



ZF Aftermarket

**Trade name: ZF EcoFluid X**

**1. Identification of the substance/mixture and of the company/undertaking**

**1.1 Product identifier**

Trade name: ZF EcoFluid X  
Product code: 0681.000.410  
0681.000.411  
0681.000.412

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Use of the Substance/Mixture: Lubricant  
Uses advised against: No uses advised against identified.

**1.3 Details of the supplier of the safety data sheet**

**ZF Friedrichshafen AG**  
**ZF Aftermarket**  
**Obere Weiden 12**  
**97424 Schweinfurt**  
**Germany**  
**+49 9721 475 60**  
**www.zf.com/contact**

**1.4 Emergency telephone number**

**24/7h Emergency telephone number:**  
+49 (0)89 19 240 Information in German and English

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**2. Hazards identification**

**2.1 Classification of the substance or mixture**

The product has not been classified as hazardous, but needs to be labelled according to regulation (EU) 1272/2008 (CLP)

**Classification according to Regulation (EC) No 1272/2008 as amended.**

Hazard summary

PHYSICAL HAZARDS:  
No data available.

**2.2 Label elements**

**||**EUH208: Contains organic Polysulphide, amine phosphate, Magnesium metabo-

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May produce an allergic reaction.  
 EUH210: Safety data sheet available on request.

**2.3 Other hazards**

By handling of mineral oil products and chemical products no particular hazard is known when normal precautions (item 7) and personal protective equipment (item 8) are kept. The product may not be released into the environment without control.

**3. Composition/information on ingredients**

**3.2 Mixtures**

General information: Mixture containing severely refined base oils and additives.

Chemical name	Identifier	Concentration *	REACH Registration No.
organic Poly-sulphide	EINECS: 273-103-3	1,00 - <5,00%	01-2119540515-43
amine phosphate	EINECS: 931-384-6	1,00 - <2,50%	01-2119493620-38
Methacrylate copolymer	Confidential	1,00 - <5,00%	Confidential

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

**Classification**

Chemical name	Identifier	Classification
organic Polysulphide	EINECS: 273-103-3	CLP: Skin Sens. 1B; H317, Aquatic Chronic 3; H412
amine phosphate	EINECS: 931-384-6	CLP: Eye Dam. 1; H318, Acute Tox. 4; H302, Skin Sens. 1; H317, Aquatic Chronic 2; H411
Methacrylate copolymer	Confidential	CLP: Eye Irrit. 2; H319

CLP: Regulation No. 1272/2008.

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Chemical name	Identifier	specific concentration limit	Hazard class	Hazard Category	Hazard statements
organic Polysulphide	EINECS: 273-103-3	>= 45,99 %	Skin sensitizer	1B	H317
amine phosphate	EINECS: 931-384-6	>= 9,39 % >50%	Skin sensitizer Serious eye damage	1 1	H317 H318
Methacrylate copolymer	Confidential	>= 75 %	Serious eye irritation	2	H319

For the wording of the listed hazard statements refer to section 16.  
Please note that the mineral oils and petroleum distillates used in our products are severely refined and have a DMSO extract < 3% as measured by method IP 346 and are not classified as carcinogenic according to Note L of Annex VI of Regulation EC 1272/2008."

**4. First aid measures**

General: Instantly remove any clothing soiled by the product.

**4.1 Description of first aid measures**

If inhaled: Supply fresh air; consult doctor in case of symptoms.

In case of skin contact: Wash with soap and water.

In case of eye contact: Promptly wash eyes with plenty of water while lifting the eye lids.

If swallowed: Rinse mouth thoroughly.

**4.2 Most important symptoms and effects, both acute and delayed**

May cause skin and eye irritation.

**4.3 Indication of any immediate medical attention and special treatment needed**

Get medical attention if symptoms occur.

**5. Firefighting measures**



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### **5.1 Extinguishing media**

Suitable extinguishing media: CO<sub>2</sub>, fire extinguishing powder or fog like water spraying. Extinguish larger fires with alcohol resistant foam or spray water with suitable surfactant added.

Unsuitable extinguishing media: Water with a full water jet.

### **5.2 Special hazards arising from the substance or mixture**

During fire, gases hazardous to health may be formed.

### **5.3 Advice for firefighters**

Special protective equipment for firefighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Specific extinguishing methods: Move container from fire area if it can be done without risk. Dispose of fire debris and contaminated fire fighting water in accordance with official regulations. Collect contaminated fire fighting water separately. It must not enter drains.

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## **6. Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

In case of spills, beware of slippery floors and surfaces.

### **6.2 Environmental precautions**

Prevent from spreading (e.g. by binding or oil barriers). Avoid release to the environment. Environmental manager must be informed of all major spillages. Prevent further leakage or spillage if safe to do so. Do not allow to enter drainage system, surface or ground water.

### **6.3 Methods and materials for containment and cleaning up**

Absorb with liquid-binding material (sand, diatomite, acidbinders, universal binders, sawdust). Dispose of the material collected according to regulations. Stop the flow of material, if this is without risk.



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#### **6.4 Reference to other sections**

See Section 8 of the SDS for Personal Protective Equipment. See Section 7 for information on safe handling See Section 13 for information on disposal.

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### **7. Handling and storage**

#### **7.1 Precautions for safe handling**

Prevent formation of aerosols. Do not eat, drink or smoke when working with the product. Take usual precautions when handling mineral oil products or chemical products. Observe good industrial hygiene practices. Provide adequate ventilation.

#### **7.2 Conditions for safe storage, including any incompatibilities**

Local regulations concerning handling and storage of waterpolluting products have to be followed. Do not heat up to temperatures close to the flash point.

#### **7.3 Specific end use(s)**

Specific use(s)	No data available.
Storage Class:	10, Combustible liquids

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### **8. Exposure controls/personal protection**

#### **8.1 Control parameters**

Occupational Exposure Limits	None of the components have assigned exposure limits.
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#### **8.2 Exposure controls**

Appropriate engineering controls:	Provide adequate ventilation. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
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#### **Individual protection measures, such as personal protective equipment**



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General Information:

Wash hands before breaks and after work. Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. The usual precautionary measures should be adhered to in handling the chemicals or the mineral oil products.

**Eye/face protection:**

Safety glasses (EN 166) recommended during refilling. Avoid contact with skin and eyes. Goggles/face shield are recommended. If risk of splashing, wear safety goggles or face shield.

**Hand protection:**

Material: Nitrile butyl rubber (NBR).  
Min. Breakthrough time:  $\geq 480$  min  
Recommended thickness of the material:  $\geq 0,38$  mm  
Avoid long-term and repeated skin contact. Suitable gloves can be recommended by the glove supplier. Use skin protection cream for preventive skin protection. Protective gloves, where permitted in acc. To safety directions. The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Other:**

Do not carry cleaning cloths impregnated with the product in trouser pockets. Wear suitable protective clothing.

**Respiratory protection:**

Ensure good ventilation/exhaustion at the workplace. Avoid breathing vapour/ aerosol.

**Thermal hazards:**

Not known.

**Hygiene measures:**

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work

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clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

**Environmental controls:** No data available.

**9. Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

Physical state: liquid  
 Form: liquid  
 Colour: Brown  
 Odour: Characteristic  
 Odour Threshold: Not applicable for mixtures  
 pH: Not applicable

Freezing point	Not applicable for mixtures	
Boiling point	Value not relevant for classification	
Flash point	200 °C	
Evaporation rate	Not applicable for mixtures	
Flammability (solid, gas)	Value not relevant for classification	
Upper explosion limit	Not applicable for mixtures	
Lower explosion limit	Not applicable for mixtures	
Vapour pressure	Not applicable for mixtures	
Relative vapour density	Not applicable for mixtures	

Relative density	0,89 g/ml (15°C)	
<b>Solubility(ies)</b>		
Water solubility	Insoluble in water	

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Solubility in other solvents	No data available.	
Partition coefficient: n-octanol/water	Not applicable for mixtures	
Auto-ignition temperature	Value not relevant for classification	
Decomposition Temperature:	Value not relevant for classification	
Viscosity, kinematic	142mm <sup>2</sup> /s (40°C)	
Explosive properties	Value not relevant for classification	
Oxidizing properties	Value not relevant for classification	

**9.2 Other information**

Data not available

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**10. Stability and reactivity**

- 10.1 Reactivity** Stable under normal use conditions.
- 10.2 Chemical stability:** Stable under normal use conditions.
- 10.3 Possibility of hazardous reactions:** Stable under normal use conditions.
- 10.4 Conditions to avoid:** Stable under normal use conditions.
- 10.5 Incompatible materials:** Strong oxidizing substances. Strong acids. Strong bases.
- 10.6 Hazardous decomposition products:** Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

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**11. Toxicological information**





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### 11.1 Information on toxicological effects

#### Acute toxicity

Oral

Product: ATEmix: 30.959mg/kg

Specified substance(s)  
organic Polysulphide LD 50 (Rat): 6500 mg/kg

Dermal

Product: Not classified for acute toxicity based on available data.

Inhalation

Product: Not classified for acute toxicity based on available data.

#### Skin corrosion/irritation

Product:

Based on available data, the classification criteria are not met.

#### Serious eye damage/eye irritation

Product:

Based on available data, the classification criteria are not met.

#### Respiratory or skin sensitisation

Product:

Experimental data has shown that the concentration of potentially sensitizing components present in this product does not induce skin sensitization.

#### Germ cell mutagenicity

Product:

Based on available data, the classification criteria are not met.

#### Carcinogenicity

Product:

Based on available data, the classification criteria are not met.

#### Reproductive toxicity

Product:

Based on available data, the classification criteria are not met.

#### STOT - single exposure

Product:

Based on available data, the classification criteria are not met.

#### STOT - repeated exposure

Product:

Based on available data, the classification criteria are not met.

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**Aspiration toxicity**

Product:

Based on available data, the classification criteria are not met.

**Other Adverse Effects:**

No data available

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**12. Ecological information**

**12.1 Toxicity**

Acute toxicity

Product:

Based on available data, the classification criteria are not met.

Fish

Specified substance(s)  
amine phosphate

LC 50 (Fish, 96 h): 24 mg/l

Aquatic Invertebrates

Specified substance(s)  
organic Polysulphide

EC 50 (Water Flea, 48 h): 63 mg/l (OECD 202)

amine phosphate

EC 50 (Water Flea, 48 h): 91,4 mg/l

Chronic Toxicity Product:

Based on available data, the classification criteria are not met.

Aquatic Invertebrates

Specified substance(s)  
amine phosphate

NOEC (Water Flea, 21 d): 0,12 mg/l

Toxicity to Aquatic Plants

Specified substance(s)  
organic Polysulphide

EC 50 (Alga, 72 h): > 101 mg/l (OECD 201)

||

amine phosphate

EC 50 (Alga, 72 h): > 100 mg/l

**12.2 Persistence and degradability**

Biodegradability

Product:

Not applicable for mixtures

Specified substance(s)  
organic Polysulphide

13 % (28 d, OECD 301B) Not readily degradable.

**12.3 Bioaccumulative potential**

Bioakkumulation

Product:

Not applicable for mixtures



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**12.4 Mobility in soil**

Mobility: Not applicable for mixtures  
Product:

**12.5 Results of PBT and vPvB assessment**

Assessment: The product does not contain any substances fulfilling the PBT/vPvB criteria.  
Product:

**12.6 Other adverse effects**

No data available  
Water Hazard Class (WGK): WGK 2: water-endangering.

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**13. Disposal considerations**

**13.1 Waste treatment methods**

General information: Dispose in accordance with all applicable regulations.

Disposal methods: Do not empty into drains; dispose of this material and its container in a safe way. When storing used products, ensure that the waste categories and mixing instructions are observed.

EU Waste Disposal Code (EWC): 13 02 05\* mineral-based non-chlorinated engine, gear and lubricating oils

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**14 Transport information**

**ADR/RID**

14.1 UN Number: --  
14.2 UN Proper Shipping Name: --  
14.3 Transport Hazard Class(es)  
Class: Non-dangerous goods  
Label(s): --  
Hazard No. (ADR): --  
Tunnel restriction code: --  
14.4 Packing Group: --  
14.5 Environmental hazards: --  
14.6 Special precautions for user: --

**ADN**

14.1 UN Number: --

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14.2 UN Proper Shipping Name: --  
14.3 Transport Hazard Class(es)  
Class: Non-dangerous goods  
Label(s): --  
14.3 Packing Group: --  
14.5 Environmental hazards: --  
14.6 Special precautions for user: --

**IMDG**

14.1 UN Number: --  
14.2 UN Proper Shipping Name: --  
14.3 Transport Hazard Class(es)  
Class: Non-dangerous goods  
Label(s): --  
EmS No.: --  
14.3 Packing Group: --  
14.5 Environmental hazards: --  
14.6 Special precautions for user: --

**IATA**

14.1 UN Number: --  
14.2 Proper Shipping Name: --  
14.3 Transport Hazard Class(es):  
Class: Non-dangerous goods  
Label(s): --  
14.4 Packing Group: --  
14.5 Environmental hazards: --  
14.6 Special precautions for user: --

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:**  
not applicable.

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**15. Regulatory information**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

EU Regulations  
Regulation (EC) No. 2037/2000 Substances that deplete the ozone layer: none  
Regulation (EC) No. 850/2004 on persistent organic pollutants: none

**15.2 Chemical safety assessment**

No Chemical Safety Assessment has been carried out.

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**16. Other information**

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**Revision Information:**

Vertical lines in the margin indicate an amendment.

**Wording of the H-statements in section 2 and 3**

- H302 Harmful if swallowed.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.

Other information:

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies. The classification results from the Conventional Method mentioned in regulation EU 1272/2008 (CLP).

Disclaimer:

The data contained in this safety data sheet are based on our current knowledge and experience and are given to the best of our knowledge and belief. It characterizes the product only with regard to safety requirements for handling, transport and disposal. The data do not describe the product's properties (tech. product specification). Neither should any agreed property nor the suitability of the product for any specific technical application be deduced from the data contained in this safety data sheet. Modifications on this document are not allowed. The data are not transferable to other products. In the case of mixing the product with other products or in the case of processing, the data in this safety data sheet are not necessarily valid for the new-made material. It is the responsibility of the recipient of the product to observe federal, state and local law. Please contact us to obtain up-to-date safety data sheets. This document was issued electronically and has no signature.