



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: 0681.200.750
0681.200.751
0681.200.752

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 30 3068 6790 (Giftnotruf Berlin)

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).

Environmental Hazards

Chronic hazards to the aquatic environment
Category 3
H412: Harmful to aquatic life with long lasting effects.

PHYSICAL HAZARDS: No data available.

2.2 Label elements

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

Precautionary Statement



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Prevention: P273: Avoid release to the environment.

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. 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.
base oil, paraffinic	EINECS: 265-159-2	10,00 - <20,00%	01-2119480132-48
ZnDTP	EINECS: 224-235-5	1,00 - <2,50%	01-2119493635-27
olefin derivative	Polymer	0,10 - <1,00%	01-2119976364-28
Phosphite	EINECS: 202-908-4	0,10 - <0,25%	01-2119511213-58

* 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, paraffinic	EINECS: 265-159-2	CLP: Asp. Tox. 1;H304
ZnDTP	EINECS: 224-235-5	CLP: Eye Dam. 1;H318, Aquatic Chronic 2; H411



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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.

For the wording of the listed risk phrases refer to section 16.

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

5.1 Extinguishing media

Suitable extinguishing media: CO₂, 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.

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.

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.

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



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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

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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Eye/face protection:	Safety glasses (EN 166) recommended
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during refilling.

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/ 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 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:	Yellow
Odour:	Characteristic
Odour Threshold:	Not applicable for mixtures



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pH: Not applicable

Freezing point	Not applicable for mixtures	
Boiling point	Value not relevant for classification	
Flash point	233 °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	0,86 g/cm ³ (15°C)	DIN 51757
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	53mm ² /s (40°C)	DIN 51562-1
Explosive properties	Value not relevant for classification	



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Oxidizing properties	Value not relevant for classification	
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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

- Oral
 - Product: Not classified for acute toxicity
 - Specified substance(s)
 - base oil, paraffinic LD 50 (Rat): > 5.000 mg/kg
 - ZnDTP 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, paraffinic LD 50 (Rabbit): > 5.000 mg/kg
 - Phosphite LD 50 (Rabbit): > 2.000 mg/kg
- Inhalation
 - Product: Not classified for acute toxicity based on available data.



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Specified substance(s)
base oil, paraffinic

LC 50 (Rat, 4 h): > 5 mg/l

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 sensitisation

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.

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.

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)
base oil, paraffinic LC 50 (Fish, 96 h): > 101 mg/l
ZnDTP LC 50 (Fish, 96 h): 4,4 mg/l
olefin derivative LC 50 (Fish, 96 h): > 101 mg/l

Aquatic Invertebrates
Specified substance(s)
ZnDTP EC 50 (Water Flea, 48 h): 75 mg/l
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)
ZnDTP EC 50 (Alga, 72 h): 410 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)

12.3 Bioaccumulative potential

Bioakkumulation Product: Not applicable for mixtures

12.4 Mobility in soil

Mobility Not applicable for mixtures



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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

Harmful to aquatic life with long lasting effects.
Water Hazard Class (WGK): WGK 2: water-endangering.

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

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: --
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: --



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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.

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.

16. Other information

Wording of the H-statements in section 2 and 3

H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.



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- 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 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.