



**Trade name: ZF PowerFluid Plus**

ZF Aftermarket

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

**1.1 Product identifier**

Trade name: ZF PowerFluid Plus

Product code: 0671.090.535  
0671.090.536  
0671.090.537  
0769.126.671

**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](http://www.zf.com/contact)**

**1.4 Emergency telephone number**

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

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

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**2. Hazards identification**

**2.1 Classification of the substance or mixture**

The product has been classified and labelled as hazardous according to regulation (EU) 1272/2008 (CLP).

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

**Environmental Hazards**

Chronic hazards to the aquatic environment

Category 3

H412: Harmful to aquatic life with long lasting effects.

**Hazard summary**

PHYSICAL HAZARDS: No data available.



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## 2.2 Label elements

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

### Precautionary Statement

**Prevention:** 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.

**Supplemental label information** EUH208: Contains olefin derivative, Phosphite. May produce an allergic reaction.

## 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.

### 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.

## 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.
Base oil, low viscous	EINECS: 265-157-1	1,00% - <10,00%	01-2119484627-25
ZnDTP	EINECS: 224-235-5	1,00 - <2,50%	01-2119493635-27
olefin derivative	Polymer	0,10 - <1,00%	01-2119976364-28



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Phosphite	EINECS: 202-908-4	0,10 - <0,25%	01-2119511213-58
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\* 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	EINECS: 265-157-1	CLP: Asp. Tox. 1; H304
ZnDTP	EINECS: 224-235-5	CLP: Eye Dam. 1; H318, Aquatic Chronic 2; H411
olefin derivative	Polymer	CLP: Skin Sens. 1B; H317
Phosphite	EINECS: 202-908-4	CLP: Acute Tox. 4; H302, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, Eye Irrit. 2; H319, Skin Irrit. 2; H315, Skin Sens. 1; H317

CLP: Regulation No. 1272/2008.

**specific concentration limit**

Chemical name	Identifier	Specific concentration limit	Hazard class	Hazard Category	Hazard statements
ZnDTP	EINECS: 224-235-5	> 50 %	Schwere Augenschädigung	1	H318
		> 50 %	Augenreizung	2	H319
Phosphit	EINECS: 202-908-4	>= 5 %	Reizwirkung auf die Haut	2	H315
		>= 5 %	Augenreizung	2	H319

For the wording of the listed hazard statements refer to section 16.



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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:

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

Instantly remove any clothing soiled by the product.

Inhalation:

Eye contact:

Supply fresh air; consult doctor in case of symptoms.

##### **4.2**

Skin Contact:

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

Ingestion:

Wash with soap and water.

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

Rinse mouth thoroughly.

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:

Unsuitable 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.

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

Water with a full water jet.



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During fire, gases hazardous to health may be formed.

**5.3 Advice for firefighters**

Special fire fighting procedures:

Special protective equipment for fire-fighters:

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.

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

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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**

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 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**



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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**

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**

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.
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<b>Eye/face protection:</b>	Avoid contact with skin and eyes. Goggles/face shield are recommended. If risk of splashing, wear safety goggles or face shield.
<b>Skin protection</b>	
<b>Hand protection:</b>	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.
<b>Other:</b>	Do not carry cleaning cloths impregnated with the product in trouser pockets. Wear suitable protective clothing.
<b>Respiratory protection:</b>	Ensure good ventilation/exhaustion at the workplace. Avoid breathing vapour/ aerosol.
<b>Thermal hazards:</b>	Not known.
<b>Hygiene measures:</b>	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.
<b>Environmental controls:</b>	No data available.

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## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**SAFETY DATA SHEET**  
 According to Regulation (EC) No. 1907/2006 (REACH)  
 Article 31, Annex II as amended.



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Physical state: liquid  
 Form: liquid  
 Colour: Yellow  
 Odor: Characteristic  
 Odor Threshold: Not applicable for mixtures  
 pH: substance/mixture is non-soluble (in water)

Freezing point	Not applicable for mixtures	
Boiling point	Value not relevant for classification	
Flash point	246 °C	
Evaporation rate	Not applicable for mixtures	
Flammability (solid, gas)	Value not relevant for classification	
Flammability Limit - Upper (%)–:	Value not relevant for classification	
Flammability Limit - Lower (%)–:	Value not relevant for classification	
Vapour pressure	Not applicable for mixtures	
Vapor density (air=1):	Not applicable for mixtures	
Density	0,87 g/ml (15,00 °C)	
<b>Solubility(ies)</b>		
Solubility in Water	Insoluble in water	
Solubility (other)	No data available.	
Partition coefficient: n-octanol/water	Not applicable for mixtures	





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Autoignition temperature	Value not relevant for classification	
Decomposition Temperature:	Value not relevant for classification	
Viscosity, kinematic	65mm <sup>2</sup> /s (40°C)	
Explosive properties	Value not relevant for classification	
Oxidizing properties	Value not relevant for classification	
Particle characteristics:	Not applicable	

**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. 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**



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

**Specified substance(s)**

|| Base oil, low viscous  
ZnDTP LD 50 (Rat): > 5.000 mg/kg (OECD 423)  
LD 50 (Rat): 4.358 mg/kg

Phosphite LD 50 (Rat): 1.590 mg/kg

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

**Specified substance(s)**

|| Base oil, low viscous  
ZnDTP LD 50 (Rabbit): > 5.000 mg/kg (OECD 402)  
LD 50 (Rabbit): > 5.000 mg/kg (OECD 402)

**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.

Specified substance(s)  
ZnDTP (Rabbit): None

**Serious eye damage/eye irritation**

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

Specified substance(s)  
ZnDTP (Rabbit): Slightly irritating

**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)  
ZnDTP OECD 406-1 (Guinea Pig)  
Not a skin sensitizer.



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||olefin derivative May cause an allergic skin reaction.

**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.

**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 toxicity**

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

**Other Adverse Effects:**

No data available

**11.2 Information on other hazards**

**Endocrine disrupting properties**

Product:  
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. Ecological information**

**12.1 Toxicity**

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

**Fish**



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**Specified substance(s)**

Base oil, low viscous	LC 50 (Fish, 96 h): > 101 mg/l (OECD 203)
ZnDTP	LC 50 (Fish, 96 h): 4,4 mg/l (OECD 203)
olefin derivative	LC 50 (Fish, 96 h): > 101 mg/l

**Aquatic Invertebrates**

<b>Specified substance(s)</b>	
Base oil, low viscous	EC 50 (Water Flea, 48 h): > 10.000 mg/l (OECD 202)
ZnDTP	EC 50 (Water Flea, 48 h): 75 mg/l (OECD 202)
olefin derivative	EC 50 (Water Flea, 48 h): > 101 mg/l

**Chronic Toxicity Product:**

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

**Fish**

**Specified substance(s)**

ZnDTP NOEC (Fish, 4 d): 3,2 mg/l

**Aquatic Invertebrates**

**Specified substance(s)**

ZnDTP NOEC (Water Flea, 21 d): 0,4 mg/l

olefin derivative

NOEC (Water Flea, 21 d): 10 mg/l

**Toxicity to Aquatic Plants**

**Specified substance(s)**

Base oil, low viscous EC 50 (Alga, 72 h): > 101 mg/l

ZnDTP EC 50 (Alga, 72 h): 410 mg/l

NOEC (Alga, 72 h): 220 mg/l

olefin derivative

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

**12.2 Persistence and degradability**

**Biodegradability**

Product:

Not applicable for mixtures

**Specified substance(s)**

ZnDTP 5 % (28 d, OECD 301B) Not readily degradable.



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olefin derivative 17,3 % (28 d) Not readily degradable.

**12.3 Bioaccumulative potential**

Bioakkumulation Not applicable for mixtures  
Product:

**12.4 Mobility in soil**

Product: Not applicable for mixtures

**12.5 Results of PBT and vPvB assessment**

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

**12.6 Endocrine disrupting properties**

Product:  
The substance/mixture does not contain components considered to have endo-  
crine disrupting properties according to REACH Article 57(f) or Com-mission Dele-  
gated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at lev-  
els of 0.1% or higher.

**12.7 Other adverse effects**

Harmful to aquatic life with long lasting effects.

Water Hazard Class (WGK): WGK 2: significantly 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: Discharge, treatment, or disposal may be  
subject to national, state, or local laws.

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: --



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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: --

**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 Maritime transport in bulk according to IMO instruments:** Not applicable.

**15. Regulatory information**

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

EU Regulations

EU. Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex I, Controlled Substances:

EU. Regulation 2019/1021/EU on persistent organic pollutants (POPs) (recast), as amended:

National Regulations

Water Hazard Class

WGK 2: significantly water-endangering.



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|| (WGK):

### 15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out.

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### 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.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.

Other information:

The classification complies with the current EU lists; however, it has been supplemented with expert literature information and information provided by/about our company. It was derived from the test data and/or the application of the conventional method.

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.