



Trade name: ZF LifeguardFluid 5

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

1.1 Product identifier

Trade name: ZF LifeguardFluid 5

Product code: S671.090.170
S671.090.171
S671.090.172
S671.090.173

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

Use of the Substance/Mixture: Gear oil
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 19240 Information in German and English

2. Hazards identification

2.1 Classification of the substance or mixture

The product has been classified and labelled as hazardous according to the legislation in force.

Environmental Hazards

Chronic hazards to the aquatic environment Category 3

Hazard summary

Physical Hazards: No data available

2.2 Label elements

Hazard Statement(s): H412: Harmful to aquatic life with long



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Precautionary Statements

Prevention:

lasting effects.

P273: Avoid release to the environment.

Disposal:

P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

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.

Unknown toxicity

Due to information available product does not contain any ingredients of unknown toxicity.

3. Composition/information on ingredients

3.1 Mixtures

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

Chemical name	Identifier	Concentration *	Notes
base oil, low viscous	72623-87-1	50,00 - <100,00%	--
alkyl amine	61791-44-4	0.10 - 1.00%	--

* 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
base oil, low viscous	72623-87-1	Asp. Tox. 1;H304



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Alkyl amine	61791-44-4	Skin Corr. 1C; H314, Eye Dam. 1; H318, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, Acute Tox. 4; H302; M-Factor (aquatic acute): 10; M-Factor (aquatic chronic): 1
prim. alkanolamine ether	939-485-7	Acute Tox. 4; H302, Skin Corr. 1B; H314, Eye Dam. 1; H318, Aquatic Acute 1; H400, Aquatic Chronic 1; H410; M-Factor (aquatic acute): 100; M-Factor (aquatic chronic): 1

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

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

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

Skin Contact: Wash with soap and water.

Ingestion: 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

5.1 Extinguishing media

Suitable extinguishing media: CO₂, fire extinguishing powder or fog like



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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 fire fighting procedures: 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.

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

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

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent from spreading (e.g. by binding or oil barriers). Environmental manager must be informed of all major spillages. 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.

6.4 Reference to other sections

See Section 8 of the SDS for Personal Protective Equipment. See Section 7 for in-



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formation on safe handling See Section 13 for information on disposal.

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.

8. Exposure controls/personal protection

8.1 Exposure Limits

Chemical name	type	Exposure Limit Values	Source
base oil, low vis- cous - Inhalable fraction.	TWA	5 mg/m ³	US. ACGIH Threshold Limit Values (03 2014)
base oil, low vis- cous	PEL	500 ppm 2,000 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
base oil, low vis- cous - Mist.	PEL	5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
base oil, low vis- cous	TWA	400 ppm 1,600 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
base oil, low vis- cous - Mist.	TWA	5 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

8.2 Exposure controls

Appropriate engineering controls: Provide adequate ventilation. Ventilation



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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.

Individual protection measures, such as personal protective equipment

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: ≥ 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/ aero-



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sol.

Thermal hazards: No data available.

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 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
 Colour: Light 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	> 220°C / 428°F	
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	



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Relative density	0,84 g/cm ³ (68°F / 20°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	37mm ² /s (104°F / 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.
- 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.



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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 likely routes of exposure

Inhalation: No data available.

Ingestion: No data available.

Skin Contact: No data available.

Eye contact: No data available.

Acute toxicity

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

|| Specified substance(s) alkyl amine LD 50 (Rat): 1,350 mg/kg (OECD 401)

|| 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 Sensitization:

Product:
Skin sensitizer: Based on available data, the classification criteria are not met.
Respiratory sensitizer: Based on available data, the classification criteria are not met.

|| Specified substance(s)



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Alkyl amine
No sensitizing effect (guinea pig); OECD 406

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.

IARC: IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

No carcinogenic components identified

NTP: US. National Toxicology Program (NTP) Report on Carcinogens

No carcinogenic components identified

**OSHA: US. OSHA Specifically Regulated Substances
(29 CFR 1910.1001-1050)**

No carcinogenic components identified

Reproductive toxicity

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

Specific Target Organ Toxicity - single exposure

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

Specific Target Organ Toxicity - repeated exposure

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

Aspiration Hazard

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

12. Ecological information

12.1 Toxicity

Acute toxicity
Product: Based on available data, the classification criteria are not met.

Fish
Specified substance(s)



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alkyl amine	LC 50 (Fish, 96 h): < 1.1 mg/l (OECD 203)
Aquatic Invertebrates Specified substance(s) alkyl amine	EC 50 (Water Flea, 48 h): 0.043 mg/l (OECD 202)
Chronic Toxicity Product:	Based on available data, the classification criteria are not met.
Fish Specified substance(s) base oil, low viscous	NOEC (Fish, 14 d): > 1,000 mg/l
Aquatic Invertebrates Specified substance(s) base oil, low viscous	NOEC (Water Flea, 21 d): 10 mg/l (OECD 211)
Alkyl amine	EC 10 (Water Flea, 21 d): 0.0107 mg/l (OECD 211)
Toxicity to Aquatic Plants Specified substance(s) base oil, low viscous	NOEC (Alga, 72 h): > 100 mg/l (OECD 201)
Alkyl amine	EC 10 (Water Flea, 21 d): 0.0107 mg/l (OECD 211)

12.2 Persistence and degradability

Biodegradability
Product: Not applicable for mixtures

Specified substance(s) Alkyl amine	63 % (28 d, OECD 301D) Readily biodegradable
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12.3 Bioaccumulative potential

Bioakkumulation
Product: Not applicable for mixtures

12.4 Mobility in soil

Mobility
Product: Not applicable for mixtures

12.5 Results of PBT and vPvB assessment

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

12.6 Other adverse effects



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|| Harmful to aquatic life with long lasting effects.

13. Disposal considerations

13.1 Waste treatment methods

General information: Dispose in accordance with all applicable regulations.

|| Disposal methods: Discharge, treatment, or disposal may be subject to national, state, or local laws.

14 Transport information

DOT Not regulated.

IMDG Not regulated.
International Maritime Dangerous Goods Code

IATA Not regulated.

15. Regulatory information

15.1 US Federal Regulations

US State Regulations
Inventory Status

TSCA	On or in compliance with the inventory
DSL	On or in compliance with the inventory

16. Other information

Revision Information: Vertical lines in the margin indicate an amendment.

Wording of the H-statements in section 2 and 3

|| H302 Harmful if swallowed.
|| H304 May be fatal if swallowed and enters airways.
|| H314 Causes severe skin burns and eye damage.



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- || H318 Causes serious eye damage.
- || H400 Very toxic to aquatic life.
- || H410 Very toxic to aquatic life with long lasting effects.
- || H412 Harmful to aquatic life with long lasting effects.

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.