

Contact Sheet



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1. PRODUCT IDENTIFICATION

1.1	Product Name	Enzyme Energy®
1.2	Trade Name	Enzyme Energy® Enzyme Fuel Treatment
1.3	Product User	Fuel additive
1.4	Chemical Composition	Mixture of Kerosene streams with small quantities of bio-enzymes
1.5	Hazardous Component	Kerosene - unspecified, Xn, R10, R22, R38, R52/53
1.6	Company Name	Enzyme Energy Ltd
1.7	Company Address	Unit 7 Shamrock Quay, Williams Street, Southampton, SO14 5QL
1.8	Business telephone	+44 (0)1983 615289
1.9	Emergency telephone	+44 (0)1983 615289

2. HAZARDOUS IDENTIFICATION

2.1	Hazard Identification: Flammable liquid						
2.2	Routes of Entry	Inhalation:	YES	Absorption:	YES	Ingestion:	YES
2.3	Effects of Exposure: <u>EYES:</u> May cause irritation, redness and tearing. Vapours may be irritating to the eyes. <u>SKIN:</u> May cause irritation, defatting, drying and cracking of skin. Prolonged and repeated contact may lead to dermatitis. <u>INGESTION:</u> May cause a burning sensation of the mouth and throat, abdominal pain, gastrointestinal irritation, nausea, vomiting and diarrhoea. May also cause kidney damage, cardiac arrhythmia and Central Nervous System effects (see inhalation). Aspiration of material into the lungs may cause chemical pneumonitis, which can be fatal. Can be fatal if inhaled or ingested. <u>INHALATION:</u> Vapours may be irritating to nose, throat and respiratory tract. Excessive inhalation of vapours may cause kidney damage, cardiac arrhythmia and Central Nervous System effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness.						
2.4	Symptoms of Exposure: <u>EYES:</u> Irritation, redness, swelling and tearing. <u>SKIN:</u> Irritation, defatting, drying and cracking of skin. <u>INGESTION:</u> Burning sensation of the mouth and throat, abdominal pain, gastrointestinal irritation, nausea, vomiting and diarrhoea. <u>INHALATION:</u> Irritation to nose, throat and respiratory tract, dizziness, coughing, wheezing, weakness, fatigue, nausea, headache and possible unconsciousness						
2.5	Acute Health Effects: <u>EYES:</u> May cause irritation, redness and tearing. Vapours may be irritating to the eyes. Risk of conjunctivitis <u>SKIN:</u> May cause irritation, defatting, drying and cracking of skin. Prolonged and repeated contact may lead to dermatitis. <u>INGESTION:</u> May cause a burning sensation of the mouth and throat, abdominal pain, gastrointestinal irritation, nausea, vomiting and diarrhoea. May also cause kidney damage, cardiac arrhythmia and Central Nervous System effects (see inhalation). Aspiration of material into the lungs may cause chemical pneumonitis, which can be fatal. <u>INHALATION:</u> Vapours may be irritating to nose, throat and respiratory tract. Excessive inhalation of vapours may cause kidney damage, cardiac arrhythmia and Central Nervous System effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness.						
2.6	Chronic Health Effects: Prolonged or repeated skin contact may lead to dermatitis.						
2.7	Target Organs: None reported by the manufacturer.						

NA = Not Available; ND = Not Determined; NE = Not Established; C = Ceiling Limit.

See Section 16 for Additional Definitions of Terms Used.

3. COMPOSITION & INGREDIENT INFORMATION

CHEMICAL NAME(S)	CAS No	RTECS No	EINECS No	%	EXPOSURE UNITS IN AIR					
					ACGIH mg/m3		OSHA-ppm			OTHER
					TLV	STEL	PEL	STEL	IDLH	
KEROSENE LOW ODOUR	8008-20-6	OA5500000	232-366-4	80	NE	NE	500	NE	NE	
ISOPROPYL ALCOHOL	67-63-0	NT8050000	200-661-7	15	NE	NE	400	NE	NE	
PROPRIETARY ORGANIC COMPOUNDS	NA	NA	NA	5	NA	NA	NA	NA	NA	

4. FIRST AID MEASURES

4.1	<p>First aid</p> <p>EYES: Immediately flush eyes with plenty of running water for at least 15 minutes, lifting upper and lower lids, occasionally. If irritation persists, repeat flushing. Get medical attention.</p> <p>SKIN: Wash thoroughly with soap and water. If irritation persists, seek medical attention. Remove contaminated clothing and wash before reuse.</p> <p>INGESTION: Do not induce vomiting. Have conscious person rinse out mouth with water, then drink 1 or 2 glasses of water. Never give an unconscious person anything to ingest. If vomiting spontaneously occurs, have victim lean forward with head down to avoid breathing in the vomitus (vapours from vomit) into the lungs. Rinse out mouth and administer more water. Guard against aspiration into the lungs. Aspiration of material into lungs due to vomiting may cause chemical pneumonitis which can be fatal. Get immediate medical attention.</p> <p>INHALATION: Remove affected person to fresh air. If breathing is difficult, administer oxygen. If breathing stops give artificial respiration. Keep person warm, quiet and get medical attention.</p>
4.2	<p>Medical Conditions Aggravated by Exposure</p> <p>None reported by the manufacturer</p>

5. FIRE FIGHTING MEASURES

5.1	<p>Flashpoint</p> <p>36°C (96.8°F) Closed cup</p>					
5.2	<p>Auto ignition Temperature:</p> <p>228°C (442°F)</p>					
5.3	<table border="1"> <tr> <td>Flammability Limits:</td> <td>Lower Explosive Limit (LEL):</td> <td>0.9</td> <td>Upper Explosive Limit (UEL):</td> <td>6</td> </tr> </table>	Flammability Limits:	Lower Explosive Limit (LEL):	0.9	Upper Explosive Limit (UEL):	6
Flammability Limits:	Lower Explosive Limit (LEL):	0.9	Upper Explosive Limit (UEL):	6		
5.4	<p>Fire & Explosion Hazards:</p> <p>This material can burn but will not readily ignite and will release vapours when heated above the flash point.</p>					
5.5	<p>Extinguishing Methods:</p> <p>Dry chemical, foam, carbon dioxide, and water fog.</p>					
5.6	<p>Fire fighting Procedures:</p> <p>For major fires call the Fire Service. Ensure an escape path is always available from any fire. There is a danger of flashback if sparks or hot surfaces ignite vapour. Use foam, dry powder, AAAF, CO₂. DO NOT USE water jets. Avoid spraying directly into storage containers because of danger of boil over. FIRES IN CONFINED SPACES SHOULD BE DEALT WITH BY TRAINED PERSONNEL WEARING APPROVED BREATHING APPARATUS. Water may be used to cool nearby heat exposed areas / objects / packages.</p>					

6. ACCIDENTAL RELEASE MEASURES

 6.1 **Spills:**

Small Spills: Absorb onto vermiculite, floor sweep or other absorbent material. Place into containers for disposal.

Large Spills: Eliminate all ignition sources (e.g., flares, flames, pilot lights, electrical sparks). Persons not wearing protective equipment streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Pump or vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated soil, absorbent and other materials to containers for disposal. Per good environmental practices, prevent run-off to sewers, streams and other bodies of water. Stop the spill at its source. Cover sewer grates and dike the spill. Absorb spilled material onto absorbents. Shovel absorbed material into containers for disposal. Close container tightly and dispose of properly.

7. HANDLING AND STORAGE INFORMATION

 7.1 **Work & Hygiene Practices:**

Wear gloves, glasses and self-contained mask. Warn about risk of vapour inhalation. Wash hands with water and soap immediately after handling then rinse in case of contact. When using, do not eat, drink or smoke.

 7.2 **Storage & Handling:**

Use and keep away from flame, heat sources and functioning electrical devices. Use in a well ventilated area. Store in original packaging. Keep out of reach of children. Do not store in temperatures above 50°C. Keep out of direct sunlight. Do not store near strong oxidising agents.

 7.3 **Special Precautions:**

Do not spray on a naked flame or any incandescent material. When using do not smoke. Avoid breathing vapours or spray mists. Avoid any contact.

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

 8.1 **Ventilation & Engineering Controls:**

Avoid breathing the vapours generated by this product. Use in a well-ventilated location (e.g., local exhaust ventilation, fans). Do not eat, drink, or smoke while handling this product. Ensure that safety shower, hand washing sink and eye bath are near work area

 8.2 **Respiratory Protection:**

Use respiratory protection and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU), or the Canadian CAS Standard Z94.4-93 and applicable standards of Canadian Provinces, or Australia.

 8.3 **Eye Protection:**

Safety glasses with side-shields conforming to EN166 (EU)

 8.4 **Hand Protection:**

Solvent resistant or other impervious gloves. EU Directive 89/686/EEC and the standard EN 374

 8.5 **Body Protection:**

Wear protective clothing (e.g., apron) Wear boots, clothing with long sleeves, etc. as appropriate

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1	Density @ 15°C	820 kg/m ³
9.2	Boiling Point	150-300°C
9.3	Flash Point Closed	> 36°C
9.4	Evaporation Rate	< 0.10 (n-butyl acetate = 1.0)
9.5	Vapour pressure	0.10 mm Hg @ 20 °C
9.6	Explosion Limits	0.6 - 6.5 %
9.7	Appearance & Colour	Colourless transparent liquid.
9.8	Odour	Kerosene like
9.9	Solubility	0.02 g/L
9.10	Partition Coefficient	> 3 Log ¹⁰ Pow (n-octanol / water)
9.11	Viscosity	1.8 cSt @ 40 °C
9.12	Other Information	Vapour Density > 5.0 (air = 1.0); 804.0 g/L

10. STABILITY & REACTIVITY

10.1	Stability	This product is chemically stable under normal conditions of storage and use.
10.2	Hazardous Decomposition Products	Fumes, smoke, carbon monoxide, and trace hydrocarbons.
10.3	Hazardous Polymerisation	Will not occur.
10.4	Conditions to avoid	Do not exposure this product to temperatures above 140°C.
10.5	Incompatible Substances	Strong oxidising agents.

TOXICOLOGICAL INFORMATION

11.1	Toxicity Data	Toxic fumes may be evolved on burning or exposure to heat
11.2	Acute Toxicity	None reported by the manufacturer
11.3	Chronic Toxicity	None reported by the manufacturer
11.4	Suspected Carcinogen	No
11.5	Reproductive Toxicity	
	Mutagenicity	This product is not reported to cause mutagenic effects in humans.
	Embryotoxicity	This product is not reported to cause embryotoxic effects in humans.
	Teratogenicity	This product is not reported to cause teratogenic effects in humans.
11.6	Irritancy of the Product	See section 3.3
11.7	Biological Exposure Indices	NA
11.8	Physician Recommendations	Treat symptomatically

12. ENVIRONMENTAL INFORMATION

12.1	Environmental Stability: Analysis for ecological effects has not been conducted on this product. This product is inherently biodegradable, and there is no evidence to suggest bioaccumulations will occur. However, if spilled, this product may penetrate the soil causing ground water contamination this may be harmful to human, animal, and aquatic life. Also, the coating action associated with petroleum and kerosene products can be harmful or fatal to aquatic life and waterfowl.
12.2	Effect on Plants & Animals: An environmental fate analysis has not been conducted on this specific product. However, plants and animals may experience harmful or fatal effects when coated with petroleum-based products.
12.3	Effect on Aquatic Life: Kerosene will normally float on water. In stagnant or slow-flowing waterways, an oil layer can cover a large surface area. As a result, this oil layer might limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway can result in a loss of marine life or create an anaerobic environment.



13. DISPOSAL CONSIDERATIONS

13.1	Dispose of via an authorised person / licensed waste disposal contractor in accordance with local regulations
13.2	Dispose of product and container carefully and responsibly. Do not dispose of near ponds, ditches, down drains or on to soil
13.3	Empty packages may contain some remaining product. Hazard warning labels are a guide to the safe handling of empty packaging should not be removed

14. TRANSPORT INFORMATION

14.1	ADR/RID Hydrocarbon Liquid, Flammable Liquid Class 3, Item 31(c), Hazard Identification 30
14.2	IATA/ICAO: Container Type UN 3H1/ 1.9/320/08/J/HK/KJK, Packing Instruction Y344,355,366 Kerosene, Flammable Liquid Class 3, Packing Group III
14.3	UN. KEROSENE: Flammable Liquid Class 3, UN Number 1223 Packing Group III
14.4	EMERGENCY ACTION CODE Flammable Liquid, 3 (Y)

15 REGULATORY INFORMATION

15.1	EC Labelling:	
	FLAMMABLE	
	HARMFUL	
	CONTAINS KEROSENE	Unspecified
	R10	Flammable
	R22	Harmful if swallowed
	R38	Irritating to skin
	S2	Keep out of reach of children
	S23	Do not breathe vapour
	S24	Avoid contact with skin
	S43	In case of fire, use foam, dry powder, AAF, CO ₂ - NEVER USE WATER
	S62	If swallowed, do not induce vomiting, seek medical advice immediately, show this container or label
		label
	OTHER	Keep container in a well-ventilated place. Keep away from sources of ignition - No smoking

16 OTHER INFORMATION

Legislation and other sources, which have been used in the compilation of this safety data sheet, include:	
16.1	General ACOP Control of substances hazardous to health
16.2	Carcinogens ACOP Control of Carcinogenic Substances
16.3	HSE ref: L5 Approved codes of practice
16.4	HSE ref: EH40 Occupational exposure limits
16.5	HSE ref.: HS(G) 51 The storage of flammable liquids in containers
16.6	In circumstances where product is to be used outside the jurisdiction of the United Kingdom, such usage must be in conformity with the foregoing or national standards, whichever are more stringent. This product is supplied on the understanding that it will be used in the manner and for the purpose specified in the product data sheet, the user/carrier having taken all precautions stipulated. Failure to follow such directions may adversely affect any rights that the user/carrier might have against the company.
16.7	Before application other than as directed, advice must be obtained from the company.
16.8	Prepared For Enzyme Energy Ltd Unit 7 Shamrock Quay, Williams Street, Southampton, SO14 5QL United Kingdom