



Trade name: ZF EcoFluid X

ZF Aftermarket

Not classified as hazardous according to criteria of Australian Safety and Compensation Council.

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 Details of Australian Importer/Supplier

ZF Services Pty Limited
Unit 1, 13 Bessemer Street
Blacktown, NSW 2148
+61 2 9679 5555

1.5 Emergency telephone number **24/7h Emergency telephone number:**

Australia ZF 24/7: Tel (+1) 300 938 324 (in English)

International GBK-EMETEL: Tel (+1) 352 323 3500 (in English)

+49 (0)89 19 240 Information in German and English

2. Hazards Identification



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2.1 Classification of the substance or mixture

The product is not classified, according to the Globally Harmonised System (GHS).

2.2 Label elements

GHS label elements **Void**

Hazard pictograms **Void**

Signal word **Void**

Hazard statements **Void**

2.3 Additional information

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

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3. Composition/information on ingredients

3.2 Mixtures

Chemical characterisation: Mixtures

General information: Mixture of the substances listed below including additives not requiring identification.

Dangerous components		
	methacrylate copolymer Eye Irritation 2A, H319	1.00 - <5.00%
68937-96-2	organic Polysulphide Skin Sens. 1B, H317 Specific concentration limit: Skin Sens. 1B; H317: C ≥ 46 %	1.00 - <4.59%
91745-46-9	Amine phosphate Eye Dam. 1, H318; Acute Tox. 4, H302; Skin Sens. 1, H317 Specific concentration limit: Eye Dam. 1; H318: C ≥ 50 %	1.00 - <2.50%
13703-82-7	Magnesiummetaborat Skin Sens. 1, H317	0.1 - < 1%

* Additional information: For the wording of the listed hazard phrases refer to section 16



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4. First aid measures

4.1 Description of first aid measures

General information:	Remove contaminated clothing immediately.
If inhaled:	Supply fresh air; consult doctor in case of symptoms.
In case of skin contact:	Instantly wash with water and soap and rinse thoroughly. In case of skin irritations or sensitizing effects, consult doctor. Wash contaminated clothing before re-use.
In case of eye contact:	Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
If swallowed:	Do not induce vomiting. In case of persistent symptoms consult doctor.

4.2 Information for doctor

Most important symptoms and effects, both acute and delayed, No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol-resistant foam.

Unsuitable extinguishing media: Water with a full water jet.

5.2 Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.



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During incomplete combustion carbon monoxide can be formed.

5.3 Advice for firefighters

Special protective equipment for fire-fighters:	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.
Protective equipment	Wear self-contained breathing apparatus. Wear full protective suit.
Additional information	Collect contaminated fire fighting water separately. It must not enter drains. Provide sufficient fire fighting water retention. Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid contact to eyes, skin and clothes.
Wear protective clothing.
Particular danger of slipping on leaked/spilled product.

6.2 Methods and materials for containment and cleaning up

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders). Dispose of the material collected according to regulations.

6.3 Reference to other sections

See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
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 while working.
Ensure good ventilation/exhaustion at the workplace.

7.2 Information about protection against explosions and fires

No special measures required

Conditions for safe storage, including any incompatibilities

Information about storage in one common storage facility:

Keep away from strong acidic or basic materials and oxidizing agents.

Further information about storage conditions:

Keep container tightly closed and store in a dry, cool and well ventilated place.

7.3 Specific end use(s)

No further relevant information available.

8. Exposure controls/personal protection

8.1 Control parameters

Components with limit values that require monitoring at the workplace

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

DNELs

68937-96-2 organic Polysulphide		
Dermal	DNEL (worker, long-term, systemic)	3.33 mg/kg bw/day (human)
	DNEL (consumer, long-term, systemic)	1.66 mg/kg bw/day (human)
Inhalative	DNEL (worker, long-term, systemic)	14.5 mg/m ³ (human)
	DNEL (consumer, long-term, systemic)	2.6 mg/m ³ (human)
13703-82-7 Magnesiummetaborat		
Oral	DNEL (consumer, long-term, systemic)	0.28 mg/kg bw/day (.)
Dermal	DNEL (worker, long-term, systemic)	7.78 mg/kg bw/day (.)
	DNEL (consumer, long-term, systemic)	0.278 mg/kg bw/day (.)



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Inhalative	DNEL (worker, long-term, systemic)	5.49 mg/m ³ (.)
	DNEL (consumer, long-term, systemic)	0.82 mg/m ³ (.)
PNECs		
68937-96-2 organic Polysulphide		
PNEC aqua (freshwater)		0.00024 mg/L (.)
PNEC aqua (marine water)		0.000024 mg/L (.)
PNEC STP		4.51 mg/L (.)
PNEC soil		1,513 mg/kg soil dw (.)
PNEC sediment (freshwater)		7,589 mg/kg sedim. dw (.)
PNEC sediment (marine water)		758.9 mg/kg sedim. dw (.)
PNEC aqua (intermittent releases)		0.0024 mg/L (.)
PNEC oral		6.66 mg/kg food (.)
13703-82-7 Magnesiummetaborat		
PNEC aqua (freshwater)		0.05 mg/L (.)
PNEC aqua (marine water)		0.05 mg/L (.)
PNEC STP		100 mg/L (.)
PNEC soil		0.247 mg/kg soil dw (.)
PNEC sediment (freshwater)		1.38 mg/kg sedim. dw (.)
PNEC sediment (marine water)		1.38 mg/kg sedim. dw (.)
PNEC oral		1.67 mg/kg food (.)

8.2 Exposure controls

Personal protective equipment

General protective and hygienic measures

Take off all contaminated clothing immediately. Wash hands during breaks and at the end of the work. Do not eat, drink or smoke while working. Avoid contact with the eyes and skin. Wash contaminated clothing before re-use. Do not carry cleaning cloths impregnated with the product in trouser pockets.

Breathing equipment

Not required when used as intended. Provide plenty of fresh air.

Protection of hands

Protective gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.



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Material of gloves:	The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Penetration time of glove material:	The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
For the permanent contact gloves made of the following materials are suitable:	Nitrile rubber, NBR. In case of a layer thickness of 0.4 mm the penetration time is longer than 480 minutes.
Eye protection:	Safety glasses recommended if possibility of liquid splashes exists.

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	



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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)	
Solubility(ies)		
Water solubility	Insoluble in water	
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 ² /s (40°C)	
Explosive properties	Value not relevant for classification	
Oxidizing properties	Value not relevant for classification	

9.2 Other information

Data not available

10. Stability and reactivity

10.1 Reactivity

Stable under normal use conditions.



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- 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.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD/LC50 values that are relevant for classification

13703-82-7 Magnesiummetaborat

Oral LD50 > 2,000 mg/kg (rat) (OECD 420)

Dermal LD50 > 2,000 mg/kg (rat) (OECD 402)

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.

Additional toxicological information

The product shows the following dangers according to the calculation method of the General EC. Classification Guidelines for Preparations as issued in the latest version

Repeated dose toxicity

13703-82-7 Magnesiummetaborat

Oral NOAEL (28d) 125 mg/kg bw/day (rat) (OECD 422)

12. Ecological information



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12.1 Toxicity

Aquatic toxicity:

68937-96-2 organic Polysulphide
EC50 (static)

0.25 mg/l/48h (Daphnia magna) (OECD 202)

EC0 (static)

0.088 mg/l/96h (Danio rerio) (OECD 203)

13703-82-7 Magnesiummetaborat
EC50
LC50

50 mg/l/48h (Daphnia magna) (OECD 202)

50 mg/l/96h (Oncorhynchus mykiss)
(OECD 203)

EC50

50 mg/l/72h (Pseudokirchneriella subcapitata) (OECD 201)

12.2 Persistence and degradability

Biodegradability
Product:

Not applicable for mixtures

12.3 Bioaccumulative potential

Bioakkumulation
Product:

Not applicable for mixtures

12.4 Mobility in soil

Mobility
Product:

Not applicable for mixtures

12.5 Ecotoxicological effects

Remark:

Harmful to fish

Additional ecological information:

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system.

Results of PBT and vPvB assessment:

PBT

Not applicable

vPvB

Not applicable

Other adverse effects

No further relevant information available

13. Disposal considerations

13.1 Waste treatment methods

Recommendation

Must not be disposed of together with household garbage. Do not allow product



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to reach sewage system

Uncleaned packagings

Recommendation:

Dispose of packaging according to regulations on the disposal of packagings. Non contaminated packagings can be used for recycling. Packagings that cannot be cleaned are to be disposed of in the same manner as the product.

Recommended cleaning agent

Water, if necessary with cleaning agent

14 Transport information

UN-Number
 ADG, IMDG, IATA

Void

UN proper shipping name
 ADG, IMDG, IATA

Void

Transport hazard class(es)
 ADG, ADN, IMDG
 Class

Void

IATA
 Class

Void
 Not Restricted

Packing group
 ADG, IMDG, IATA

Void

Environmental hazards

Not applicable

Special precautions for user

Not applicable

Transport in bulk according to Annex II of
 Marpol and the IBC Code

Not applicable

Transport/Additional information

Not dangerous according to the above specifications

UN "Model Regulation"

Void



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15. Regulatory information

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

Australian Inventory of Industrial Chemicals

68937-96-2	organic Polysulphide
91745-46-9	Amine phosphate
13703-82-7	Magnesiummetaborat

Standard for the Uniform Scheduling of Medicines and Poisons

None of the ingredients is listed

Australia: Priority Existing Chemicals

None of the ingredients is listed

National regulations

Water hazard class: Water hazard class 2 (Self-assessment): hazardous for water.

Substances of very high concern (SVHC) according to REACH, Article 57

None of the ingredients is listed

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out.

16. Other information

Revision Information:

Vertical lines in the margin indicate an amendment.

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

The phrases specified here are no labelling elements for the product but repeat the properties of the ingredients from section 3.

Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

SAFETY DATA SHEET
according to WHS Regulations



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EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Acute toxicity – Category 4
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1B: Skin sensitisation – Category 1B

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.