UK FUELINE

NATIONAL FUEL SOLUTIONS

UK FUELINE

MATERIAL SAFETY DATA SHEETS

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

PRODUCT NAME: GAS OIL / ULSD

Gas Oils are middle distillate fuels for compression ignition diesel engines (on road automotive vehicles, stationary and marine diesel engines, for off road fuel) and as a fuel for heating boilers and gas turbines.

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2. COMPOSITION/INFORMATION ON INGREDIENTS

PRODUCT DESCRIPTION

Gas oil; is a complex combination of hydrocarbons produced by the distillation of crude oil. It consists of hydrocarbons having carbon numbers predominately in the range of C9 through C20 and boiling in the range of approximately 150^0C to 380^0C.

Alternative names :

DERV
Diesel oil
Ultra Low Sulphur Diesel
Bio-Plus
Undyed gas oil

Hazardous ingredient	%(w/w)*	CAS No.	EINECS No.
Gas Oil:	99.9	068334-30-5	269-822-7

Gas Oil includes low concentrations of process aids (e.g. flow improvers, lubricity enhancers, antistatic agents, markers and dyes and may include renewable material). These additives do not affect the classification of the product (Section 3) as they are not classified as hazardous and/or are below the concentration limits which would affect the classification of the product.

* Concentration is indicative

3. HAZARDS IDENTIFICATION

Gas oil is classified under EU and UK legislation as
Harmful, Category 3 carcinogen, may cause irreversible effects

	CAS No.	Symbol	R Phrase
Gas Oil :	068334-30-5	Xn, Harmful	R40

Gas oil contains significant quantities of polycyclic aromatic hydrocarbons, some of which have been shown to induce skin cancer in animals.

There is a possible risk of irreversible effects.

Injection of fuels under the skin may cause serious injury.

Aspiration of the product into the lungs during ingestion or vomiting may cause severe pulmonary injury.

Gas oil may remove natural greases from the skin resulting in dryness, cracking and dermatitis.

Harmful to the aquatic environment.

Note: The meaning of the symbols and Risk Phrases are given in Section 16, Other Information

4. FIRST-AID MEASURES

Inhalation : Fumes, mists or vapour may cause irritation to the mucous membranes and drowsiness leading to loss of consciousness.
Remove patient to fresh air from exposure.
Obtain medical attention if the symptoms persist.

Skin Contact : Unlikely to cause irritation on single exposure but prolonged or repeated contact may cause dermatitis which could eventually lead to irreversible skin disorders.
Remove contaminated clothing. Wash skin thoroughly with soap and water.
If symptoms (irritation or blistering) occur obtain medical attention.
Injection of fuel through the skin under pressure may have serious effects which at first do not seem serious but become very painful within hours. Any injection of fuel under the skin should be considered as an **emergency and medical advice should be obtained urgently.**

Eye Contact : May cause irritation with short term redness and stinging
Irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain medical attention if redness and/or irritation persists.

Ingestion : Swallowing small amounts is unlikely to have adverse effects but larger amounts may cause irritation, diarrhoea and vomiting.
Wash out mouth with water and give 200-300 ml (half a pint) of water to drink. Obtain medical attention. Do not induce vomiting because of danger of aspiration.
Never give anything by mouth to an unconscious or convulsing person.

<u>Information for medical practitioners</u>

Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting should be avoided. Gastric lavage should only be undertaken after endotracheal intubation. Monitor for cardiac dysrhythmias.

	High pressure Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discoloured and extremely painful with extensive subcutaneous necrosis. Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimise tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.
5.	**FIRE-FIGHTING MEASURES** Gas oil is combustible. Extinguishing Media : Water spray, foam, dry powder or CO_2. **Do not use water jet.** Fire Fighting : Small fires, such as those capable of being fought with a hand-held extinguisher, may be fought by a trained person if it safe to do so. Ensure an escape path is available. A self contained breathing apparatus and adequate protective clothing should be worn in large fire conditions. <u>Products of combustion</u> Apart from hazardous product vapours carbon monoxide, carbon dioxide and soot will be the major hazardous substances produced in a fire.
6.	**ACCIDENTAL RELEASE MEASURES** Any spillage should be regarded as a potential fire risk. In the event of spillage, remove all sources of ignition and ensure good ventilation. Wear suitable protective clothing. (See Exposure Controls/Personal Protection, Section 8) Spilled material may make surfaces slippery. Clean up spilled material immediately. Contain and recover spilled material using suitable inert absorbent material such as earth, sand or suitable proprietary absorbents. It is advised that stocks of suitable absorbent material should be held in quantities sufficient to deal with any spillage which may be reasonably anticipated. Specialist personnel should carry out recovery of large spillages. For large contained spillages the use of suitable foam should be considered to reduce the risk of ignition and to contain the vapour. Before foam is used the environmental consequences (eg increasing the BOD, emulsification of the product) should be considered. If possible, the Evironmental Agency should be consulted before foam is used. Protect drains from potential spills to minimise contamination. Do not wash product into drainage systems. Product vapours are heavier than air and may travel to remote sources of ignition (eg. along drainage systems, in basements, ditches, etc.), and flash-back may occur

	If spillage has occurred in a confined space, use breathing apparatus or ensure adequate ventilation ie check that a safe atmosphere is present (hydrocarbon levels at less than 1% of the lower flammable limit and a minimum of 20% oxygen) before entry. If entry into a confined space is necessary, always have sufficient trained people standing by outside, with appropriate breathing apparatus and equipment to effect a quick rescue. In the case of spillage, particularly into water courses, immediately inform the Environmental Agency (UK tel. 0800 80 70 60). Prevent the spread of product by the use of suitable barrier equipment. Recover product from the surface of the water wherever possible. Recovered material and contaminated package's should be disposed of safely,(See Section 13)
7.	**HANDLING AND STORAGE** **Storage** Design and construction of bulk storage is given in British Standards, by the Institute of Petroleum and HSE publications. Store and dispense only in well-ventilated areas away from heat and sources of ignition. Store and use only on equipment/containers designed for use with this product. Containers must be properly labelled and kept closed when not in use. Empty packages may contain some remaining product. Retain hazard-warning labels on all containers containing product including empty un-cleaned packages as a guide to the safe handling, storage and disposal of empty packaging. Do not enter storage tanks without breathing apparatus unless the tank has been well ventilated and the tank atmosphere has been shown to contain hydrocarbon vapour concentrations of less than 1% of the lower flammability limit and an oxygen concentration of at least 20% volume. Always have sufficient trained people standing by outside the tank with appropriate breathing apparatus and equipment to affect a quick rescue. **Handling Precautions** Handle and store in accordance with the regulations, industry codes and HSE Guidance (eg HSG 51, HSG 176) Avoid inhalation of vapour, mists or fumes generated during use. Avoid contact with skin by use of suitable PPE (eg neoprene) and observe good personal hygiene; wash hands thoroughly after contact. Avoid contact with eyes. If splashing is likely to occur wear a full-face visor or chemical goggles as appropriate. Contaminated clothing should be thoroughly cleaned before re-use. Do not siphon product by mouth. Whilst using do not eat, drink or smoke. Use disposable cloths and dispose of safely when soiled. Do not put soiled cloths into pockets. Take all necessary precautions to avoid accidental spillages and if they do occur contain and clean up immediately.

Fire Prevention

Light hydrocarbon vapours may build up in the headspace of tanks. These can cause flammability/explosion hazards. Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks.

Gas oil will present a flammability hazard if heated above its flash point but bulk liquids at normal storage temperatures will present virtually no fire hazard. If fuel contacts hot surfaces, or leaks from high pressure fuel pipes, the vapour and/or mists generated will create a flammability or explosion hazard. (Note this situation may also create a health hazard)

When the product is pumped (e.g. during filling, discharge of ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure.

Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

Empty containers represent a fire hazard as they may contain some remaining flammable product and vapour. Never cut, weld, solder or braze empty containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

There is no Occupational Exposure Standard for Gas Oil although many of the components of Gas Oil do have occupational exposure standards (OES) in EH40. The OESs of the more volatile components that may be present in gas oil are given below.

Suitable respiratory equipment should be worn if Gas Oil is handled at elevated temperatures, exposure to vapour for extended periods is likely or mists are produced Note: Mineral Oil Mists have a LTEL and STEL of 5mgm^{-1} and 10mgm^{-1}, respectively (see EH40)

Contact with the skin should be avoided by using suitable protective clothing (eg neoprene gloves) and goggles should be worn when handling Gas Oil.

All PPE should be used in accordance with the manufacturer's instructions, inspected regularly and replaced as necessary.

The use of PPE should comply with PPE (EC Directive) Regulations 1992 and the European CEN Standards.

Good personal hygiene measures should be followed and contaminated clothing should be thoroughly cleaned before re-use.

Occupational Exposure Standards for some of the volatile constituents that may be present in Gas Oil

	LTEL (8 hour TWA)		STEL (15 min TWA)		Notes
	Ppm	mg.m^{-3}	ppm	mg.m^{-3}	EH40
Toluene	50	191	150	574	OES, Sk
Ethylbenzene	100	441	125	552	OES, Sk
Xylene	50	220	100	441	OES, Sk

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	liquid
Colour	:	clear straw (may be dyed)
Odour	:	mineral oil-like
pH (Value)	:	Not applicable.
Boiling Point (0^0C)	:	160 - 400
Flash Point (0^0C)	:	>60
Flammable Limits (Lower) (%v/v)	:	0.6
Flammable Limits (Upper) (%v/v)	:	7.5
Auto Ignition Temperature (0^0C)	:	336
Explosive Properties	:	No data.
Oxidising Properties	:	Not oxidising.
Vapour Pressure (Pascals at 15.5^{0}C)	:	100 approx
Density (g/ml) at 15.5^{0}C	:	0.82 - 0.86
Solubility (Water)	:	<0.1%
Partition Coefficient	:	log P n-octanol/water: 3.9 to 6+
Pour Point (0^0C)	:	-3 summer -12 winter
Kinematic Viscosity (cSt at 40^{0}C)	:	1.5 - 5.5

10. STABILITY AND REACTIVITY

Stable under normal conditions.

Hazardous Reactions : Can react violently if in contact with strong oxidising agents.

Hazardous Decomposition Product(s) : None known (See Section 5 for products of combustion).

11. TOXICOLOGICAL INFORMATION

Inhalation : Unlikely to be hazardous by inhalation because of the low vapour pressure of the material at ambient temperatures. High concentrations of mist may be irritating to the upper respiratory tract.
The vapour has anaesthetic properties and when inhaled at high concentrations, it may cause respiratory irritation, headache, fatigue, dizziness and in-coordination.

Skin Contact : Repeated or prolonged skin contact may result in moderate irritation. It will remove the natural greases resulting in dryness, cracking that may give rise to dermatitis.
Unlikely to cause skin sensitisation.
Unlikely to be hazardous by skin absorption. Dermal Median Lethal Dose >4g/Kg(rabbit).
Pressure Injection under the skin can cause severe subcutaneous necrosis (see First Aid Measures, Section 4)

Eye Contact : Practically non-irritant.

Ingestion : Low acute oral toxicity, but minute amounts aspirated into the lungs during ingestion may cause severe pulmonary injury (see First Aid Measures, Section 4).

	Long Term Exposure : Possible risk of irreversible effects. Some gas oils have been found to possess carcinogenic activity in animals following repeated skin application. Severe skin irritation occurred in the animals and this repeated tissue damage may have had an effect on the extent to which skin tumours developed. Personal hygiene measures and PPE use, taken to prevent skin irritation should be adequate to prevent risk of skin cancer.
12.	**ECOLOGICAL INFORMATION** **Environmental Fate and Distribution** Gas oil has moderate volatility. The product is essentially insoluble in water. The product has high potential for bioaccumulation. The product is predicted to have low mobility in soil. **Persistence and Degradation** There is no evidence of hydrolysis in water. The substance, by analogy, is expected to be partially biodegradable in water. **Toxicity** Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment. Films on water may damage aquatic organisms and affect oxygen transfer.
13.	**DISPOSAL CONSIDERATIONS** <u>Disposal</u> Dispose of material in a safe manner via an authorised person/licensed waste disposal contractor in accordance with local/national regulations. Materials contaminated with product should be treated as highly flammable. Follow handling guidance in section 7, mindful of hazards. <u>Remarks</u> None
14.	**TRANSPORT INFORMATION** **SEA** UN No. : 1202 Class : 3 Proper shipping name : GAS OIL or DIESEL FUEL or HEATING OIL IMO, IMDG Class/Packing group : III **Road/rail** UN No : 1202 Proper shipping name : GAS OIL or DIESEL FUEL or HEATING OIL ADR/RID Class/Packing group : III Hazard identification No : 30 Emergency Action Code : 3Z

15.	**REGULATORY INFORMATION** Label Xn, R40 S(2) S36/37 Xn: Harmful R 40: Possible risk of irreversible effects S(2): Keep out of reach of children S36/37: Wear suitable protective clothing and gloves This data sheet was prepared in accordance with . Commission Directive 2001/58/EC and SI 2002 No. 1689 (CHIP 3) References: Approved Supply List (7th Edition) CHIP 3 Approved Code of Practice Approved classification and labelling guide (Stet edition) EH40/2002 and supplement 2003 ADR/RID2003 IMDG code 2002 IATA Dangerous Goods Regulations 2002 Handbook of Chemistry and Physics
16.	**OTHER INFORMATION** **We believe, in good faith and to the best of our knowledge that the preceding information is accurate. However, no guarantee or warranty is given by us in this respect.** **The information provided herein may not be adequate for all individuals and/or all situations. The purchaser/user of the product remains responsible for storing, using or dealing with the product safely and in accordance with all applicable laws and regulations.** **If you have purchased the product for supply to a third party, it is your duty to pass to that third party the information given in this Data Sheet. If the third party is not an employer it is his duty to pass the information, given in this Data Sheet, to the employer of whosoever uses or handles the product.** **To the extent permitted by law, UK Fueline disclaim all liability for loss, damage or injury suffered or incurred as a result of storage, use of or dealing in any product described herein. Save as expressly stated herein, no guarantee, warranty or statement is made in respect of any such product.**