

## FULLY SYNTHETIC COMPRESSOR OIL FSO1, FSO1S, FSO5

### 1. SUPPLIER

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### 2. APPLICATION

FULLY SYNTHETIC COMPRESSOR OIL

### 3. COMPOSITION/INFORMATION OF INGREDIENTS

CHEMICAL COMPOSITION  
INGREDIENT

INGREDIENT	% CONC.	CLASSIFICATION	CAS
Trimethylolpropane Tricaprylate/caprate	<5%	None	1138-60-6
Polymerised fatty acid	>80%	None	

### 4. HAZARD IDENTIFICATION

#### Hazardous Components

No specific hazards under normal use conditions. Prolonged or repeated exposure may give rise to dermatitis. Used oil may contain harmful impurities.

### 5. FIRST AID MEASURES

**Symptoms and Effects:** Not expected to give rise to an acute hazard under normal conditions of use.

**Ingestion:** Wash out mouth with water and obtain medical attention. Do not induce vomiting.

**Eyes:** Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.

**Skin:** Remove contaminated clothing and wash affected skin with soap and water. If persistent irritation occurs, obtain medical attention. 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 a hospital. Do not wait for symptoms to develop.

**Inhalation:** In the unlikely event of dizziness or nausea, remove casualty to fresh air. If symptoms persist, obtain medical attention.

**Medical Advice:** Treat symptomatically. Aspiration into the lungs may result in chemical pneumonitis. Dermatitis may result from prolonged or repeated exposure. High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

### 6. FIRE-FIGHTING MEASURES

**Specific Hazards:** Combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide and unidentified organic and inorganic compounds.

**Extinguishing Media:** Foam and dry chemical powder. Carbon dioxide, sand or earth may be used for small fires only.

**Unsuitable Extinguishing Media:** Water in jet. Use of halon extinguishers should be avoided for environmental reasons.

**Protective Equipment:** Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

### 7. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Avoid contact with skin and eyes. Wear PVC, Neoprene or nitrile rubber gloves. Wear rubber 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, ditches or rivers by using sand, earth, or other appropriate barriers. Inform local authorities if this cannot be prevented.

**Clean Up Methods - Small Spillages:** Absorb liquid with sand or earth. Sweep up and remove to a suitable, clearly marked container for disposal in accordance with local regulations.

**Clean Up Methods - Large Spillages:** Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Dispose of as for small spills.

### 8. STORAGE AND HANDLING

**Handling:** 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. 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 controls 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'.

**Storage:** Keep in a cool, dry, well-ventilated place. Use properly labelled and closeable containers. Avoid direct sunlight, heat sources, and strong oxidizing agents. The storage of this product may be subject to the Control of Pollution (Oil Storage) (England) Regulations. Further guidance may be obtained from the local environmental agency office.

**Storage Temperatures:** 0°C Minimum. 50°C Maximum.

**Recommended Materials:** For containers or container linings, use mild steel or high density polyethylene.

**Unsuitable Materials:** For containers or container linings, avoid PVC.

**Other Information:** Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

## 9. EXPOSURE CONTROLS/PERSONAL PROTECTION

Substance	Regulations	Exposure Duration	Exposure Limit	Units
Oil mist, treat as mineral	EH 40 2005	TWA 5 mg/m <sup>3</sup>		
	STEL 10 mg/m <sup>3</sup>			

**Exposure Controls:** The use of personal protective equipment is only one aspect of an integrated approach to the Control Of Substances Hazardous to Health. The management of Health and Safety at Work Regulations 1992 require employers to identify and evaluate the risks to health and to implement appropriate measures to eliminate or minimise those risks. The choice of personal protective equipment is highly dependent upon local conditions, e.g. exposure to other chemical substances and micro-organisms, thermal hazards (protection from extremes of cold and heat), electrical hazards, mechanical hazards and appropriate degree of manual dexterity required to undertake an activity. Whilst the content of this section may inform the choice of personal protective equipment used, the limitations of any information which can be provided must be fully understood, e.g. personal protective equipment chosen to protect employees from occasional splashes may be entirely inadequate for activities involving partial or complete immersion. If the levels of oil mist or vapour in air are likely to exceed the occupational exposure standards then consideration should be given to the use of local exhaust ventilation to reduce personal exposure.

The choice of personal protective equipment should only be undertaken in the light of a full risk assessment by a suitably qualified competent person (e.g. a professionally qualified occupational hygienist). Effective protection is only achieved by correctly fitting and well maintained equipment and employers should ensure that appropriate training is given. All personal protective equipment should be regularly inspected and replaced if defective. Reference should be made to HSE's publication Methods for the Determination of Hazardous Substances (MDHS) 84 - Measurement of oil mist from mineral oil-based metalworking fluids. Measurement of an employee's exposure to oil vapour may be supplemented through the use of stain tubes. In the first instance, further guidance may be obtained through HSE's publication 'COSHH - a brief guide to the regulations' (INDG 136(rev1)).

**Respiratory Protection:** At standard temperature and pressure, the Occupational Exposure Standard for oil vapour is unlikely to be exceeded. 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. Half masks (EN 149) or valved half masks (EN 405) in combination with type A2 (EN 141) and P2/3 (EN 143) pre-filters may be considered.

**Eye Protection:** Goggles conforming to a minimum standard of EN 166 345B should be considered if there is a possibility of eye contact with the product through splashing. Higher rated eye protection must be considered for highly hazardous operations or work areas. For example, employees involved in metalworking operations such as chipping, grinding or cutting may require additional protection to avert injury from fast moving particles or broken tools.

**Body Protection:** Minimise all forms of skin contact. Overalls and shoes with oil resistant soles should be worn. Launder overalls and undergarments regularly.

**Hand Protection:** Chemical protective gloves are made from a wide range of materials, but there is no single glove material (or combination of materials) which gives unlimited resistance to any individual or combination of substances or preparations. The extent of the breakthrough time will be affected by a combination of factors which include permeation, penetration, degradation, use pattern (full immersion, occasional contacts) and how the glove is stored when not in use.

Theoretical maximum levels of protection are seldom achieved in practice and the actual level of protection can be difficult to assess. Effective breakthrough time should be used with care and a margin of safety should be applied. HSE guidance on protective gloves recommends a 75% safety factor to be applied to any figures obtained in a laboratory test. Nitrile gloves may offer relatively long breakthrough times and slow permeation rates. Test data, e.g. breakthrough data obtained through test standard EN374-3:1994 are available from reputable equipment suppliers. 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. A non perfumed moisturiser should be applied.

**Environmental Exposure Controls:** Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

## 10. PHYSICAL & CHEMICAL PROPERTIES

(Please note: These properties are for guidance only. They do not constitute a specification)

### Typical Values

	Test Method:	Units:	
<b>Physical state:</b>			Liquid
<b>Colour:</b>			Red
<b>Odour:</b>			Perceptible
<b>Density @ 20°C:</b>	ASTM D 1298	kg/m <sup>3</sup>	0.911
<b>Kinematic viscosity @ 40°C:</b>	ASTM D 445	mm <sup>2</sup> /s	96.1
<b>Flash point (COC):</b>	ASTM D 92	°C	>200

## 11. STABILITY & REACTIVITY

**Stability:** Stable

**Conditions to Avoid:** Extremes of temperature and direct sunlight.

**Materials to Avoid:** Strong oxidizing agents.

**Hazardous Decomposition Products:** Hazardous decomposition products are not expected to form during normal storage.

## 12. TOXICOLOGICAL INFORMATION

The following toxicological assessment is based on a knowledge of the toxicity of the product's components :-

**Basis for Assessment:** Toxicological data have not been determined specifically for this product. Information given is based on knowledge of the components and the toxicology of similar products.

**Acute Toxicity - Oral:** LD50 expected to be > 2000 mg/kg.

**Acute Toxicity - Dermal:** LD50 expected to be > 2000 mg/kg.

**Acute Toxicity - Inhalation:** Not considered to be an inhalation hazard under normal conditions of use.

**Eye Irritation:** Expected to be slightly irritating.

**Skin Irritation:** Expected to be slightly irritating.

**Respiratory Irritation:** If mists are inhaled, slight irritation of the respiratory tract may occur.

**Skin Sensitisation:** Not expected to be a skin sensitiser.

**Carcinogenicity:** Components are not known to be associated with carcinogenic effects.

**Mutagenicity:** Not considered to be a mutagenic hazard.

**Reproductive Toxicity:** Not considered to be toxic to reproduction.

**Other Information:** Prolonged and/or repeated contact with products containing mineral oils may result in defatting of the skin, particularly at elevated temperatures. This may lead to irritation and possibly dermatitis, especially under conditions of poor personal hygiene. Skin contact should be minimised. High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed. Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal. ALL used oil should be handled with caution and skin contact avoided as far as possible.

## 13. ECOLOGICAL INFORMATION

**Basis for Assessment:** Ecotoxicological data have not been determined specifically for this product. Information given is based on knowledge of the components and the ecotoxicology of similar products.

**Mobility:** Liquid under most environmental conditions. Floats on water. If it enters soil, it will absorb to soil particles and will not be mobile.

**Persistence / Degradability:** Not expected to be readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.

**Bioaccumulation:** Contains components with the potential to bioaccumulate.

**Ecotoxicity:** Poorly soluble mixture. May cause physical fouling of aquatic organisms. Product is expected to be practically non-toxic to aquatic organisms, LL/EL50 >100 mg/l. (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

**Other Adverse Effects:** Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential. Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities.

## 14. DISPOSAL CONSIDERATIONS

**Waste Disposal:** Recycle or dispose of in accordance with prevailing regulations, by a recognised collector or contractor. The competence of the contractor to deal satisfactorily with this type of product should be established beforehand. Do not pollute the soil, water or environment with the waste product.

**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 - see waste disposal.

## 15. TRANSPORT INFORMATION

Not classified as hazardous for transport (ADR, RID, UN, IMO, IATA/ICAO).

## 16. REGULATORY INFORMATION

Not classified as hazardous for supply. No Statutory label required.

## 17. OTHER INFORMATION

This data sheet and the health, safety and environmental information it contains is considered to be accurate as of the date specified below. We have reviewed any information contained herein which we received from sources outside of the Company. However, no warranty or representation, express or implied is made as to the accuracy or completeness of the data and information contained in this data sheet.

Health and safety precautions and environmental advice noted in this data sheet may not be accurate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. No statement made in this data sheet shall be construed as a permission, recommendation or authorisation given or implied to practise any patented invention without a valid licence.

The Company shall not be responsible for any damage or injury resulting from abnormal use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material.