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

1.1 Product identifier

febi 49700 - Gear oil DCTF-2
Article number: 49700

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 [REGULATION (EC) No 1272/2008]

No classification.

2.2 Label elements

The product is required to be labelled in accordance with regulation (EC) No 1272/2008 (CLP).

Hazard pictograms none

Signal word none

Hazard statements none

Precautionary statements none

Special labelling EUH210 Safety data sheet available on request.

Contains: 1,1'-[iminobis(ethyleneiminoethylene)]bis[3-(octadecenyl)pyrrolidine-2,5-dione].
EUH208 May produce an allergic reaction.

2.3 Other hazards

Environmental hazards Does not contain any PBT or vPvB substances.

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

SECTION 3: Composition / Information on ingredients

Product-type:

3.2 The product is a mixture.

Range [%]	Substance
50 - < 90	1-Decene, homopolymer, hydrogenated
	CAS: 68037-01-4, EINECS/ELINCS: 500-183-1, Reg-No.: 01-2119486452-34-XXXX
	GHS/CLP: Asp. Tox. 1: H304
10 - < 20	1-Decene, Dimer, hydrogenated
	CAS: 68649-11-6, EINECS/ELINCS: 500-228-5, Reg-No.: 01-2119493069-28-XXXX
	GHS/CLP: Acute Tox. 4: H332 - Asp. Tox. 1: H304
1 - < 5	Isooctadecanoic acid, reaction products with tetraethylenepentamine
	CAS: 68784-17-8, EINECS/ELINCS: 272-225-4, Reg-No.: 01-2119960832-33-XXXX
	GHS/CLP: Skin Irrit. 2: H315 - Eye Irrit. 2: H319
0,1 - < 1	1,1'-[iminobis(ethyleneiminoethylene)]bis[3-(octadecenyl)pyrrolidine-2,5-dione]
	CAS: 64051-50-9, EINECS/ELINCS: 264-637-8
	GHS/CLP: Skin Sens. 1B: H317 - Aquatic Chronic 3: H412

Comment on component parts Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
For full text of H-statements: see SECTION 16.

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 within 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.

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 (GB)

Substance
1-Decene, homopolymer, hydrogenated
CAS: 68037-01-4, EINECS/ELINCS: 500-183-1, Reg-No.: 01-2119486452-34-XXXX
Long-term exposure: 5 mg/m³, OSHA PEL

DNEL

Substance
1-Decene, Dimer, hydrogenated, CAS: 68649-11-6
Industrial, inhalative, Acute - systemic effects: 60 mg/m³.
general population, inhalative, Acute - systemic effects: 50 mg/m³.
Isooctadecanoic acid, reaction products with tetraethylenepentamine, CAS: 68784-17-8
Industrial, dermal, Long-term - systemic effects: 3,33 mg/kg bw/day.
Industrial, inhalative, Long-term - systemic effects: 11,75 mg/m³.
general population, oral, Long-term - systemic effects: 1,67 mg/kg bw/day.
general population, dermal, Long-term - systemic effects: 1,67 mg/kg bw/day.
general population, inhalative, Long-term - systemic effects: 2,9 mg/m³.

PNEC

Substance
Isooctadecanoic acid, reaction products with tetraethylenepentamine, CAS: 68784-17-8
oral (food), 33,3 mg/kg food 0,46 mg/L 0,46 mg/L 0,46 mg/L.
soil, 10 mg/kg soil dw 0,46 mg/L 0,46 mg/L 0,46 mg/L.
sediment (seawater), 3810 mg/kg sediment dw 0,46 mg/L 0,46 mg/L 0,46.
sediment (freshwater), 38100 mg/kg sediment dw 0,46 mg/L 0,46 mg/L 0,4.
sewage treatment plants (STP), 1000 mg/L 0,46 mg/L 0,46 mg/L 0,46 mg/L.
sediment (seawater), 0,046 mg/L 0,46 mg/L 0,46 mg/L 0,46 mg/L.
freshwater, 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.
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/vapours/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. (DIN EN 14387)
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

Form	liquid
Color	light yellow
Odor	characteristic
Odour threshold	No information available.
pH-value	not applicable
pH-value [1%]	not applicable
Boiling point [°C]	not applicable
Flash point [°C]	205
Flammability (solid, gas) [°C]	Not explosive.
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	not determined
Density [g/ml]	0,83 (15 °C / 59,0 °F)
Bulk density [kg/m³]	not applicable
Solubility in water	virtually insoluble
Partition coefficient [n-octanol/water]	No information available.
Viscosity	23,5 mm²/s 40°C
Relative vapour density determined in air	No information available.
Evaporation speed	No information available.
Melting point [°C]	No information available.
Autoignition temperature [°C]	not applicable
Decomposition temperature [°C]	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.

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 toxicity

Product
ATE-mix, inhalativ (mist), 14,93 mg/l.
ATE-mix, dermal, 102.244 mg/kg bw.
ATE-mix, oral, > 5000 mg/kg bw.

Substance
1-Decene, Dimer, hydrogenated, CAS: 68649-11-6
LD50, dermal, Rabbit: > 3000 mg/l.
LD50, oral, Rat: > 5000 mg/l.
LC50, inhalative, Rat: >1,81 mg/l 4h.
1-Decene, homopolymer, hydrogenated, CAS: 68037-01-4
LD50, dermal, Rabbit: > 2000 mg/kg (Lit.).
LD50, oral, Rat: > 2000 mg/kg (Lit.).
LC50, inhalative, Rat: > 5000 mg/m³ (Lit.).
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.
LD50, oral, Rat: >5000 mg/kg bw (OECD 401) >5000 mg/kg bw (OECD 40.

Serious eye damage/irritation	Based on the available information, the classification criteria are not fulfilled.
Skin corrosion/irritation	Based on the available information, the classification criteria are not fulfilled.
Respiratory or skin sensitisation	Toxicological data of complete product are not available. May produce an allergic reaction. Calculation method
Specific target organ toxicity — single exposure	Based on the available information, the classification criteria are not fulfilled.
Specific target organ toxicity — repeated exposure	Based on the available information, the classification criteria are not fulfilled.
Mutagenicity	Based on the available information, the classification criteria are not fulfilled.
Reproduction toxicity	Based on the available information, the classification criteria are not fulfilled.
Carcinogenicity	Based on the available information, the classification criteria are not fulfilled.
Aspiration hazard	Based on the available information, the classification criteria are not 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 available information, the classification criteria are not fulfilled.:

Substance
1-Decene, Dimer, hydrogenated, CAS: 68649-11-6
EC50, (48h), Daphnia magna: > 1000 mg/l.
EL50, (72h), Algae: >1000 mg/l.
NOELR, (21d), Daphnia magna: 125 mg/l.
LL50, (96h), Oncorhynchus mykiss: >1000 mg/l.
1-Decene, homopolymer, hydrogenated, CAS: 68037-01-4
EL50, (72h), Scenedesmus capricornutum: >1000 mg/l (OECD 201).
EL50, (48h), Daphnia magna: >1000 mg/l (OECD 202).
NOELR, (21d), Daphnia magna: 125 mg/l (OECD 211).
LL50, (96h), Oncorhynchus mykiss: >1000 mg/l (OECD 203).
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, (96h), Pseudokirchneriella subcapitata: 44 mg/L (OECD 201) >1000 mg/L (OECD 203).
EC50, (48h), Daphnia magna: >1000 mg/L (OECD 202) >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 a relevant substance that meets the classification criteria.

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	not determined

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 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

Waste material c It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

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

Waste no. (recommended) 130206*

Contaminated packaging

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

Waste no. (recommended) 150110*
150102
150104

SECTION 14: Transport information

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

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"

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

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

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

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

EEC-REGULATIONS	1991/689 (2001/118); 2010/75; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EEC (2016/2037/EC); (EU) 2015/830; (EU) 2016/131; (EU) 517/2014
TRANSPORT-REGULATIONS	ADR (2019); IMDG-Code (2019, 39. Amdt.); IATA-DGR (2019)
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011).
- Observe employment restrictions for people	no
- VOC (2010/75/CE)	<1 %

15.2 Chemical safety assessment

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

SECTION 16: Other information

16.1 Hazard statements (SECTION 03)

H332 Harmful if inhaled.
H304 May be fatal if swallowed and enters airways.
H412 Harmful to aquatic life with long lasting effects.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H315 Causes skin irritation.

16.2 Abbreviations and acronyms:

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
ATE = acute toxicity estimate
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
ELINCS = European List of Notified Chemical Substances
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
IUCLID = International Uniform ChemicaL Information Database
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
LC0 = lethal concentration, 0%
LOAEL = lowest-observed-adverse-effect level
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
STP = Sewage Treatment Plant
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

16.3 Other information

Classification procedure

Modified position none