ZF-ECOFLUID M

Version 1.0

Effective Date 2010-08-01

Regulation 1907/2006/EG

Material Safety Data Sheet

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

Material Name	**ZF-Ecofluid M**
Uses	Transmission fluid
Product Code	
Manufacturer/Supplier	**ZF Friedrichshafen AG** Ehlersstraße 50 D-88046 Friedrichshafen
Telephone / Fax	(+49) 7541-77-3055 / (+49) 7541-77-903055
Email Contact for MSDS	If you have any enquiries about the content of this MSDS please email ingeborg.beyer@zf.com
Emergency Telephone Number	(+49) 30 - 19240

2. HAZARDS IDENTIFICATION

The product is not classified as dangerous in accordance with directive 1999/45/EC.

Health effects:	This product does not present a danger of intoxication. May cause allergic reactions.
Environmental impact:	Do not discharge this product into the environment
Physico-chemical hazards:	No specific risk of fire or explosion under normal conditions of use.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Preparation

Chemical nature: Product containing mineral oil with less than 3 % DMSO extract as measured by IP 346

Substances presenting a health hazard	EC-Co	Content	Symbol(s)	R-phrase(s)
Phosphoric acid esters, amine salt	294-716-2	< 1 %	Xi, N	R-43, 51/53

Additional Information : See section 16 for explanations of R-phrases.

4. FIRST AID MEASURES

IN CHASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.

Inhalation :	Inhalation of heavy concentrations of vapour, fumes or spray, may cause mild irritation of the throat. Transport the person into fresh air, keep warm and allow to rest.
Ingestion :	Possible risk of vomiting and diarrhoea. Do not induce vomiting to avoid the risk of aspiration into the respiratory tract. Give nothing to drink.
Skin Contact :	Immediately remove all soiled or stained clothing. Wash the affected area immediately and repeatedly with soup and water.
Eye Contact :	Keep eyes open and rinse immediately and repeatedly with water for at least 15 minutes.
Aspiration :	If the product is believed to have entered the lungs (in case of vomiting, for example), take the person to hospital for immediate care.

5. FIRE FIGHTING MEASURES

Flash point: See heading 9.

Extinguishing media:	suitable: Foam, carbon dioxide (CO2), powder. Not recommended: Do not use water jets (stick jets) for extinguishing fire, as this may help the spread of flames.
Spezific hazards:	Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot. These may be highly dangerous if inhaled. Vapours can build explosive mixtures with air. Vapours are heavier than air and may spread on the ground to sources of ignition.
Protective Equipment for Firefighters :	Insulated breathing apparatus must be worn in confined premises with heavy concentrations of fumes and gases.
Other:	All combustion residues and contaminated water from fire-fighting should be disposed of according to local regulations.

6. ACCIDENTAL RELEASE MEASURES

See section 8 and 13

Personal protection:	Ensure good ventilation. Remove sources of ignition: Do not smoke.
After spillage / leakage:	On land: Surfaces on which the product has been spilled may become slippery. Do not allow the product to enter sewers or rivers or contaminate the soil. Recover with mechanical means such as pumps and skimmers. Contain and collect the spilled product with sand or any other inert absorbent material. On water: Floating absorbent material, then mechanical recovery. If the product is spilt into rivers or sewers, notify the authorities of the possible presence of surface effluent.
Spill cleanup methods:	Recovery: Use mechanical means such as pumps, skimmers and absorbent materials. Elimination: Hand over contaminated materials to an approved collector – see also section 13.

7. HANDLING AND STORAGE

Handling :

Prevention of user exposure	Ventilate extensively if the formation of vapours, fumes, mists or aerosol is a risk. Make all the necessary arrangements in order to reduce exposure risk, notably to products in use or to wastes. Keep away from combustible substances; keep away from food and beverages.
Prevention of fire and explosion	Empty containers may contain flammable or explosive vapours. There is a fire hazard associated with rags, paper or any other material used to remove spills which become soaked with product. Avoid accumulation of these: they are to be disposed off safely after use.
Precautions	Avoid static electricity build up with connection to earth. Set up machinery and equipment so as to avoid the risk of accidental spills or splashes onto hot machine parts and electrical contacts (on joint failure, for example).

Storage :

Technical measures	Make the necessary arrangement to prevent water and soil pollution.
Storage precautions :	Suitable: Store at ambient temperature, protected against contact with water and moisture, and away from any source of ignition. Keep containers closed when not in use. To be avoided: Do not store exposed to the elements.
Incompatible products :	Dangerous reaction with strong oxidizing agents.
Packaging materials :	Recommended: Use only hydrocarbon-resistant containers, joints, pipes, etc. Keep in original container if possible.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Technical measures:	Use the product in a properly ventilated atmosphere. When working on enclosed place (tanks, reservoirs …), make sure that atmosphere is not suffocating and/or wear recommended equipment.
Occupational exposure limit	Oil mist: 10 mg/m³, for 15 minutes Oil mist: 5 mg/m³, for 8 minutes
Hand Protection:	Impermeable hydrocarbon-proof gloves. Recommended material: nitrile, neoprene. The break through times of the same type of glove of different manufactures can be very different – even if the layer thickness is similar. Therefore the break through times have to be found out from the manufacturer of the protective gloves themselves. The demands on the gloves are determined by the conditions in practice (e. g. multiple use, mechanical load, temperature, strength and duration of exposition). Before choosing suitable gloves, it is recommended that the user tests the gloves.
Eye Protection:	Goggles, in case of risk of splashing.
Skin and body (other than the hands) protection:	As required wear a face mask, hydrocarbon-proof clothing, and safety boots (when handling drums). Don't wear rings, watches or anything similar which can retain the product and may give rise to skin conditions.
Hygienic work practices:	Avoid prolonged or repeated contact with the skin, particularly with used or waste oil. Immediately remove all soiled or stained clothing.

If the product comes into contact with the skin, wash the affected area immediately and copiously with soap and water.
Do not use abrasives, solvents or fuels.
Do not dry hands with rags that have been contaminated with product.
Do not put product contaminated rags into workwear pockets.
Do not eat, drink or smoke whilst handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Clear liquid.
Colour	: Yellow to amber
Odour	: Characteristic.
Density/specific gravity	: 850 – 860 kg/m³
Flash point	: > 200 °C OC (Open cup)
Température d'auto-inflammation	: > 250 °C (ASTM E 659-78)
Partition coefficient (log Pow)	: Log Pow > 6 Temperature (°C): 20
Viscosity	: 50 - 55 mm²/s Temperature (°C) 40

10. STABILITY AND REACTIVITY

Stability : The product is stable at normal storage, handling and use temperatures.

Conditions to Avoid : Head (temperatures above flash point), sparks, ignition points, flames, static electricity

Materials to Avoid : Avoid contact with strong oxidizers.

Hazardous : Incomplete combustion and thermolysis produces potentially toxic gases such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot.

11. TOXICOLOGICAL INFORMATION

Acute toxicity / Local effect:

Inhalation, comments: Not classified according to the criteria of classification in force. Inhalation of high concentrations of vapour or aerosols may cause irritation of the upper respiratory tract.

Skin contact, comments: Not classified according to the criteria of classification in force.

Ingestion, comments: In case of ingestion of small quantities, no important effect observed. In case of ingestion of larger amounts: abdominal pain, diarrhoe, …

CHRONIC TOXICITY OR LONG-TERM TOXICITY:

Skin contact: Characteristic skin affections (oil blisters) may develop following prolonged and repeated exposure through contact with stained clothing.

Sensitization: Contains a sensitising substance.
May cause an allergic reaction.

12. ECOLOGICAL INFORMATION

Comments about ecotoxicity : Experimental data on the finished product are not available. It is considered to present a little danger for aquatic life. No information available for used product.

Mobility : Air:
There is a slow loss by evaporation.
Soil:
Given its physical and chemical characteristics, the product generally shows little mobility in the ground.
Water:
The product is insoluble; it spreads on the surface of the water.

Persistence/degradability : No experimental information about the finished product. However the “mineral oil” fraction of the new product is intrinsically biodegradable. Some components of the product may not be biodegradable.

13. DISPOSAL CONSIDERATIONS

Waste disposal : Dispose of in a safe manner, in accordance with local regulations. If need be, collection by an authorised waste contractor and regeneration or incineration at an approved installation.

Waste class: 13 02 05

The waste classification is dependant on the composition of the product at the time of disposal.
The waste classification mentioned here represents only a recommendation. The waste producer is responsible for the correct specification of the waste. The specification of the waste classification should be in arrangement with the authorised waste disposal company

Disposal of contaminated packaging : Proceed in compliance with the prevailing regulations.

14. TRANSPORT INFORMATION

ADR
This material is not classified as dangerous under ADR regulations.

RID
This material is not classified as dangerous under RID regulations.

ADNR
This material is not classified as dangerous under ADNR regulations.

IMDG
This material is not classified as dangerous under IMDG regulations.

IATA (Country variations may apply)
This material is not classified as dangerous under IATA regulations.

15. REGULATORY INFORMATION

Not applicable

EC Risk Phrases	:	None
EC Safety Phrases	:	None
Other	:	Contains phosphoric acid ester, amine salt May produce an allergic reaction
EU directives:	:	Hazardous preparations directive 1999/45/EC modified (Directive 2001/60/EC)
NATIONAL REGULATIONS		Regulation (EC) Nr. 1907/2006 REACH

16. OTHER INFORMATION

R-phrase(s)

R43	May cause sensitization by skin contact.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

MSDS Version Number	:	1.0
Disclaimer	:	This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.