

1. Identification of the substance/preparation and the company

Identification of the substance: **Kerosene**

Company identification: DCC Energy Ltd T/A "Butler Fuels"
County House, Bayshill Road
Cheltenham
Gloucestershire
GL50 3BA
Tel: (01242) 222999
Email: hse-butler@butlerfuels.co.uk

Emergency telephone number: 0800 387671

2. Hazards identification

Human health hazards

The hydrocarbon composition is similar to white spirit to which an exposure limit applies. Normal exposures in the open air do not however present significant health risks provided care is taken to avoid undue exposure to vapours.

Exposure to high vapour concentrations can lead to nausea, headache, drowsiness and dizziness.

Accidental ingestion can lead to chemical burning of the mouth. Ingestion can lead to vomiting and aspiration into the lungs that can result in chemical pneumonitis that can be fatal.

Prolonged and repeated skin contact can lead to defatting of the skin, drying, cracking and dermatitis.

Safety hazards

Kerosene is a flammable liquid which can readily explode in the presence of electrostatic discharges generated for example during pumping or tank cleaning or by other sources of ignition or flame impingement on containers.

Kerosene is classified for transport as a flammable liquid

Environmental hazards

Kerosene will not biodegrade in anaerobic conditions and hence can be persistent. It contains components which have a high potential to bioaccumulate. It is expected to be slightly toxic to fish.

3. Composition/information on ingredients

Kerosene is a preparation manufactured from kerosines derived from crude petroleum, and additives none of which impart any additional hazard to the finished product.

The following components, which have health effects, are present at significant concentrations:

Conc	Component	EINECS	Risk Phrases
<100%	Kerosene	307-033-2	R10: Flammable
	unspecified		R65: Harmful: may cause lung damage if swallowed
			R38: Irritating to skin
			R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

4. First-aid measures

Symptoms and effects

Not expected to give rise to an acute hazard under normal conditions of use. Aspiration into the lungs may occur directly or following ingestion. This may cause chemical pneumonitis that may be fatal. If ingested may lead to irritation of the mouth, irritation of the throat, irritation of the digestive tract and vomiting. Splashes into the eye may cause irritation.

Inhalation

Remove the affected person to fresh air. If breathing but unconscious place in recovery position. If breathing has stopped apply artificial respiration. If heartbeat absent give cardiac massage. Monitor breathing and pulse. Obtain medical assistance immediately.

Skin:

Flush the contaminated skin with water. Use soap if available. Contaminated clothing should be soaked with water, removed and laundered before reuse. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to hospital. Do not wait for symptoms to develop.

Eyes

Flush the eye with copious quantities of water. If irritation persists refer for medical attention.

Ingestion:

DO NOT INDUCE VOMITING. Protect airway if vomiting begins. Give nothing by mouth. If breathing but unconscious, place in recovery position. If breathing has stopped, apply artificial respiration. OBTAIN MEDICAL ATTENTION IMMEDIATELY.

5. Fire-fighting measures

Specific hazards

Combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates (smoke) and gases, including carbon monoxide, oxides of sulphur and unidentified organic and inorganic compounds. Flammable vapours may be present even at temperatures below flashpoint.

Extinguishing media:

Foam, fine water spray and dry chemical powder. Carbon dioxide, sand or earth may be used on small fires only

Unsuitable extinguishing media

Do not use water in a jet.

Protective Equipment

Suitable protective equipment must be worn, this should include breathing apparatus when approaching a fire in a confined space.

Other information

Keep adjacent drums and tanks cool by spraying with water from a safe location. If possible remove them from danger zone. If adequate cooling cannot be achieved, the area needs to be evacuated, and further fire fighting and cooling attempts should be carried out from a safe location.

6. Accidental release measures

Personal precautions

Remove all possible sources of ignition in the surrounding area. Evacuate all personnel. Do not breathe fumes or vapour. Do not operate electrical equipment. Avoid contact with skin, eyes, clothing. Ventilate contaminated area thoroughly. Wear chemical resistant knee length safety boots and PVC jacket and trousers. Wear safety glasses or full face shield if splashes are likely to occur.

Environmental precautions

Prevent from spreading or entering into drains and surface waters (e.g. lakes, ponds, ditches, rivers and streams) by using sand, earth or other appropriate non-combustible barriers. Inform local authorities if impacts cannot be prevented.

Clean-up methods – Small spillages

To minimise soil and groundwater contamination, absorb liquid with sand, earth or other recommended absorbent material as soon as possible. Sweep up and remove to suitable, clearly marked container for disposal in accordance with local regulations. Do not disperse using water or detergent.

Clean-up method – Large Spillages

Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in suitable absorbent. Disposal as for small spillages.

Maritime spillages

Any spillage must be dealt with using a Shipboard Oil Pollution Emergency Plan as required by MARPOL Annex 1, Regulation 26.

Other information

Local authorities should be advised if significant spillages cannot be contained. Observe all relevant local regulations. Advice may be obtained from Environment Agency: 0800 80 70 60 (24hr Emergency No.)

7. Handling and storage

Exposure in normal use

Maintenance and fuelling activities: Avoid inhalation of vapours and contact with skin during transfer and when emptying containers.

Handling

Avoid naked flames, The vapour is heavier than air, spreads along the ground and distant ignition is possible. When using do not eat, drink or smoke. Never siphon by mouth. Only use in well-ventilated areas. Take precautionary measures against static discharges. Ensure all equipment is properly earthed. If using pressurized equipment take extra care to avoid injection under the skin.

Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Avoid prolonged or repeated contact with skin. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.

Storage

Prevent spillages. Cloth, paper and other materials that are used to absorb spills present a fire hazard. Avoid their accumulation by disposing of them safely and immediately. In addition to any specific recommendations given for control of risks to health, safety and the environment, an assessment of risks must be made to help determine controls appropriate to local circumstances. Exposure to this product should be reduced as low as reasonably practicable. Reference should be made to the Health and Safety Executive's publication 'COSHH Essentials'.

This product must never be stored in buildings occupied by people. Drums and small containers should be stored in well-ventilated areas, flameproof cabinets or stores. Keep container tightly closed in a dry well ventilated place away from direct sunlight and other sources of heat and ignition. Keep in a bunded area with a sealed floor to provide containment against spillage. Stack drums to a height not exceeding three metres without the use of racking. Locate tanks away from heat and other sources of ignition. Seek specialist advice for the design, construction and operation of bulk storage facilities.

Storage temperatures

Ambient

Product transfer

Electrostatic charges may be generated during pumping. Ensure electrical continuity by bonding all equipment. Avoid splash filling. Wait 2 minutes after tank filling (for tanks such as those on road tanker vehicles) before opening hatches or manholes. Wait 30 minutes after tank filling (for large storage tanks) before opening hatches or manholes. Contamination resulting from product transfer may give rise to light hydrocarbon vapour in the headspace of tanks that have previously contained gasoline. This vapour may explode if there is a source of ignition. Partly filled containers present a greater hazard than those that are full, therefore handling, transfer and sampling activities need special care.

Tank cleaning

Cleaning, inspection and maintenance of storage tanks is a specialist operation that requires the implementation of strict procedures and precautions. These include issue of work permits, gas-freeing of tanks, using a manned safety harness, lifelines and wearing air-supplied breathing apparatus. Prior to entry and while cleaning is underway, the atmosphere within the tank must be monitored using an oxygen meter and explosimeter. Additional precautions are required where the tank may have previously contained leaded gasoline.

Recommended materials

For containers or container linings use mild steel or stainless steel, aluminium may also be used for applications where it does not present an unnecessary fire hazard. Examples of suitable materials are: high density polyethylene (HDPE), polypropylene (PP), and Viton (FKM) which have specifically tested for compatibility with the product. For container linings, use amine-adduct cured epoxy paint. For seals and gaskets use: graphite, PTFE, Viton A, Viton B.

Unsuitable materials

Synthetic materials such as plastics and fiberglass may be unsuitable for containers or container linings depending on the material specification and intended use. Examples of materials to avoid are: natural rubber (NR), nitrile rubber (NBR), ethylene propylene rubber (EPDM), polymethyl methacrylate (PMMA), polystyrene, polyvinyl chloride (PVC), polyisobutylene. However some may be suitable for glove materials.

Other information

Ensure that all local and international regulations regarding handling and storage facilities are followed.

8. Exposure controls and personal protection

Workplace Exposure limits:

No workplace exposure limit established in EH40 for this product.

Other exposure information

In the absence of a workplace exposure limit, the following exposure limits taken from EH40 are recommended

8hr TWA value – 500mg/m³

Exposure controls

The level of personal protection and the types of control necessary will vary depending on exposure conditions. Select controls based on risk assessment of local circumstances. Use sealed systems as far as possible. Use local, intrinsically safe, exhaust ventilation if there is a risk of inhalation of vapours, mists or aerosols. Provide eye washes and showers for emergency use.

Respiratory protection

Care should be taken to keep exposures below applicable occupational exposure limits. If this cannot be achieved, use of a respirator fitted with an organic vapour cartridge combined with a particulate pre-filter should be considered. Where air-filtered respirators are unsuitable (e.g. where airborne concentrations are high, there is a confined space or a risk of oxygen deficiency) use appropriate positive pressure breathing apparatus.

Hand protection

Select gloves tested to a relevant standard (EN374). When prolonged or frequent repeated contact occurs, nitrile, neoprene or PVC gloves may be suitable (Breakthrough time >240mins). Breakthrough time for gloves vary depending on, e.g. chemical resistance, material thickness, frequency and duration of contact. Selection should also take into account other usage requirements e.g. dexterity, heat resistance, other chemical substances handled. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly.

Eye protection

Wear safety glasses or full-face shield if splashes are likely to occur.

Body protection

Minimise all forms of skin contact. In the event of risk from splashing wear e.g. nitrile, PVC or neoprene rubber apron. Wear safety shoes or boots that are chemical and petroleum distillate resistant.

Environmental exposure controls

Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

Exposure measurement methods

Monitoring of the concentration of substances in the breathing zones of workers or in the general workplace may be required to confirm compliance with Occupational Exposure Limit and adequacy of exposure controls.

9. Physical and chemical properties

Physical State:	Liquid	Flashpoint::	>38°C
Appearance:	Clear/straw coloured	Flammable Limits - Upper	5% vol.
Odour:	Characteristic	Flammable Limits - Lower	0.7% vol.
Initial Boiling pt:	~130°C	Autoflammability:	~220°C
Final boiling pt:	~300°C	Kinematic Viscosity	1 to 2 cSt
Solubility in water	Negligible	Vapour Density (Air =1)	> 5
Density	770 to 810kg/m ³ at 15°C	Partition Coefficient, n-octanol water:	3 to >6

The above are typical values

10. Stability and reactivity

Stability

Stable under normal conditions of use

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Strong oxidising agents, e.g. chlorates and ammonium nitrate which may be used in agriculture.

Hazardous decomposition products

Hazardous decomposition products are not expected to form during normal storage.

11. Toxicological information

Acute health hazards

Kerosene is classified as harmful owing to aspiration hazard and as skin irritant

Exposure to high vapour concentrations can lead to nausea, headache, drowsiness and dizziness

If the product is accidentally ingested, irritation to the gastric mucous membranes can lead to vomiting. If this occurs, there is a high probability of the product being aspirated into lungs, which can lead to chemical pneumonitis.

Chronic health hazards

Prolonged and repeated contact with kerosene can be detrimental to health. The main hazards arise from skin contact and the inhalation of mists. Skin contact over prolonged periods can lead to defatting of the skin, drying, cracking and possible dermatitis. Excessive and prolonged inhalation of mists may cause a chronic inflammatory reaction of the lungs and a form of pulmonary fibrosis.

Other information

High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

12. Ecological information

Kerosene is classified as toxic to aquatic organisms / may cause long-term adverse effects in the aquatic environment.

Air

Kerosene is a mixture of volatile components which when released to air will react rapidly with hydroxyl radicals and ozone.

Water

If released to water, the majority of kerosene will evaporate at a moderate rate but a small proportion will dissolve. Dissolved components will be either absorbed in sediments or evaporate to air. In aerobic water and sediments they will biodegrade, but in anaerobic conditions they will persist. Kerosene contains components which have a high potential to bioaccumulate, but is unlikely to persist in the aquatic environment for sufficient time to pose significant hazards.

Soil

Small volumes released on land will evaporate at a moderate rate, with a proportion of the product being absorbed in the upper soil layers and being subject to biodegradation. Larger volumes may penetrate into anaerobic layers in which the product will persist. The product may reach the water table on which it will form a floating layer and move along with the groundwater flow. In this case the more soluble components, such as aromatics, will cause groundwater contamination.

13. Disposal considerations

Waste disposal

A recognised collector or contractor should dispose of waste arising from a spillage or tank cleaning in accordance with prevailing regulations. The competence of the collector or contractor to deal satisfactorily with this type of product should be established beforehand. Do not dispose of into the environment, in drains or in watercourses. Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination.

Product disposal

As for waste disposal

Container disposal

Recycle or dispose of in accordance with the legislation in force with a recognised collector or contractor. Do not pollute the soil, water or environment with the waste product.

Local legislation

Hazardous Waste (England and Wales) Regulations 2005.

14. Transport information

UN Number:	1223	Hazchem Code:	3Y
Proper Shipping Name:	KEROSENE	Class:	3
Symbol:	Flammable Liquid	Marine pollutant:	No
Packing Group:	III	Tunnel code	D/E

MARPOL rules apply for bulk shipments by sea

15. Regulatory information

This product has been classified according to the requirements of the Chemicals (Hazard Information and Packaging for Supply) Regulations.

Symbols:



Xn - Harmful



N - Dangerous
for the
environment

Classification: Flammable
Harmful
Dangerous for the environment

Product Safety Data Sheet

Risk Phrases:

- R10 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

Safety Phrases:

- S2 Keep out of the reach of children
- S23 Do not breathe vapour
- S24 Avoid contact with skin
- S29 Do not empty into drains
- S36/37 Wear suitable protective clothing and gloves
- S43 In case of fire use foam/dry powder/AFFF/carbon dioxide – NEVER USE WATER
- S61 Avoid release to the environment. Refer to special instructions / safety data sheets
- S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this label or container

Packaging and labelling

Contains Kerosine unspecified

16. Other information

Recommended use

Kerosene is used as a fuel for domestic and small industrial oil-fired boilers for space heating applications.

This safety data sheet contains important information to ensure the safe storage, handling and use of this product, it does not however constitute an assessment of workplace risks.

Users are advised to refer to relevant legislation, approved codes of practice and guidance available from the Health & Safety Executive (*website: <http://www.hse.gov.uk>*) and to the IP Codes of Practice available from the Energy Institute (*website: <http://www.energyinst.org.uk>*)

Further information

The above information is based on our current knowledge of the product. The purpose of this data sheet is to describe the product in terms of its safety and environmental requirements. It is the user's responsibility to satisfy themselves as to the application of this information and/or recommendations for their own use.