



# ZF LIFEGUARD FLUID 5

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

**Trade name**

ZF LIFEGUARD FLUID 5

**Article No.**

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

**Product type**

Mixture.

**Relevant identified uses**

Gear oil.

**Not suitable for use in**

No uses advised against identified.

### 1.3. Details of the supplier of the safety data sheet

**SDS created by**

Sunil

**Supplier**

ZF Aftermarket

Address

ZF Friedrichshafen AG  
Obere Weiden 12

97424 Schweinfurt  
Germany

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Marcin Nadany / Sunil



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**Email**

msds.zf-aftermarket@zf.com

**1.4. Emergency telephone number**

+49 (0)89 19240 Information in German and English

**Available outside office hours**

Yes

## SECTION 2: Hazards identification

**2.1. Classification of the substance or mixture**

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

**Classification**

Hazardous to the aquatic environment — Chronic hazard category 3

**Hazard statements**

H412

**Description**

Classification according to Regulation (EC) No 1272/2008 [CLP] as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567: The product is classified:

**2.2. Label elements**

**Hazard statements**

H412 Harmful to aquatic life with long lasting effects.

**Supplemental hazard statements**

EUH208 Contains Triazole amine derivative. May produce an allergic reaction.

**Precautionary statements**

P273 Avoid release to the environment.

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..



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### 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.

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

This mixture does not contain any substances that are assessed to be a PBT or a vPvB in a concentration  $\geq 0,1$  %.



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## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrase M factor acute M factor chronic	Specific concentration limits ATE	Note
base oil, low viscous	72623-87-1 276-738-4 01-2119474889-13 649-483-00-5	50 - <100%	Asp. Tox. 1	H304 - -		-
Amine aromatic , alkylated	68411-46-1 270-128-1 01-2119491299-23 -	0.1 - <1%	Repr. 2, Aquatic Chronic 3	H361f, H412 - -		-
Alkyl amine	1218787-32-6 620-540-6 01-2119510877-33 -	0.1 - <0.25%	Acute Tox. 4 - oral, Skin Corr. 1C, Eye Dam. 1, Aquatic Acute 1, Aquatic Chronic 1	H302, H314, H318, H400, H410 - -		M-Factor (Acute aquatic toxicity): 10 M- Factor (Chronic aquatic toxicity): 1
prim. alkanolamine ether	- 939-485-7 01-2119974116-35 -	0.01 - <0.1%	Acute Tox. 4 - oral, Skin Corr. 1B, Eye Dam. 1, Aquatic Acute 1, Aquatic Chronic 1	H302, H314, H318, H400, H410 M-acute=100 M-chro=1		M=100 M(C hronic)=1
Triazole derivative	91273-04-0 401-280-0 01-2119930450-49 613-072-00-9	0.01 - <0.1%	Skin Corr. 1B, Skin Sens. 1A, Eye Dam. 1, Aquatic Chronic 1	H314, H317, H318, H410 - M-chro=1		ATE (dermal): >2000 mg/kg; ATE (oral): 2500 mg/kg



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### **Substance additional information**

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 Nota L/ Nota N of Annex VI of Regulation GB-CLP.

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

## **SECTION 4: First aid measures**

### **4.1. Description of first aid measures**

Instantly remove any clothing soiled by the product.

#### **Inhalation**

Supply fresh air, consult a doctor in case of discomfort.

#### **Skin contact**

Wash with soap and water.

#### **Eye contact**

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

#### **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.

## **SECTION 5: Firefighting measures**

### **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.



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## 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 fire-fighters**

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

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.

## SECTION 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 material for containment and cleaning up

Absorb with liquid-binding material (sand, diatomite, acid binders, 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 information on safe handling See Section 13 for information on disposal.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### **Preventive handling precautions**

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.



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

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

### 7.3. Specific end use(s)

Not applicable.

### Other

Storage Class: 10; Combustible liquids.

Notes: This is a regulation from Germany that does not form a legal basis in other countries.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Exposure limits

Occupational exposure limits: No exposure limit value known.

Biological Limit Values (BLV): No exposure indices known.

### 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 air-borne levels to an acceptable level.

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

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.



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### **Other skin protection**

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.

### **Environmental exposure controls**

No data available.

### **Other**

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 foot-wear that cannot be cleaned.

## **SECTION 9: Physical and chemical properties**

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

#### **Physical state**

Liquid

#### **Colour**

Light brown.

#### **Odour**

Characteristic.

#### **Melting point / freezing point**

Not determined.

#### **Boiling point or initial boiling point and boiling range**

Not determined.

#### **Flammability**

Not applicable.

#### **Lower and upper explosion limit**

Not applicable for mixtures.

#### **Flash point**

> 220 °C



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**Auto-ignition temperature**

Not determined.

**Decomposition temperature**

Not determined.

**pH**

substance/mixture is non-soluble (in water).

**Kinematic viscosity**

37 mm<sup>2</sup>/s

**Method**

at 40 °C

**Solubility**

Insoluble (water); No data available (other solvents).

**Partition coefficient n-octanol/water**

Not applicable for mixtures.

**Vapour pressure**

Not applicable for mixtures.

**Density and/or relative density**

0.84 g/cm<sup>3</sup>

**Method**

at 20 °C

**Relative vapour density**

Not applicable for mixtures.

**Evaporation Rate**

Not applicable for mixtures.

**Explosive properties**

Value not relevant for classification.

**Oxidising properties**

Value not relevant for classification.

**Particle characteristics**

Not applicable.

**9.2. Other information**

No data available.



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## SECTION 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 oxidising substances, strong acids and strong bases.

### 10.6. Hazardous decomposition products

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### **Acute toxicity**

Oral. / Dermal / Inhalation: Not classified for acute toxicity based on available data.

Product / Sub- stance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Test animals	Method / Guideline
base oil, low viscous -	LD50	> 5000 mg/kg	Oral.	Rat.	OECD 401
Amine aromatic , alkylated -	LD50	> 5000 mg/kg	Oral.	Rat.	OECD 401
2,2'-(C16-18 (even- numbered, C18 unsaturated) alkyl imino) diethanol -	LD50	> 5000 mg/kg	Oral.	Rat.	OECD 401

#### **Skin corrosion/irritation**

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



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Product / Substance name CAS / EC no.	Result	Duration of exposure	Species	Method / Guideline
2,2'-(C16-18 (even-numbered, C18 unsaturated) alkyl imino) diethanol -	Severe skin irritation.	14 d	Rabbit	OECD 404

### **Serious eye damage/irritation**

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

Product / Substance name CAS / EC no.	Result	Species	Method / Guideline
Amine aromatic , alkylated -	Not irritating.	Rabbit	OECD 405

### **Respiratory or skin sensitisation**

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

Product / Substance name CAS / EC no.	Result	Species	Method / Guideline
Amine aromatic , alkylated -	Not sensitising.	Guinea Pig	OECD 406
2,2'-(C16-18 (evennumbered, C18 unsaturated) alkyl imino) diethanol -	Not sensitising.	Guinea Pig	OECD 406

### **Germ cell mutagenicity**

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

### **Carcinogenicity**

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

### **Reproductive toxicity**

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



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Product / Substance name CAS / EC no.	Exposure route	Species	Result	Other
Amine aromatic , alkylated -	Oral.	Rat.	Suspected of damaging fertility.	OECD 421

### **STOT-single exposure**

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

### **STOT-repeated exposure**

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

### **Aspiration hazard**

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

## **11.2. Information on other hazards**

### **Endocrine disrupting properties**

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### **Other information**

No data available.

## **SECTION 12: Ecological information**

### **12.1. Toxicity**

#### **Acute toxicity**

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

#### **Acute fish toxicity**

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species	Method / Guideline
Amine aromatic , alkylated -	LC50	100 mg/l	96 hr.	Fish.	OECD 203
2,2'-(C16-18 (even-numbered, C18	L50	0.1 mg/l	96 hr.	Fish.	OECD 203



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Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species	Method / Guideline
unsaturated) alkyl imino) diethanol -					

### **Acute algae toxicity**

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species	Method / Guideline
Amine aromatic , alkylated -	EC50	> 100 mg/l	72 hr.	Algae.	OECD 201
2,2'-(C16-18 (even- numbered, C18 unsaturated) alkyl imino) diethanol -	EC50	0.0538 mg/l	72 hr.	Algae.	OECD 201

### **Acute crustacean toxicity**

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species	Method / Guideline
2,2'-(C16-18 (even- numbered, C18 unsaturated) alkyl imino) diethanol -	EC50	0.043 mg/l	48 hr.	Water Flea.	OECD 202
base oil, low viscous -	EL50	> 10,000 mg/	48 hr.	Water Flea.	OECD 202
Amine aromatic , alkylated -	EC50	51 mg/l	48 hr.	Daphnia magna	OECD 202

### **Chronical toxicity**

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



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Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species	Method / Guideline
base oil, low viscous -	NOEC	> 1000 mg/l	14 d	Fish.	-
base oil, low viscous -	NOEC	10 mg/l	21 d	Water Flea.	OECD 211
2,2'-(C16-18 (even-numbered, C18 unsaturated) alkyl imino) diethanol -	EC10	0.0107 mg/l	21 d	Water Flea.	OECD 211
base oil, low viscous -	NOEC	> 100 mg/l	72 hr.	Algae.	OECD 201
2,2'-(C16-18 (even-numbered, C18 unsaturated) alkyl imino) diethanol -	NOEC	0.0156 mg/	72 hr.	Algae.	-

## 12.2. Persistence and degradability

Not applicable for mixtures.

Product / Substance name CAS / EC no.	Duration	Result	Degradation	Method / Guideline
Amine aromatic , alkylated -	-	Not readily biodegradable.	-	-
2,2'-(C16-18 (even-numbered, C18 unsaturated) alkyl imino) diethanol -	28 d	The substance is readily biodegradable.	63%	OECD 301D

## 12.3. Bioaccumulative potential

Not applicable for mixtures.

## 12.4. Mobility in soil

### **Mobility**

Not applicable for mixtures.



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## 12.5. Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB in a concentration  $\geq 0,1$  %.

## 12.6. Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## 12.7. Other adverse effects

Harmful to aquatic life with long lasting effects.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### Disposal considerations

Dispose in accordance with all applicable regulations.

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

Waste code	Waste description
13 02 06*	synthetic engine, gear and lubricating oils

Please note - an asterisk (\*) next to a code denotes that it is HAZARDOUS WASTE.

## SECTION 14: Transport information

### 14.1. UN number

Not regulated.

### 14.2. UN proper shipping name

#### ADR / RID / ADN proper shipping name

Not regulated.

### 14.3. Transport hazard class(es)

#### Label

Not regulated.

#### ADR / RID Class

Not regulated.



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**ADR / RID Classification code**

Not regulated.

**ADR / RID hazard identification number**

Not regulated.

**IMDG Class**

Not regulated.

**IATA Class**

Not regulated.

**ADN Class**

Not regulated.

**ADN Class Code**

Not regulated.

**14.4. Packing group**

Not regulated.

**14.5. Environmental hazards**

Not regulated.

**IMDG Marine Pollutant**

Not regulated.

**14.6. Special precautions for user**

Not regulated.

**IMDG EmS**

Not regulated.

**14.7. Maritime transport in bulk according to IMO instruments**

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code : Not applicable.

## SECTION 15: Regulatory information

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

**EU regulations**

Ozone depleting substances (1005/2009/EU): None.

Regulation EC 850/2004 on persistent organic pollutants. : None.

**National regulations**

No data available



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### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

## SECTION 16: Other information

### ***Phrase meaning***

Aquatic Chronic 3 - Hazardous to the aquatic environment — Chronic hazard category 3

Asp. Tox. 1 - Aspiration hazard, hazard category 1

Repr. 2 - Reproductive toxicity, hazard category 2

Acute Tox. 4 - oral - Acute toxicity, oral, hazard category 4

Skin Corr. 1C - Skin corrosion, hazard category 1C

Eye Dam. 1 - Serious eye damage, hazard category 1

Aquatic Acute 1 - Hazardous to the aquatic environment — Acute hazard category 1

Aquatic Chronic 1 - Hazardous to the aquatic environment — Chronic hazard category 1

Skin Corr. 1B - Skin corrosion, hazard category 1B

Skin Sens. 1A - Skin sensitisation, hazard category 1, sub-category 1A

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H361f Suspected of damaging fertility

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.

EUH208 Contains Triazole amine derivative. May produce an allergic reaction.



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### Other

#### **Additional information**

The classification complies with the current GB lists; however, it has been supplemented with expert literature information and information provided by/about our company. The following evaluation methods were used: On the basis of test data; Calculation Method; Bridging Principle "Substantially similar mixtures"; Expert Judgement.

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.