly with soap & water if skin becomes contaminated. **DO NOT SMOKE IN WORK AREA!**

## 9. PHYSICAL AND CHEMICAL PROPERTIES:

### APPEARANCE:

Liquid. Hygroscopic. Viscous.

### COLOUR:

Colourless.

### ODOUR/TASTE:

Odourless or no characteristic odour.

**BOILING POINT (°C, interval):** 197

**Pressure:** 760mmHg

**MELT./FREEZ. POINT (°C, interval):** -12

**DENSITY/SPECIFIC GRAVITY (g/ ml):** 1.10

**Temperature (°C):** 20

**VAPOUR PRESSURE:** 0.05 kPa

**Temperature (°C):** 20

**SOLUBILITY DESCRIPTION:** Miscible with water. Miscible with: Acetone. Alcohol.

**FLASH POINT (°C):** 111

**Method:** CC (Closed cup).

**AUTO IGNITION TEMP. (°C):** 400

**FLAMMABILITY LIMIT - LOWER(%):** 3.2

**10. STABILITY AND REACTIVITY:**

**STABILITY:**

No particular stability concerns.  
Avoid: Heat, sparks, flames. Moisture.

**MATERIALS TO AVOID:**

Acids, oxidizing. Strong oxidizing agents. Sulphuric Acid, Oleum, Phosphorous Pentasulphide, Chlorosulphonic acid

**11. TOXICOLOGICAL INFORMATION:**

**Toxicological data**

Acute toxicity. TCLo Inhalation. Human. 10000 mg/m3 (SAX)  
Acute toxicity. LDLo. Oral. Human. 398 mg/kg (SAX)  
Acute toxicity. LD50. Oral. Rat. 4700 mg/kg (SAX)  
Acute toxicity. LD50. Intraperitoneal. Rat. 5010 mg/kg (SAX)  
Acute toxicity. LD50. Subcutaneous Rat. 2800 mg/kg (SAX)

**TOXICOLOGICAL INFORMATION:**

Toxicological information on major component only. As Ethanediol

**INGESTION:**

Harmful if swallowed.

**12. ECOLOGICAL INFORMATION:**

**ECOLOGICAL INFORMATION:**

Not regarded as dangerous for the environment.

**13. DISPOSAL CONSIDERATIONS:**

**DISPOSAL METHODS:**

This material must be disposed of via an Authorised Waste/Disposal Company in accordance with Local and or National Waste Disposal Regulations.

**14. TRANSPORT INFORMATION:**

**UN No. ROAD:** None

**UK ROAD PACK GR.:** None

**ADR CLASS:** Not classified for transportation.

**ADR ITEM No. :** None

**HAZARD No. (ADR):** Not relevant

**CEFIC TEC(R) No.:** None

**IMDG CLASS:** None

**EmS No. :** None

**MARINE POLLUTANT:** N/A.

**ICAO CLASS:** None

**15. REGULATORY INFORMATION:**

**LABEL FOR SUPPLY:** **HARMFUL**

**RISK PHRASES:** R-22 Harmful if swallowed.

**SAFETY PHRASES:** S-2 Keep out of reach of children.  
 S-13 Keep away from food, drink and animal feeding stuffs.  
 S-24/25 Avoid contact with skin and eyes.  
 S-43,16 In case of fire use sand, earth, alcohol resistant foam or water fog.  
 S-46 If swallowed seek medical advice immediately and show this container label.  
 S-56 Dispose of this material and its container to hazardous or special waste collectionpoint.

**UK REGULATORY REFERENCES:**

The Control of Substances Hazardous to Health Regulations 1988. Health and Safety at Work Act 1974. The Chemical (Hazard Information and Packaging for Supply Regulations) 1993 amended & 2002. Health and Safety (First Aid) Regulations 1981.  
 CDG Road, The Classification , Packaging and Labelling Regulations 1996.

**EU DIRECTIVES:**

Dangerous Substance Directive 67\548. Dangerous Preparations Directive 88\379.



**STATUTORY INSTRUMENTS:**

Chemicals (Hazard Information and Packaging) Regulations.  
Control of Substances Hazardous to Health.

**APPROVED CODE OF PRACTICE:**

Classification and Labelling of Substances and Preparations  
Dangerous for Supply.

**GUIDANCE NOTES:**

Occupational Exposure Limits EH40.

**16. OTHER INFORMATION:**

**INFORMATION SOURCES:**

Dangerous Properties of Industrial Chemicals, 7. ed., Sax &  
Lewis, 1988. Fire and Related Properties of Industrial  
Chemicals, Fire Protection Association.

**REVISION COMMENTS:**

New issue. CHIP 3 update Compliant with ADR 2003

**ISSUED BY:**

PCL Technical Team

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# MAXOL LUBRICANTS LIMITED

## MATERIAL SAFETY DATA SHEET

### IDENTIFICATION

<b>Product Name</b>	Maxol Multipurpose Grease (Brown/Black) EP 2	
<b>Application</b>	Product supplied for use in lubricating systems only	
<b>Supplier</b>	Maxol Lubricants Ltd, Unit D, Airport Industrial Estate, Santry, Dublin 9.	Phone: (353) 1 806 0300 Fax : (353) 1 862 3200

### COMPOSITION/INFORMATION ON INGREDIENTS

<b>General</b>	Mineral oil thickened with lithium soap, containing EP, anti-wear, anti-oxidant, corrosion inhibitor and water resistant additives
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### HAZARDOUS INGREDIENTS

<b>Ingredient</b>	Bitumen
<b>Risk phrase</b>	R40
<b>Safety phrase</b>	S24
<b>Concentration</b>	3 > 10%

### HAZARDS IDENTIFICATION

	Prolonged or extensive contact with this product may cause irreversible skin disorders.
<b>Pressure injection</b>	Injection of all products will cause severe internal damage if not promptly treated.
<b>Special Hazards of product after use</b>	As above

## FIRST AID MEASURES

<b>Eyes</b>	Flush eyes thoroughly with copious amounts of water, until irritation subsides. If irritation persists, obtain medical attention.
<b>Skin</b>	Wash with large amounts of water, using soap if available.
<b>Inhalation</b>	Vapour pressure of this material is low. Inhalation under normal conditions is not usually a problem.
<b>Ingestion</b>	Not expected to be a problem. If swallowed, do not induce vomiting. If uncomfortable, seek medical advice.
<b>Pressure injection</b>	ALWAYS OBTAIN IMMEDIATE MEDICAL ATTENTION EVEN THOUGH THE INJURY MY APPEAR MINOR!

## FIRE FIGHTING MEASURES

<b>Flammability</b>	Non-flammable
<b>Flash point</b>	> 150C PMCC
<b>Extinguishing Media</b>	Foam, dry powder and CO <sub>2</sub>
<b>Products of combustion</b>	Carbon, oxides of carbon and ZINC

## ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Spilt product presents a significant slip hazard Avoid exposure of the product to sources of ignition
<b>Environmental Precautions</b>	Prevent entry into drains, sewers and water courses
<b>Decontaminating precautions</b>	Soak up with inert absorbent, or contain and remove by best available means

## HANDLING AND STORAGE

<b>Handling</b>	Prevent slip hazards
<b>Storage</b>	Keep containers closed when not in use
<b>Storage temp.</b>	> 40C

## EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Eye Protection</b>	Wear safety glasses if there is a risk of possible eye contact
<b>Skin Protection</b>	Use barrier cream, wear gloves, and overalls if there is a possibility of prolonged skin contact
<b>Inhalation</b>	No special respiratory protection is required under normal conditions of use.
<b>Industrial hygiene</b>	Good personal hygiene practices should be followed

## STABILITY AND REACTIVITY

	Thermal - stable Light - Stable Avoid extreme heat Incompatible with strong oxidising agents
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## TOXICOLOGICAL INFORMATION

	Estimated oral LD50 Rat > 2g/Kg
<b>Health effects</b>	
<b>On eyes</b>	May cause transient irritation
<b>On skin</b>	Unlikely to cause harm on brief or occasional contact
<b>By inhalation</b>	Low volatility makes inhalation unlikely at ambient temperatures
<b>By ingestion</b>	May cause nausea, vomiting, and diarrhoea
<b>Chronic</b>	Repeated and prolonged skin contact may lead to skin disorders.
<b>Other</b>	Products which have become contaminated in use or from external sources may present more serious health effects

## ECOLOGICAL INFORMATION

<b>Biodegradability</b>	N/E
<b>Chemical oxygen demand</b>	N/E
	Lubricating greases are inherently, but not readily, biodegradable

## DISPOSAL CONSIDERATIONS

Place used and contaminated materials/packaging in suitable containers. Dispose of the controlled waste in accordance with the Duty of Care (Environmental Protection Act 1990) using a licensed waste disposal company.

## TRANSPORT INFORMATION

Classification for transport	Not classified as hazardous for transport
UN No.	None
Packaging group	N/A
Shipping name	N/A
IMO class	N/A
Marine pollutant	No
ADR/RID	N/A
ICAO/IATA	N/A

## REGULATORY INFORMATION

Hazard label data	Classified as harmful
Risk phrase	R 40 = Possible risk of irreversible effects
Safety phrase	S24 = Avoid contact with skin
EC Directives	Framework Waste Directive, 91/156/EEC Waste Oil Directive, 87/101/EEC
Statutory Instruments	The Health & Safety at Work etc. Act 1974 Consumer Protection Act 1987 Environmental Protection Act 1990 Control of Substances Hazardous to Health Regs. 1988 The Chemicals (Hazard, Information and Packaging for Supply) Regs. 1996

## 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 without seeking advice from us.

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.

### Legal disclaimer

If you are an employer, it is your duty to tell your employees and other who may be affected of any hazards described in this sheet and of any precaution which should be taken.

The information supplied above is based upon the present state of our knowledge of the product at the time of publication. It is given in good faith and no warranty is implied with respect to the specification or quality of the product. The user must satisfy himself that the product is entirely suitable for his purpose.

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# MAXOL LUBRICANTS LIMITED

## MATERIAL SAFETY DATA SHEET

### IDENTIFICATION

Product Name	MAXOL Gear Oils 85W/140, 80W/90, 75W/90, EP80 EP90, EP140, LS90		
Supplier	Maxol Lubricants Ltd Unit D, Airport Industrial Estate Santry Dublin 9	Phone : (353) 1 806 0300 Fax: : (353) 1 862 3200	

### COMPOSITION/INFORMATION ON INGREDIENTS

General	Ingredients present at or above 0.1 wt% (classified as toxic or very toxic) or 1 wt% (classified as harmful, irritant or corrosive).		
Hazardous ingredients	None.		

### HAZARDOUS IDENTIFICATION

This product consists of highly refined base oils with additives. It is of low oral and dermal toxicity and under normal conditions of use should present no significant health hazards. However, in common with most mineral oils, prolonged and repeated skin contact may cause dermatitis. Handling precautions should be strictly observed.			
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## FIRST AID MEASURES

Inhalation:-	At ambient/normal handling temperatures, inhalation of vapours is normally not a problem. If overexposed to oil mist, remove from further exposure. Administer artificial respiration if breathing is irregular or has stopped. Get prompt medical attention.
Skin Contact:-	Wash thoroughly with plenty of water, using soap if available. Remove contaminated clothing. If irritation persists, get medical attention.
Eye Contact:-	Rinse immediately with plenty of water until irritation subsides. If irritation persists, obtain medical advice.
Ingestion:-	If swallowed, DO NOT induce vomiting; keep at rest and call a physician.

## FIRE FIGHTING MEASURES

Suitable Extinguishing Media:-	Foam, Dry chemical powder, carbon dioxide.
Hazardous Combustion Products:	Smoke, sulphur oxides and carbon monoxide in the event of incomplete combustion. Possible release of hydrogen sulphide during overheating or hot storage.
Special fire fighting procedures:-	Water fog or spray, to cool fire-exposed surfaces (eg. 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.
Special Fire/Explosion Hazards:	Combustible material, low hazard. The product can form flammable mixtures or can burn only on heating above the flash point. However, minor contamination by hydrocarbons of higher volatility may increase the hazard.

## ACCIDENTAL RELEASE MEASURES

Land spill	Shut off source taking normal safety precautions. Prevent liquid from entering sewers, water courses or low lying areas; advise the relevant authorities if it has, or if it contaminates soil/vegetation. Take measures to minimise the effects on ground water.
Accidental Release Measures	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 below ('Disposal Considerations').
Water spill	Confine the spill immediately with booms. Warn other shipping. Notify port and other relevant authorities.  Remove from the surface by skimming or with suitable absorbents. Disperse the residue in unconfined waters, if permitted by local authorities and environmental agencies.

## HANDLING AND STORAGE

Store the 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 °C	Ambient to 40
Storage	Temperature °C	Ambient to 40

### Special Instructions

Keep containers closed when not in use.  
Prevent small spills and leakages to avoid slip hazard.

## EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits	5 mg/m <sup>3</sup> for oil mists (TWA, 8h - workday) recommended based upon the ACGIH TLV (Analysis according to US NIOSH Method 5026, NIOSH Manual of Analytical Methods, 3rd Ed.)
Personal protection	<p>In open systems where contact is likely, wear safety goggles, chemical-resistant overalls, and chemically impervious gloves</p> <p>Where only incidental contact is likely, wear safety glasses with side shields. No other special protection precautions are necessary provided skin/eye contact is avoided.</p> <p>When concentrations in air may exceed the occupational exposure limit, and where engineering, work practices or other means of exposure reduction are not adequate, approved respirators may be required.</p>
Inhalation:	<p>Negligible hazard at ambient/normal handling temperatures</p> <p>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.</p>
Skin Contact:	<p>Low order of acute toxicity.</p> <p>Prolonged or repeated contact may lead to mild skin irritation.</p>
Eye Contact:	Slightly irritating, but does not injure eye tissue.
Ingestion:	Low order of acute/systemic toxicity.
Chronic:	Although there is no specific test data on all the base oil components, by comparison with base oils of similar composition and refining history the base oil components would not be expected to demonstrate carcinogenic potential. The base oil component which has been tested has exhibited no evidence of carcinogenicity.

## PHYSICAL AND CHEMICAL PROPERTIES

Please see our Technical Data Specification Sheet

## STABILITY AND REACTIVITY

Stability (Thermal, Light, etc)	Stable.
Conditions to Avoid:	Keep away from heat sources, open flames and other sources of ignition.
Incompatible Materials:	Avoid contact with strong oxidants such as liquid chlorine and concentrated oxygen.
Hazardous Decomposition products:	Product does not decompose at ambient temperature.

## TOXICOLOGICAL INFORMATION

Toxicity Data:	
Acute	No tests are available for the complete formulated product. The potential health hazards described were therefore derived from what is generally known of the toxicity of the base oils and the additives, taking into account the concentrations at which they are present. The general effects of mineral oils of this type are well known and are described in numerous publications including CONCAWE Report 5/87" Health Aspects of Lubricants.
Chronic:	Although there is no specific data on all the base oil components, by comparison with base oils of similar composition and refining history the base oils would not be expected to demonstrate carcinogenic potential. The base oil component which has been tested has been subjected to a skin painting bioassay using a standard Exxon protocol. This base oil component exhibited no evidence of carcinogenicity.

## ECOLOGICAL INFORMATION

In the absence of specific environmental data for this product, this assessment is based on information for general hydrocarbon components found in lubricant mineral oils. Lubricant mineral oil, immediately following a release into the environment, will remain largely on the soil surface, and in water, will remain largely on the water surface. Based on chemical/physical information from the literature for this product category, no harmful effects to terrestrial or aquatic habitats would be expected. This product is expected to be resistant to biodegradation and to persist in the environment. This product may contain additives for which no environmental data is available. Hence, the above assessment concerns the base oil(s) only.

## DISPOSAL CONSIDERATIONS

Collect and dispose of waste product at an authorised disposal facility, in conformance with national and local regulations, and in accordance with EEC Directives on the disposal of waste oil.

## TRANSPORT INFORMATION

Usual shipping containers: Tank Trucks, Drums, Cans.

Transport Temperature °C: Ambient to 40

## REGULATORY INFORMATION

EC Dangerous Substances/Preparations Classifications:

Not regulated

Refer to your local national legislation implementing the EC Directive 91/155/EC

## OTHER INFORMATION

Product Type/Uses: Automotive extreme pressure gear oil for hypoid and other highly loaded gears including top-up of limited slip axles.

Source of key data: The recommendations presented in this Material Safety Data Sheet were compiled from actual test data (when available), comparison with similar products, component information from suppliers and from recognised codes of good practice.



**Legal Disclaimer**

The information supplied above is based upon the present state of our knowledge of the product at the time of publication. It is given in good faith and no warranty is implied with respect to the specification or quality of the product. The user must satisfy himself that the product is entirely suitable for his purpose.

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**BROMADIOLONE  
SAFETY DATA**

<b>Description</b>	Grains (Pink)	Odour	None
<b>Active Ingredient</b>	Bromadiolone 0.005%	Group	Anticoagulent
<b>Transport</b>	ADR – Free	TREM – Free	

**HAZARDS**

<b>Flammability</b>	Non-Flammable	Low
<b>Toxicity</b>	Low toxicity. Major effect is achieved by successive doses over a number of day's rather than single doses. Large quantities would have to be ingested by humans to cause toxic effects.	Low
<b>Reactivity</b>	Non-reactive	Low

**PRECAUTIONS**

<b>Fire</b>	Store away from heat and naked flames	Avoid ignition sources
<b>Toxicity</b>	Wear protective gloves	Avoid all contact
<b>Reactivity</b>	No Special precautions	

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**BROMADIOLONE  
SAFETY DATA**

**EMERGENCY ACTIONS**

**Fire**

Protective clothing and respirator must be worn. Toxic fumes may be emitted as a result as a result of fire.

**Avoid Fumes**

**First Aid**

Skin - Wash affective parts with water  
Eyes - Irrigate for at least 10 minutes with water.

**Medical aid  
essential**

**Spillage's**

Collect sweeping and dispose of safely.  
Avoid effluent problems

**Avoid Effluent**

**MEDICAL ADVICE IN THE CASE OF ACCIDENTS CAN BE  
OBTAINED FROM- POISON CENTRE, BEAUMONT  
HOSPITAL. PHONE (01) 8379964**

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

**Product name:** FARGLO FLUORESCENT PAINT

**Product code:** 06FFP

**Use / description of product:** Flammable. Irritant. Liquid.

**2. COMPOSITION / INFORMATION ON INGREDIENTS**

**Ingredient 1:** LOW BOILING POINT NAPHTHA - UNSPECIFIED - SOLVENT NAPHTHA  
(PETROLEUM), LIGHT AROM. 30-60%

CAS: 64742-95-6

EINECS: 265-199-0

[T] R45; [F+] R12; [Xi] R38; [N] R51/53; [Xn] R65;

**Ingredient 2:** 1,2,4-TRIMETHYLBENZENE 10-30%

CAS: 95-63-6

EINECS: 202-436-9

[-] R10; [Xn] R20; [Xi] R36/37/38; [N] R51/53;

**3. HAZARDS IDENTIFICATION**

**Main hazards:** Flammable. Irritating to eyes, respiratory system and skin. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**4. FIRST AID MEASURES (SYMPTOMS)**

**Skin contact:** There may be irritation and redness at the site of contact.

**Eye contact:** There may be irritation and redness. Corneal burns may occur.

**Ingestion:** Nausea and stomach pain may occur. There may be vomiting. There may be loss of consciousness. Convulsions may occur.

**Inhalation:** Exposure may cause coughing or wheezing. There may be congestion of the lungs causing severe shortness of breath. There may be loss of consciousness. Convulsions may occur.

**4. FIRST AID MEASURES (ACTION)**

**Skin contact:** Remove all contaminated clothes and footwear immediately unless stuck to skin. Drench the affected skin with running water for 10 minutes or longer if substance is still on skin. Transfer to hospital if there are burns or symptoms of poisoning.

**Eye contact:** Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination.

**Ingestion:** Do not induce vomiting. If conscious, give 1 pint of water to drink immediately. If

[cont...]

**SAFETY DATA SHEET**  
**FARGLO FLUORESCENT PAINT**

unconscious, check for breathing and apply artificial respiration if necessary. If unconscious and breathing is OK, place in the recovery position. Transfer to hospital as soon as possible.

**Inhalation:** Remove casualty from exposure ensuring one's own safety whilst doing so. If unconscious, check for breathing and apply artificial respiration if necessary. If unconscious and breathing is OK, place in the recovery position. If conscious, ensure the casualty sits or lies down. If breathing becomes bubbly, have the casualty sit and provide oxygen if available. Transfer to hospital as soon as possible.

**5. FIRE-FIGHTING MEASURES**

**Extinguishing media:** Carbon dioxide. Alcohol or polymer foam. Dry chemical powder.

**Exposure hazards:** In combustion emits toxic fumes.

**Protection of fire-fighters:** Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions:** Mark out the contaminated area with signs and prevent access to unauthorised personnel. Turn leaking containers leak-side up to prevent the escape of liquid.

**Environmental precautions:** Do not discharge into drains or rivers. Contain the spillage using bunding.

**Clean-up procedures:** Absorb into dry earth or sand. If inside, transfer outside of building in suitable containers. For small spills, absorb on to paper and allow to evaporate in a fume cupboard. Wash the spillage site with large amounts of water.

**7. HANDLING AND STORAGE**

**Handling requirements:** Ensure there is sufficient ventilation of the area. Smoking is forbidden. Avoid direct contact with the substance.

**Storage conditions:** Store in cool, well ventilated area. Keep away from sources of ignition. Keep container tightly closed.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Engineering measures:** Ensure there is sufficient ventilation of the area.

**Respiratory protection:** Self-contained breathing apparatus must be available in case of emergency.

**Hand protection:** Protective gloves.

**Eye protection:** Safety goggles.

**Skin protection:** Protective clothing with elasticated cuffs and closed neck. Boots made of PVC. Ensure safety shower is to hand.

**TWA (8 hr exposure limit):** See section 16.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**State:** Liquid

**Viscosity:** Viscous

**Oxidising:** Non-oxidising (by EC criteria)

**Solubility in water:** Not miscible

**Flammability limits %: lower:** 0.8

[cont...]

**SAFETY DATA SHEET**  
**FARGLO FLUORESCENT PAINT**

upper: 8  
 Flash point°C: 39  
 Relative density: 1.05

**10. STABILITY AND REACTIVITY**

Stability: Stable under normal conditions.  
 Conditions to avoid: Sources of ignition.  
 Materials to avoid: Oxidising agents.

**11. TOXICOLOGICAL INFORMATION**

Effects of exposure: There is no information on the product itself.  
 Ingredient 1: LOW BOILING POINT NAPHTHA - UNSPECIFIED - SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.  
 Ingredient 2: 1,2,4-TRIMETHYLBENZENE  
 IPR RAT LDLO 1752mg/kg  
 ORL RAT LD50 5gm/kg

**12. ECOLOGICAL INFORMATION**

Other adverse effects: There is no information on the product itself.

**13. DISPOSAL CONSIDERATIONS**

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

**14. TRANSPORT INFORMATION**

**ADR / RID**

UN no: 1263  
 ADR Class: 3  
 Hazard ID no: 30  
 Labelling: 3  
 Shipping name: PAINT

**IMDG / IMO**

UN no: 1263  
 Class: 3.3  
 Packing group: III  
 EmS: 3-05  
 Marine pollutant: YES  
 Labelling: 3

**IATA / ICAO**

UN no: 1263  
 Class: 3  
 Packing group: III  
 Packing instructions: 310  
 Quantity: 220 L

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[cont...]



**SAFETY DATA SHEET**  
**FARGLO FLUORESCENT PAINT**

Labelling: 3

**15. REGULATORY INFORMATION**

**Hazard symbols:** Irritant.

Dangerous for the environment.

Flammable.



**Risk phrases:** R10: Flammable.

R36/37/38: Irritating to eyes, respiratory system and skin.

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety phrases:** S29: Do not empty into drains.

S16: Keep away from sources of ignition - No smoking.

S23: Do not breathe spray/fumes.

S36/37/39: Wear suitable protective clothing, gloves and eye / face protection.

**Note:** The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

**16. ADDITIONAL INFORMATION**

**Additional information:** THE OCCUPATIONAL EXPOSURE LEVELS:- 1,2,4-trimethylbenzene - 8TWA 25ppm / 125mg/m3 - 15mins

**Risk phrases used in s.2:** R45: May cause cancer

R12: Extremely flammable.

R38: Irritating to skin.

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R65: Harmful: may cause lung damage if swallowed.

R10: Flammable.

R20: Harmful by inhalation.

R36/37/38: Irritating to eyes, respiratory system and skin.

**Legal disclaimer:** The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

Issued: 10/11/2003

Revision No: 3

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**1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING****Product name:** ACRYLIC CLEAR LACQUER**Product code:** 05ACL**Use / description of product:** Liquid. Flammable, harmful. The regulatory information is dependent upon the concentration limit of the specific substance.**2. COMPOSITION / INFORMATION ON INGREDIENTS****Ingredient 1:** LOW BOILING POINT HYDROGEN TREATED NAPHTHA - NAPHTHA  
(PETROLEUM), HYDRODESULPHURIZED HEAVY 10-30%

CAS: 64742-82-1

EINECS: 265-185-4

[T] R45; [-] R10; [N] R51/53; [Xn] R65;

**Ingredient 2:** 1,2,4-TRIMETHYLBENZENE 10-30%

CAS: 95-63-6

EINECS: 202-436-9

[-] R10; [Xn] R20; [Xi] R36/37/38; [N] R51/53;

**Ingredient 3:** NAPHTHA SOLVENT 30-60%

CAS: 8052-41-3

EINECS: 232-489-3

[T] R45; [Xn] R65;

**3. HAZARDS IDENTIFICATION****Main hazards:** Flammable. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.**4. FIRST AID MEASURES (SYMPTOMS)****Skin contact:** There may be irritation and redness at the site of contact.**Eye contact:** There may be irritation and redness. Corneal burns may occur.**Ingestion:** Nausea and stomach pain may occur. There may be vomiting. There may be loss of consciousness. Convulsions may occur.**Inhalation:** Exposure may cause coughing or wheezing. There may be congestion of the lungs causing severe shortness of breath. There may be loss of consciousness. Convulsions may occur.**4. FIRST AID MEASURES (ACTION)****Skin contact:** Remove all contaminated clothes and footwear immediately unless stuck to skin.

[cont...]

**SAFETY DATA SHEET**  
**ACRYLIC CLEAR LACQUER**

Drench the affected skin with running water for 10 minutes or longer if substance is still on skin. Transfer to hospital if there are burns or symptoms of poisoning.

**Eye contact:** Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination.

**Ingestion:** Do not induce vomiting. If conscious, give 1 pint of water to drink immediately. If unconscious, check for breathing and apply artificial respiration if necessary. If unconscious and breathing is OK, place in the recovery position. Transfer to hospital as soon as possible.

**Inhalation:** Remove casualty from exposure ensuring one's own safety whilst doing so. If unconscious, check for breathing and apply artificial respiration if necessary. If unconscious and breathing is OK, place in the recovery position. If conscious, ensure the casualty sits or lies down. If breathing becomes bubbly, have the casualty sit and provide oxygen if available. Transfer to hospital as soon as possible.

**5. FIRE-FIGHTING MEASURES**

**Extinguishing media:** Carbon dioxide. Alcohol or polymer foam. Dry chemical powder.

**Exposure hazards:** In combustion emits toxic fumes.

**Protection of fire-fighters:** Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions:** Mark out the contaminated area with signs and prevent access to unauthorised personnel. Turn leaking containers leak-side up to prevent the escape of liquid.

**Environmental precautions:** Do not discharge into drains or rivers. Contain the spillage using bunding.

**Clean-up procedures:** Absorb into dry earth or sand. If inside, transfer outside of building in suitable containers. For small spills, absorb on to paper and allow to evaporate in a fume cupboard. Wash the spillage site with large amounts of water.

**7. HANDLING AND STORAGE**

**Handling requirements:** Ensure there is sufficient ventilation of the area. Smoking is forbidden. Avoid direct contact with the substance.

**Storage conditions:** Store in cool, well ventilated area. Keep away from sources of ignition. Keep container tightly closed.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Engineering measures:** Ensure there is sufficient ventilation of the area.

**Respiratory protection:** Self-contained breathing apparatus must be available in case of emergency.

**Hand protection:** Protective gloves.

**Eye protection:** Safety goggles.

**Skin protection:** Protective clothing with elasticated cuffs and closed-neck. Boots made of PVC. Ensure safety shower is to hand.

**TWA (8 hr exposure limit):** See section 16.

[cont...]

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**State:** Liquid  
**Viscosity:** Viscous  
**Oxidising:** Non-oxidising (by EC criteria)  
**Solubility in water:** Not miscible  
**Flammability limits %: lower:** 0.8  
**upper:** 8  
**Flash point°C:** 25  
**Relative density:** 0.88

**10. STABILITY AND REACTIVITY**

**Stability:** Stable under normal conditions.  
**Conditions to avoid:** Sources of ignition.  
**Materials to avoid:** Oxidising agents.

**11. TOXICOLOGICAL INFORMATION**

**Effects of exposure:** There is no information on the product itself.  
**Ingredient 1:** LOW BOILING POINT HYDROGEN TREATED NAPHTHA - NAPHTHA  
(PETROLEUM), HYDRODESULPHURIZED HEAVY  
**Ingredient 2:** 1,2,4-TRIMETHYLBENZENE  
IPR RAT LDLO 1752mg/kg  
ORL RAT LD50 5gm/kg

**12. ECOLOGICAL INFORMATION**

**Other adverse effects:** There is no information on the product itself.

**13. DISPOSAL CONSIDERATIONS**

**Waste disposal:** Dispose of as normal industrial waste.  
**Disposal of packaging:** Dispose of as normal industrial waste.  
**NB:** The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

**14. TRANSPORT INFORMATION****ADR / RID**

**UN no:** 1263  
**ADR Class:** 3  
**Hazard ID no:** 33  
**Labelling:** 3  
**Shipping name:** PAINT

**IMDG / IMO**

**UN no:** 1263  
**Class:** 3  
**Packing group:** III  
**EmS:** 3-05

[cont...]

**SAFETY DATA SHEET**  
**ACRYLIC CLEAR LACQUER**

**Marine pollutant:** YES  
**Labelling:** 3

**IATA / ICAO**

**UN no:** 1263  
**Class:** 3  
**Packing group:** III  
**Packing instructions:** 310  
**Quantity:** 220 L  
**Labelling:** 3

**15. REGULATORY INFORMATION**

**Hazard symbols:** Dangerous for the environment.  
 Flammable.



**Risk phrases:** R10: Flammable.

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety phrases:** S29: Do not empty into drains.

S16: Keep away from sources of ignition - No smoking.

S23: Do not breathe spray/fumes.

S51: Use only in well-ventilated areas.

**Note:** The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

**16. ADDITIONAL INFORMATION**

**Additional information:** THE OCCUPATIONAL EXPOSURE LEVELS:- White Sprirt - 8TWA 108ppm / 600mg/m3 - 15mins --- . 1,2,4-trimethylbenzene - 8TWA 25ppm / 125mg/m3 - 15mins ---

**Risk phrases used in s.2:** R45: May cause cancer.

R10: Flammable.

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R65: Harmful: may cause lung damage if swallowed.

R20: Harmful by inhalation.

R36/37/38: Irritating to eyes, respiratory system and skin.

**Legal disclaimer:** The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

# MATERIAL SAFETY DATA SHEET

According to Directive 93/112/EC

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: **ACETYLENE (dissolved)**  
Chemical Composition:  $C_2H_2$   
Gas No: 00074-86-2  
EINECS No: 008169  
Company Name: **Irish Oxygen Co Ltd**  
Waterfall Road, Cork  
Phone: 021-541821

## 2. HAZARDS IDENTIFICATION

Dissolved Gas  
Extremely flammable

## 3. FIRST AID MEASURES

Inhalation: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness.  
Victim may not be aware of asphyxiation.

In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.

Keep victim warm and rested. Call a doctor.  
Apply artificial respiration if breathing stopped.

## 4. FIRE FIGHTING MEASURES

SPECIFIC HAZARD: Exposure to fire may cause containers to rupture/explode.

HAZARDOUS COMBUSTION PRODUCTS: Incomplete combustion may form carbon monoxide.

SUITABLE EXTINGUISHING MEDIA: All known extinguishers can be used.

SPECIFIC METHODS: If possible, stop flow of product.  
Continue water spray from protected position until container stays cool.  
Move container away or cool with water from protected position.  
Do not extinguish a leaking gas flame unless absolutely necessary.  
Spontaneous/explosive re-ignition may occur.  
Extinguish any other fire.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS:  
In confined space use self contained breathing apparatus.

## 5. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Evacuate area.  
Ensure adequate air ventilation.  
Eliminate ignition sources.

ENVIRONMENTAL PRECAUTIONS: Try to stop release.

CLEAN UP METHODS: Ventilate area.

## 6. HANDLING AND STORAGE

Ensure equipment is adequately earthed.  
Open valve slowly to avoid pressure shock.  
Avoid contact with pure copper, mercury, silver and brass with a copper content greater than 70%.  
Purge air from system before introducing gas.  
Suck back of water into the cylinder must be prevented.  
Do not allow back feed into cylinder.  
Use only properly specified equipment that is suitable for Acetylene, its supply pressure and temperature.  
Keep away from ignition sources (including static discharges).  
Segregate from oxidant gases and other oxidants.  
Keep cylinder below 50.o.C in a well ventilated place.



Acetylene

**7. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Do not smoke while handling product.  
 Ensure adequate ventilation.  
 Wear suitable hand, body and head protection.  
 Wear goggles with suitable filter lenses when used for welding/cutting.

**8. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance/Colour/Odour:	Colourless gas with a garlic like odour.
Molecular Weight:	26
Melting Point:	-80.8°C
Boiling Point:	-84(s)°C
Critical Temperature:	35°C
Relative Density, Gas:	0.9 (Air=1)
Relative Density, Liquid:	Not applicable
Vapour Pressure 20°C:	44 bar
Solubility mg/l water:	1125 mg/l
Auto ignition temperature:	325°C
Flammability Range:	2.4-88 vol% in air
Other Data:	Poor odour warning properties at low concentrations

**9. STABILITY AND REACTIVITY**

Can form explosive mixture with air.  
 May decompose violently at high temperature and/or high pressure or in the presence of a catalyst.  
 Forms explosive acetylides with copper, silver and mercury.  
 Do not use alloys containing more than 70% copper.  
 Dissolved in solvent contained in a porous mass.  
 May react violently with oxidants.

**10. TOXICOLOGICAL INFORMATION**

No toxicological effects from this product.

**11. ECOLOGICAL INFORMATION**

No ecological damage caused by this product.

**12. DISPOSAL CONSIDERATIONS**

Do not discharge into areas where there is a risk of forming an explosive mixture with air.  
 Waste gas should be flared through a suitable burner with flash back arrester.  
 Do not discharge into any place where its accumulation could be dangerous.

**13. TRANSPORT INFORMATION**

UN Number:	1001
Class/Div:	2.1
ADR/RID Item number:	2.9c
Tremcard Number:	813
Groupcard Number:	20g25
Labelling ADR:	Flammable gas.

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or emergency. Before transporting product cylinders, ensure that they are firmly secured, that cylinder valve is closed and not leaking, that there is adequate ventilation and that applicable regulations are complied with.

**14. REGULATORY INFORMATION**

According to EC Directive 67/548, as amended, the product is labelled as follows:

Number in Annex 1 of Dir 67/548:	601-015-00-0
F+	- Extremely flammable
R5/6/12	- Extremely flammable
S9	- Keep cylinder in a well ventilated place
S16	- Keep cylinder away from ignition sources
S33A	- Keep cylinder away from possible static discharge

**15. OTHER INFORMATION**

The information given here is based on the present state of knowledge and describes the product under the aspects of safety. It should not therefore be construed as guaranteeing specific properties.

Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.



# MATERIAL SAFETY DATA SHEET

According to Directive 93/112/EC

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: **OXYGEN**  
 Chemical Composition: **O<sub>2</sub>**  
 Cas No: **07782-44-7**  
 EINECS No: **2319569**  
 Company Name: **Irish Oxygen Co Ltd**  
 Waterfall Road, Cork  
 Phone: **021-541821**

## 2. HAZARDS IDENTIFICATION

Compressed Gas  
 Oxidant. Strongly supports combustion. May react violently with combustible materials.

## 3. FIRST AID MEASURES

Inhalation: Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsion.

## 4. FIRE FIGHTING MEASURES

SPECIFIC HAZARD: Non flammable but supports combustion.  
 Exposure to fire may cause containers to rupture/explode.

HAZARDOUS COMBUSTION PRODUCTS: None.

SUITABLE EXTINGUISHING MEDIA: All known extinguishers can be used.

SPECIFIC METHODS: If possible, stop flow of product.  
 Move container away or cool with water from protected position.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: None.

## 5. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Evacuate area.  
 Ensure adequate air ventilation.  
 Eliminate ignition sources.

ENVIRONMENTAL PRECAUTIONS: Try to stop release.  
 Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

CLEAN UP METHODS: Ventilate area.

## 6. HANDLING AND STORAGE

Use no oil or grease.  
 Open valve slowly to avoid pressure shock.  
 Segregate from other flammable gases and other flammable materials.  
 Suck back of water into the cylinder must be prevented.  
 Do not allow back feed into cylinder.  
 Use only properly specified equipment that is suitable for Oxygen, its supply pressure and temperature.  
 Keep away from ignition sources (including static discharges).  
 Keep cylinder below 50°C in a well ventilated place.

## 7. EXPOSURE CONTROLS/PERSONAL PROTECTION

Do not smoke while handling product.  
 Wear suitable hand, body and head protection.  
 Wear goggles, with suitable filter lenses when used for welding/cutting.  
 Avoid oxygen rich (>21%) atmospheres.  
 Ensure adequate ventilation.

**8. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance/Colour/Odour:	Colourless, odourless gas.
Molecular Weight:	32
Melting Point:	-219°C
Boiling Point:	-183°C
Critical Temperature:	-118°C
Relative Density, Gas:	1.1 (Air=1)
Relative Density, Liquid:	1.1 (Water=1)
Vapour Pressure 20°C:	Not applicable
Solubility mg/l water:	39 mg/l
Auto ignition temperature:	Not applicable
Flammability Range:	Oxidiser
Other Data:	Gas/Vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

**9. STABILITY AND REACTIVITY**

May react violently with combustible materials.  
May react violently with reducing agents.  
Violently oxidises organic material.

**10. TOXICOLOGICAL INFORMATION**

No toxicological effects from this product.

**11. ECOLOGICAL INFORMATION**

No ecological damage caused by this product.

**12. DISPOSAL CONSIDERATIONS**

Vent to atmosphere in a well ventilated place.  
Do not discharge into any place where its accumulation could be dangerous.

**13. TRANSPORT INFORMATION**

UN Number:	1072
Class/Div:	2.2
Subsidiary Risk:	5.1
ADR/RID Item number:	2.1a
ADR/RID Hazard number:	25
Tremcard Number:	842
Labelling ADR:	Non flammable, non toxic gas. Fire intensifying risk.

Avoid transport on vehicles where the load space is not separated from the driver's compartment.  
Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or emergency. Before transporting product cylinders, ensure that they are firmly secured, that cylinder valve is closed and not leaking, that there is adequate ventilation and that applicable regulations are complied with.

**14. REGULATORY INFORMATION**

According to EC Directive 67/546, as amended, the product is labelled as follows:

- O - Non flammable
- R8A - Strongly supports combustion
- S9 - Keep cylinder in a well ventilated place
- S17A - Keep cylinder away from combustible material, use no oil or grease

**15. OTHER INFORMATION**

The information given here is based on the present state of knowledge and describes the product under the aspects of safety. It should not therefore be construed as guaranteeing specific properties.

Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.