

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

1.1 Product identifier

Gear oil DCTF-2
Article number: 49700, 194479

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

1.2.1 Relevant uses

Gearbox oil

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company Ferdinand Bilstein GmbH + Co. KG
Wilhelmstr. 47
58256 Ennepetal / GERMANY
Phone +49 2333 911-0
Fax +49 2333 911-444
Homepage www.febi.com
E-mail info@febi.com

Address enquiries to

Technical information info@febi.com
Safety Data Sheet info@febi.com

1.4 Emergency telephone number

Advisory body +49 (0)89-19240 (24h) (English)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

No classification.

2.2 Label elements

The product does not require a hazard in accordance to OSHA Standard 29 CFR 1910.1200 (HCS 2012)

Hazard pictograms None
Signal word None
Hazard statements None
Precautionary statements None

2.3 Other hazards

Environmental hazards Does not contain any PBT or vPvB substances.
Contains no ingredients with endocrine-disrupting properties.

Other hazards Further hazards were not determined with the current level of knowledge.

This product is classified as non-hazardous in accordance to OSHA Standard 29 CFR 1910.1200.

SECTION 3: Composition / Information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

The product is a mixture.

| Range [%] | Substance |
|------------|---|
| 50 - < 100 | 1-Decene, homopolymer, hydrogenated |
| | CAS: 68037-01-4 |
| 10 - < 20 | 1-Decene, Dimer, hydrogenated |
| | CAS: 68649-11-6 |
| 1 - < 5 | Isooctadecanoic acid, reaction products with tetraethylenepentamine |
| | CAS: 68784-17-8 |

Comment on component parts For full text of H-statements: see SECTION 16.
Contains less than 3% w/w DMSO-extract (only for mineral oils)

SECTION 4: First aid measures

4.1 Description of first aid measures

| | |
|----------------------------|---|
| General information | Take off contaminated clothing and wash before reuse. |
| Inhalation | Ensure supply of fresh air. In the event of symptoms seek medical treatment. |
| Skin contact | When in contact with the skin, clean with soap and water. Consult a doctor if skin irritation persists. |
| Eye contact | Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. |
| Ingestion | Seek medical advice immediately. Do not induce vomiting. |

4.2 Most important symptoms and effects, both acute and delayed

No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
If swallowed or in the event of vomiting, risk of product entering the lungs.
Forward this sheet to the doctor.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

| | |
|--|--|
| Suitable extinguishing media | Foam, dry powder, water spray jet, carbon dioxide. |
| Extinguishing media that must not be used | Full water jet. |

5.2 Special hazards arising from the substance or mixture

Risk of formation of toxic pyrolysis products.

5.3 Advice for firefighters

Do not inhale explosion and/or combustion gases.
Use self-contained breathing apparatus.
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Some risk of slipping due to spillage of product.
Forms slippery surfaces with water.

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6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up with absorbent material (e.g. oil binder).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid formation of aerosols.
Use only in well-ventilated areas.
The product is combustible.
Do not eat, drink or smoke when using this product.
After worktime and before work breaks the affected skin areas must be thoroughly cleaned.
Use barrier skin cream.
Cloths contaminated with product should not be kept in trouser pockets.
Contaminated work clothing should not be allowed out of the workplace.
Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Prevent penetration into the ground.
Do not store together with food and animal food/diet.
Keep container in a well-ventilated place.
Keep container tightly closed.

7.3 Specific end use(s)

See product use, SECTION 1.2



SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (US)

| |
|--|
| Substance |
| 1-Decene, Dimer, hydrogenated |
| CAS: 68649-11-6 |
| Long-term exposure: 5 mg/m ³ , oil mist (TWA) |

DNEL

| |
|--|
| Substance |
| 1-Decene, Dimer, hydrogenated, CAS: 68649-11-6 |
| Industrial, inhalative, Acute - systemic effects, 60 mg/m ³ 60 mg/m ³ |
| general population, inhalative, Acute - systemic effects, 50 mg/m ³ 60 mg/m ³ |
| 1-Decene, homopolymer, hydrogenated, CAS: 68037-01-4 |
| There are no DNEL values established for the substance. |
| Isooctadecanoic acid, reaction products with tetraethylenepentamine, CAS: 68784-17-8 |
| Industrial, inhalative, Long-term - systemic effects, 11,75 mg/m ³ |
| Industrial, dermal, Long-term - systemic effects, 3,33 mg/kg bw/day |
| general population, inhalative, Long-term - systemic effects, 2,9 mg/m ³ |
| general population, dermal, Long-term - systemic effects, 1,67 mg/kg bw/day |
| general population, oral, Long-term - systemic effects, 1,67 mg/kg bw/day |

PNEC

| |
|--|
| Substance |
| 1-Decene, Dimer, hydrogenated, CAS: 68649-11-6 |
| There are no PNEC values established for the substance. |
| 1-Decene, homopolymer, hydrogenated, CAS: 68037-01-4 |
| There are no PNEC values established for the substance. |
| Isooctadecanoic acid, reaction products with tetraethylenepentamine, CAS: 68784-17-8 |
| freshwater, 0.46 mg/L |
| sediment (seawater), 0,046 mg/L 0,46 mg/L 0,46 mg/L 0,46 mg/L |
| sewage treatment plants (STP), 1000 mg/L 0,46 mg/L 0,46 mg/L 0,46 mg/L |
| sediment (freshwater), 38100 mg/kg sediment dw 0,46 mg/L 0,46 mg/L 0,4 |
| sediment (seawater), 3810 mg/kg sediment dw 0,46 mg/L 0,46 mg/L 0,46 |
| soil, 10 mg/kg soil dw 0,46 mg/L 0,46 mg/L 0,46 mg/L |
| oral (food), 33,3 mg/kg food 0,46 mg/L 0,46 mg/L |



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0,46 mg/L

8.2 Exposure controls

| | |
|--|--|
| Additional advice on system design | Ensure adequate ventilation on workstation. Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances. General limit for oil mist should be noted. |
| Eye protection | Safety glasses. (EN 166:2001) |
| Hand protection | The details concerned are recommendations. Please contact the glove supplier for further information. > 0,4mm: Nitrile rubber, >120 min (EN 374-1/-2/-3). > 0,4mm: butyl rubber, > 120 min (EN 374) |
| Skin protection | light protective clothing |
| Other | Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier. Do not inhale gases/vapors/aerosols. Avoid contact with eyes and skin. |
| Respiratory protection | Breathing apparatus in the event of aerosol or mist formation. Short term: filter apparatus, combination filter A-P2. |
| Thermal hazards | No information available. |
| Delimitation and monitoring of the environmental exposition | Comply with applicable environmental regulations limiting discharge to air, water and soil. |

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|------------------------------|
| Physical state | Liquid |
| Form | Liquid |
| Color | light yellow |
| Odor | characteristic |
| Odor threshold | No information available. |
| pH-value | Not applicable |
| pH-value [1%] | Not applicable |
| Boiling point or initial boiling point and boiling range [°C] | Not applicable |
| Flash point [°C] | 205 |
| Flammability | Not explosive. |
| Lower explosion limit | Not applicable |
| Upper explosion limit | Not applicable |
| Oxidizing properties | No |
| Vapor pressure/gas pressure [kPa] | Not determined |
| Density [g/cm ³] | 0,83 (15 °C / 59,0 °F) |
| Relative density | Not determined |
| Bulk density [kg/m ³] | Not applicable |
| Solubility in water | virtually insoluble |
| Solubility other solvents | No information available. |
| Partition coefficient n-octanol/water (log value) | No information available. |
| Kinematic viscosity | 23,5 mm ² /s 40°C |
| Relative vapour density | No information available. |
| Melting point [°C] | No information available. |
| Auto-ignition temperature [°C] | Not applicable |
| Decomposition temperature [°C] | No information available. |
| Particle characteristics | No information available. |

9.2 Other information

None

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

The product is stable under standard conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known.

10.4 Conditions to avoid

No special measures necessary.



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10.5 Incompatible materials

Strong oxidizing agent.
strong acids

10.6 Hazardous decomposition products

No hazardous decomposition products known.



SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

| |
|--|
| Product |
| ATE-mix, oral, > 5000 mg/kg bw |
| Substance |
| 1-Decene, Dimer, hydrogenated, CAS: 68649-11-6 |
| LD50, oral, Rat, 2000 - 5000 mg/kg bw |
| 1-Decene, homopolymer, hydrogenated, CAS: 68037-01-4 |
| LD50, oral, Rat, 2000 - 5000 mg/kg bw |
| NOAEL, oral, Rat, 1000 - 6771 mg/kg bw/day |
| Isooctadecanoic acid, reaction products with tetraethylenepentamine, CAS: 68784-17-8 |
| LD50, oral, Rat, >5000 mg/kg bw (OECD 401) |
| >5000 mg/kg bw (OECD 40) |

Acute dermal toxicity

| |
|--|
| Product |
| ATE-mix, dermal, 102.244 mg/kg bw |
| Substance |
| 1-Decene, Dimer, hydrogenated, CAS: 68649-11-6 |
| LD50, dermal, Rat, 2000 mg/kg bw |
| 1-Decene, homopolymer, hydrogenated, CAS: 68037-01-4 |
| LD50, dermal, Rat, 2000 mg/kg bw |
| Isooctadecanoic acid, reaction products with tetraethylenepentamine, CAS: 68784-17-8 |
| LD50, dermal, Rabbit, >2000 mg/kg bw (OECD 402) |
| >5000 mg/kg bw (OECD 40) |

Acute inhalational toxicity

| |
|--|
| Product |
| ATE-mix, inhalativ (mist), 14,93 mg/l |
| Substance |
| 1-Decene, Dimer, hydrogenated, CAS: 68649-11-6 |
| LC50, inhalative, Rat, 900 - 5200 mg/m³ air, 4h |
| 1-Decene, homopolymer, hydrogenated, CAS: 68037-01-4 |
| LC50, inhalative, Rat, 900 - 5200 mg/m³ air |

Serious eye damage/irritation Based on the information available, the classification criteria have not been fulfilled.

Skin corrosion/irritation Based on the information available, the classification criteria have not been fulfilled.

Respiratory or skin sensitisation Toxicological data of complete product are not available.
May produce an allergic reaction.
Calculation method

| |
|--|
| Substance |
| 1-Decene, Dimer, hydrogenated, CAS: 68649-11-6 |
| dermal, Guinea pig, OECD 406, non-sensitizing |

Specific target organ toxicity — Based on the information available, the classification criteria have not been fulfilled.

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single exposure

Specific target organ toxicity — repeated exposure — Based on the information available, the classification criteria have not been fulfilled.

| |
|--|
| Substance |
| 1-Decene, Dimer, hydrogenated, CAS: 68649-11-6 |
| NOAEL, oral, Rat, 1000 - 6771 mg/kg bw/day |

Mutagenicity

Based on the information available, the classification criteria have not been fulfilled.

| |
|--|
| Substance |
| 1-Decene, Dimer, hydrogenated, CAS: 68649-11-6 |
| no adverse effect observed |

Reproduction toxicity

Based on the information available, the classification criteria have not been fulfilled.

Carcinogenicity

Based on the information available, the classification criteria have not been fulfilled.

Aspiration hazard

Based on the information available, the classification criteria have not been fulfilled.

General remarks

Toxicological data of complete product are not available.
The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 12: Ecological information

12.1 Toxicity

| |
|---|
| Product |
| Based on the information available, the classification criteria have not been fulfilled. |
| Substance |
| 1-Decene, Dimer, hydrogenated, CAS: 68649-11-6 |
| No information available. |
| 1-Decene, homopolymer, hydrogenated, CAS: 68037-01-4 |
| EL50, (48h), Invertebrates, 1 g/L |
| EL50, (48h), Algae, 1 g/L |
| LL50, (96h), fish, 1 g/L |
| Isooctadecanoic acid, reaction products with tetraethylenepentamine, CAS: 68784-17-8 |
| LC50, (96h), Pimephales promelas, >1000 mg/L (OECD 203) >1000 mg/L (OECD 203) |
| EC50, (48h), Daphnia magna, >1000 mg/L (OECD 202) >1000 mg/L (OECD 203) |
| EC50, (96h), Pseudokirchneriella subcapitata, 44 mg/L (OECD 201) >1000 mg/L (OECD 203) |
| EL50, (14d), Daphnia magna, 72 mg/L (OECD 211) >1000 mg/L (OECD 203) |

12.2 Persistence and degradability

Does not contain any relevant substances fulfilling the classification criteria.

Behaviour in environment compartments

Not determined

Behaviour in sewage plant

Not determined

Biological degradability

Not determined

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12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Endocrine disrupting properties

Contains no ingredients with endocrine-disrupting properties.

12.7 Other adverse effects

Ecological data of complete product are not available.

Do not discharge product unmonitored into the environment or into the drainage.

The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Disposal in an incineration plant in accordance with the regulations of the local authorities.
In according to RoHS!

Contaminated packaging

Uncontaminated packaging may be taken for recycling.
Packaging that cannot be cleaned should be disposed of as for product.

RCRA Hazard Class (40CFR 261)

Waste must be disposed of in accordance with federal, state and local environmental control regulations. Consult your local or regional authorities.

SECTION 14: Transport

14.1 UN number

Transport by land according to ADR/RID Not applicable

Inland navigation (ADN) Not applicable

Marine transport in accordance with IMDG Not applicable

Air transport in accordance with IATA Not applicable

DOT Road Shipment Information (49 CFR) Not applicable



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14.2 UN proper shipping name

| | |
|--|-------------------------------------|
| Transport by land according to ADR/RID | NO DANGEROUS GOODS |
| Inland navigation (ADN) | NO DANGEROUS GOODS |
| Marine transport in accordance with IMDG | NOT CLASSIFIED AS "DANGEROUS GOODS" |
| Air transport in accordance with IATA | NOT CLASSIFIED AS "DANGEROUS GOODS" |
| DOT Road Shipment Information (49 CFR) | NOT CLASSIFIED AS "DANGEROUS GOODS" |

14.3 Transport hazard class(es)

| | |
|--|----------------|
| Transport by land according to ADR/RID | Not applicable |
| Inland navigation (ADN) | Not applicable |
| Marine transport in accordance with IMDG | Not applicable |
| Air transport in accordance with IATA | Not applicable |
| DOT Road Shipment Information (49 CFR) | Not applicable |

14.4 Packing group

| | |
|--|----------------|
| Transport by land according to ADR/RID | Not applicable |
| Inland navigation (ADN) | Not applicable |
| Marine transport in accordance with IMDG | Not applicable |
| Air transport in accordance with IATA | Not applicable |
| DOT Road Shipment Information (49 CFR) | Not applicable |

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14.5 Environmental hazards

Transport by land according to ADR/RID No

Inland navigation (ADN) No

Marine transport in accordance with IMDG No

Air transport in accordance with IATA No

DOT Road Shipment Information (49 CFR) No

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

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

US Regulations

National regulations 29 CFR 1910.1200-HCS 2012, OSHA-PEL, ACGIH-TLV, NTP, IARC, SARA Title III, NFPA, TSCA, California - Prop. 65

- SARA, 302 No information available.

- SARA, 311 No information available.

- SARA, 313 No information available.

- TSCA All chemical substances in this material are included on or exempted from listing on the TSCA Inventory.

- FDA No information available.

American Conference of Governmental Industrial Hygienists - ACGIH Ingredients not listed as carcinogens.

International Agency for Research on Cancer IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

National Toxicology Program - NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

HAP-VOC No information available.

Transport-regulations DOT-Classification, ADR (2023); IMDG-Code (2023, 41. Amdt.); IATA-DGR (2024)

15.2 Chemical safety assessment

For this product a chemical safety assessment has not been carried out.

SECTION 16: Other information

16.1 Abbreviations and acronyms:

ACGIH = American Conference of Governmental Industrial Hygienists;
ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route;
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses;
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure;
CAS = Chemical Abstracts Service;
CERCLA = Comprehensive Environmental Response, Compensation and Liability Act;
CFR = Code of Federal Regulations;
CPR = Controlled Products Regulations;
DMEL = Derived Minimum Effect Level;
DNEL = Derived No Effect Level;
DOT = Department of Transportation;
EC50 = Median effective concentration;
EPA = Environmental Protection Agency;
GHS = Globally Harmonized System of Classification and Labelling of Chemicals;
IATA = International Air Transport Association;
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk;
IC50 = Inhibition concentration, 50%;
IMDG = International Maritime Code for Dangerous Goods;
IARC = International Agency of Research on Cancer;
IATA = International Air Transport Association;
TSCA = Toxic Substance Control Act;
HMIS = Hazardous Materials Identification System;
NFPA = National Fire Protection Association;
NIOSH = National Institute for Occupational Safety and Health;
OSHA = Occupational Safety and Health Administration;
LC50 = Lethal concentration, 50%;
LD50 = Median lethal dose, 50%;
MARPOL = International Convention for the Prevention of Marine Pollution from Ships;
PBT = Persistent, Bioaccumulative and Toxic substance;
PNEC = Predicted No-Effect Concentration;
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals;
SARA = Superfund Amendments and Reauthorization Act;
TLV@TWA = Threshold limit value – time-weighted average;
TLV@STEL = Threshold limit value – short-time exposure limit;
VOC = Volatile Organic Compounds;
vPvB = very Persistent and very Bioaccumulative;

16.2 Ratings

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NFPA Ratings



TOP, FLAMMABILITY: 1 - Slight Hazard
LEFT, HEALTH: 1 - Slight Hazard
RIGHT, REACTIVITY: 1 - Slight Hazard
BOTTOM, SPECIAL NOTICE:

HMIS Ratings

| | |
|---------------------|---|
| HEALTH | 1 |
| FLAMMABILITY | 1 |
| PHYSICAL HAZARD | 1 |
| PERSONAL PROTECTION | X |

1 - Slight Hazard
1 - Slight Hazard
1 - Slight Hazard
X - Personal protection rating to be supplied by user depending on use conditions

PERSONAL PROTECTION:

- A - Safety Glasses
- B - Safety Glasses and Gloves
- C - Safety Glasses, Gloves and Protection Apron
- D - Face Shield, Gloves and Protection Apron
- E - Safety Glasses, Gloves and Dust Respirator
- F - Safety Glasses, Gloves, Protection Apron and Dust Respirator
- G - Safety Glasses, Gloves and Vapor Respirator.
- H - Splash Goggles, Gloves, Protection Apron and Vapor Respirator.
- I - Safety Glasses, Gloves, Dust Respirator and Vapor Respirator.
- J - Splash Goggles, Gloves, Protection Apron, Dust Respirator and Vapor Respirator.
- K - Airline Mask or Hood, Gloves, Full Suit and Boots.
- X - Personal protection rating to be supplied by user depending on use conditions

Modified position

None