MATERIAL SAFETY DATA SHEET
FERODO BRAKE FLUID

1 IDENTIFICATION

1.1 Product Name:

FERODO LHM

1.2 Supplier:

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2. COMPOSTION/INFORMATION ON INGREDIENTS

2.1 General - Blend of highly refined mineral oils, anti-wear/lubricity additives, and viscosity index improver.

2.2 Hazardous Ingredients:

Hazardous Ingredients	Einecs/ Eilincs No	CAS Number	Concen-tration %	Hazard Classi-fication	Risk Phrases
Mineral Oil Hydrotreated (IP346 DMSO Extract<3%)	649-482-00	72623-86-0	60-100	Xn	R65
Hydrotreated light distillate	649-221-00	64742-46-7	10-30	Xn	R65
Sterically hindered phenol	-	-	0.1-1.0	N	R51/53
Dithiophosphoric acid ester	-	-	0.1-1.0	N	R51/53

3. HAZARDS IDENTIFICTION

This product is not classified as hazardous under current EU legislation.

3.1 Physical Hazards - Not Significant.

3.2 Health Hazards - May cause mild irritation to skin on repeated contact. Aspiration (usually as a result of vomiting) or inhalation of mist can lead to Oil Pneu-moconiosis.

3.3 Environmental Hazards - Large spills may contaminate soil or ground water.

4. FIRST AID MEASURES

4.1 Inhalation - Remove to fresh air. If recovery is not rapid seek medical attention.

4.2 Skin Contact - Remove contaminated clothing. Wash affected skin with soap and water. If irritation persists seek medical attention.

4.3 Eye Contact - Flush eye with water for at least 10 mins. If irritation persists seek medical attention.

4.4 Ingestion - Obtain medical advice immediately. DO NOT INDUCE VOMITING

4.5 General / Other - No special measures are required.

5. FIRE FIGHTING MEASURES

5.1 Suitable extinguishing Media - Carbon Dioxide, foam or water (Fog or Fine spray). Prevent water spray from entering watercourses.

5.2 Unsuitable Extinguishing Media - Direct water jet (although these may be used to cool adjacent containers).

5.3 Exposure Hazards - Combustion products may contain harmful or irritant fumes. Heat from a fire could result in drums bursting.

5.4 Special Protective Equipment - In the event of a large fire self-contained breathing apparatus should be worn.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions - Being a lubricant spilt product presents a significant slip or skid hazard - prevent Unneccesary personnel or vehicles entering the area. Precautions should be taken to prevent skin and eye contact when cleaning up.

6.2 Environmental Precautions - Prevent entry into watercourses (drains, ditches, rivers etc). If a spillage does enter environment inform Environmental Authority immediately

6.3 Methods for Cleaning Up - Contain spillage using inert material (sand, earth etc). Collection may be by salvage vehicle and/or the use of inert absorbents. Remove all material to an appropriately labelled salvage container for disposal. Clean contaminated area with plenty of water and detergent.

7. HANDLING AND STORAGE

7.1 Storage - Suitable bulk storage vessels are mild/stainless steel tanks or tight head steel drums. For smaller quantity resealable tinplated steel or HD Polyethylene containers are recommended. Store away from sources of strong heat and strong oxidising agents. Keep containers tightly closed and avoid contact with any other substance. Take precautionary measures to prevent product entering the environment. In the UK the Oil Storage Regulations may apply.

7.2 Handling - Handling equipment Should minimise the formation of mists. If large quantities of the product are being moved (pumped or decanted) static discharges are possible - especially in dry weather. To avoid this earth bonding of pipework vessels etc may be advisable.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure Limits and Controls - Use engineering controls to prevent or minimise aerosol or vapour generation. Ensure good general ventilation.
Occupational Exposure Limit: Oil Mist 5mg/m3 (8 hr T.W.A) (EH40-0ES)
10mg/m3 (15 min T.W.A) (EH40-0ES)

8.2 Respiratory Protection - Use respirator designed for combined organic vapour/particulate (A2/P2) where significant aerosol or vapour is generated.

8.3 Hand Protection - Suitable protective gloves are PVC or nitrile rubber.

8.4 Eye Protection - Wear close-fitting goggles where there is a risk of splashing. Eye baths should be provided at locations where accidental exposure may occur.

8.5 Skin Protection - Where Significant exposure is possible wear impervious body covering.

8.6 Environmental Exposure Controls - Appropriate secondary containment should be provided to prevent the product entering the environment. The measures outlined in the Oil Storage Regulations 2001 should be adopted where appropriate.

9. PHYSICAL AND CHEMICAL PROPERTIES

			Tested in Accordance With
9.1	Appearance	Bright green liquid	
9.2	Odour	Oil	
9.3	pH	N/A	
9.4	Boiling Range	250°C - 380°C	
9.5	Melting Point	< -50°C	ISO 7308
9.6	Flash Point	> 110°C	IP 35
9.7	Auto-Ignition Temperature	> 350°C (by analogy)	ASTM D 286
9.8	Flammability Limits in Air	Not established but expected to be 1-8%	
9.9	Density	0.83 kg/l at 20°C	
9.10	Solubility	Insoluble in water	
9.11	Partition Coefficient n-Octenol/Water (Log P.O.W)	>3	OECD 117
9.12	Kinematic Viscosity	18 cSt at 40°C	ASTM D 445
9.13	Vapour Pressure	< 0.1 kPa at 20°C	Reid
9.14	Vapour Density	Not established	
9.15	Evaporation Rate	Negligible	

10. STABILITY AND REACTIVITY

10.1 Conditions to avoid - Product is stable under normal conditions. Prevent exposure to strong sources of heat

10.2 Materials to Avoid - Strong oxidising agents or strong acids.

10.3 Hazardous Decomposition Products - decomposition products which can be formed on heating include Carbon monoxide, Carbon dioxide and oxides of nitrogen or sulphur.

11. TOXICOLOGICAL INFORMATION

(Comments may be based on analogy with similar products}

11.1 Eye Contact - May cause mild irritation, but not classified as an eye irritant. (Test Method OECD 405)

11.2 Skin Contact - Unlikely to cause harm to the Skin on brief contact but prolonged or repeated contact can cause irritation and/or dermatitis Mineral oil can block skin pores leading to Oil Acne. Not known to be a sensitiser.

LD5O Rat = > 2000 mg/kg.

11.2 Ingestion - Product is of relatively low acute oral toxicity when swallowed. It may cause nausea, vomiting or diarrhoea

LD5O Rat = > 5000 mg/kg.

11.4 Inhalation - Unlikely to be hazardous by inhalation at ambient temperatures due to low vapour pressure. Inhalation at higher temperatures may cause irritation to the respiratory tract. Aspiration of the product into the lungs (usually as a result of vomiting) can lead to fatal Oil Pneumoconiosis - seek medical attention immediately.

11.5 Chronic or Long Term Toxicity

General - not expected to display significant longterm toxicity.

Carcinogenicity - Not known to be carcinogenic.
Mutagenicity - Not known to be mutagenic.
Reproductive Toxicity - Not known to be toxic in this regard.

12 ECOLOGICAL INFORMATION

12.1 Ecotoxicity - Acute toxicity to aquatic or soil organisms is expected to be low, however oil spills can smother and suffocate by preventing passage of oxygen end water. Oil contamination can also foul and smother birds and marine animals.

12.2 Mobility - Insoluble in water on which it floats. Does not evaporate from water or soil. Limited mobility in soil but some components may penetrate the soil and cause groundwater pollution.

12.3 Persistence / Degradability - Product is inherently but not readily biodegradable. Should not be admitted into biological waste treatment plants.

12.4 Bioaccumulative Potential - Base oil hydrocarbons possibly accumulative Log POW >6.

13 DISPOSAL CONSIDERATIONS

13.1 Disposal Dangers - Used mineral oils can be carcinogenic - avoid contact with skin.

13.2 DIsposal Methods - Controlled incineration or recycling is recommended. Under no circumstances should this product be disposed of to drains, soil or water courses. It may be advisable to seek advice from Local Waste Authority before disposal.

13.3 Regulations - Dispose of in accordance with local and national regulations. In the EU used mineral oils are classified as hazardous waste. (Directive 91/689/EEC), while the Waste Framework directive (75/442/EEC) also applies.

14 TRANSPORT INFORMATION

14.1	UK/EU Regulations	- Not classified
14.2	UN No./Class	- None
14.3	ADR/RID	- Not classified
14.4	IMO/IMDG	- Not classified
14.5	Marine Pollutant	- No
14.6	IATA/IACO Class	- Not classified

15 REGULATORY INFORMATION

15.1	EU Classification (UK CHIP 3)	Not classified as hazardous for supply
	Risk Phrases	N/A
	Safety Phrases	N/A

15.2 Restrictions on use or exposure - To be in accord with local and national regulations.

15.3 Other - While product is not officially classified as dangerous for supply, the following risk and safety phrases are strongly recommended:

1. Keep out of the reach of children.
2. Contains Petroleum Distillates - If swallowed seek medical advice immediately and show this container or label.

16 OTHER INFORMATION

16.1 Legal Disclaimer - The information contained herein is based on the present knowledge and experience of Federal-Mogul S.à.r.l. It in no way constitutes the users own assessment of work place risk as required by other health and safety legislation.

Federal-Mogul S.à.r.l. 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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