

Safety Data Sheet

according to Regulation (EC) No 1907/2006

AirGO 3001

Revision date: 15.05.2019

Product code:

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

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1.2. Relevant identified uses of the substance or mixture and uses advised against**Use of the substance/mixture**

gear oil

Uses advised against

Any non-intended use.

1.3. Details of the supplier of the safety data sheet

Company name:	ZF Luftfahrttechnik GmbH
Street:	Flugplatzstraße
Place:	D-34379 Calden
Telephone:	+49 (0) 5674 701 - 0
Responsible Department:	ZF Luftfahrttechnik GmbH
1.4. Emergency telephone number:	Giftinformationszentrum-Nord / GIZ-Nord Poisons Centre Telefon / Phone +49 (0) 551/19240 24h / 7d

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

This mixture is not classified as hazardous in accordance with Regulation (EC) No. 1272/2008.

2.2. Label elements**Regulation (EC) No. 1272/2008****Special labelling of certain mixtures**

EUH208	Contains Ethanol, 2,2'-iminobis-, N-tallow alkyl derivs.. May produce an allergic reaction.
EUH210	Safety data sheet available on request.

Additional advice on labelling

Labelling according to Regulation (EC) No. 1272/2008 [CLP]: none

2.3. Other hazards

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.
No risks worthy of mention. Please observe the information on the safety data sheet at all times.

SECTION 3: Composition/information on ingredients**3.2. Mixtures**

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Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
157707-86-3	Dec-1-ene, trimers, hydrogenated			=<25 - =<50 %
	500-393-3		01-2119493949-12	
	Asp. Tox. 1; H304			
68037-01-4	Dec-1-ene, oligomers, hydrogenated			=<25 - =<50 %
	500-183-1		01-2119486452-34	
	Asp. Tox. 1; H304			
	petroleum distillates			=< 1 %
	Asp. Tox. 1; H304 EUH066			

Full text of H and EUH statements: see section 16.

Further Information

Product does not contain listed SVHC substances > 0,1 % according to Regulation (EC) No. 1907/2006 Article 59 (REACH)

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

In case of accident by inhalation: remove casualty to fresh air and keep at rest. In case of respiratory tract irritation, consult a physician.

After contact with skin

Gently wash with plenty of soap and water. In case of skin irritation, consult a physician.

After contact with eyes

Rinse cautiously with water for several minutes. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion

Rinse mouth thoroughly with water. Let water be drunken in little sips (dilution effect). Do NOT induce vomiting. In all cases of doubt, or when symptoms persist, seek medical advice.

4.2. Most important symptoms and effects, both acute and delayed

Has degreasing effect on the skin.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂). Dry extinguishing powder. alcohol resistant foam. Atomized water.

Unsuitable extinguishing media

High power water jet.

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5.2. Special hazards arising from the substance or mixture

Can be released in case of fire: Carbon monoxide. Carbon dioxide (CO₂). Nitrogen oxides (NO_x).

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Co-ordinate fire-fighting measures to the fire surroundings.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Safe handling: see section 7

Personal protection equipment: see section 8

6.2. Environmental precautions

Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Treat the recovered material as prescribed in the section on waste disposal.

Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Disposal: see section 13

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

Wear suitable protective clothing. (See section 8.)

Advice on protection against fire and explosion

Usual measures for fire prevention.

Further information on handling

General protection and hygiene measures: See section 8.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep container tightly closed in a cool, well-ventilated place.

Hints on joint storage

Do not store together with: Explosives. Oxidizing solids. Oxidizing liquids. Radioactive substances. Infectious substances. Food and animal feedingstuff

Further information on storage conditions

Keep the packing dry and well sealed to prevent contamination and absorption of humidity.

Recommended storage temperature: 20°C

Protect against: Light. UV-radiation/sunlight. heat. Humidity

7.3. Specific end use(s)

See section 1.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Additional advice on limit values**

Air limit values:

Possibility of exposure to Aerosol

Limit value = 5 mg/ m³ - Source: ACGIH

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8.2. Exposure controls**Appropriate engineering controls**

Provide adequate ventilation.

Protective and hygiene measures

Always close containers tightly after the removal of product. When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work.

Eye/face protection

Wear safety glasses; chemical goggles (if splashing is possible). DIN EN 166

Hand protection

In case of prolonged or frequently repeated skin contact:

Wear suitable gloves.

Suitable material:

FKM (fluororubber). - Thickness of glove material: 0,4 mm

Breakthrough time \geq 8 h

Butyl rubber. - Thickness of glove material: 0,5 mm

Breakthrough time \geq 8 h

CR (polychloroprenes, Chloroprene rubber). - Thickness of glove material: 0,5 mm

Breakthrough time \geq 8 h

NBR (Nitrile rubber). - Thickness of glove material: 0,35 mm

Breakthrough time \geq 8 h

PVC (Polyvinyl chloride). - Thickness of glove material: 0,5 mm

Breakthrough time \geq 8 h

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Before using check leak tightness / impermeability. In the case of wanting to use the gloves again, clean them before taking off and air them well.

Skin protection

Suitable protective clothing: Lab apron.

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required.

Environmental exposure controls

No special precautionary measures are necessary.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	liquid
Colour:	brown
Odour:	not determined

Test method

pH-Value: not determined

Changes in the physical state

Melting point: not determined

Initial boiling point and boiling range: not determined

Sublimation point: not determined

Softening point: not determined

Pour point: -66 °C

Flash point: > 220 °C DIN 51376

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Sustaining combustion: No data available

Explosive properties

The product is not: Spontaneously flammable.

Lower explosion limits: not determined

Upper explosion limits: not determined

Ignition temperature: not determined

Auto-ignition temperature

Gas: not determined

Decomposition temperature: not determined

Oxidizing properties

The product is not: Explosive.

Vapour pressure: not determined

Density (at 15 °C): 0,836 g/cm³

Water solubility: insoluble

Solubility in other solvents

not determined

Partition coefficient: >3

Viscosity / dynamic: not determined

Viscosity / kinematic:
(at 40 °C) 37,8 mm²/s

Flow time: not determined

Vapour density: not determined

Evaporation rate: not determined

Solvent separation test: not determined

Solvent content: not determined

9.2. Other information

Solid content: not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

Refer to chapter 10.5.

10.4. Conditions to avoid

Protect against: UV-radiation/sunlight. heat.

10.5. Incompatible materials

Materials to avoid: Oxidizing agents, strong. Reducing agents, strong.

10.6. Hazardous decomposition productsCan be released in case of fire: Carbon monoxide, Carbon dioxide (CO₂), Nitrogen oxides (NO_x)

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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Toxicokinetics, metabolism and distribution

No data available.

Acute toxicity

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

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
68037-01-4	Dec-1-ene, oligomers, hydrogenated				
	oral	LD50 >5000 mg/kg	Rat.	ECHA Dossier	
	dermal	LD50 >2000 mg/kg	Rat.	ECHA Dossier	
	inhalation (4 h) aerosol	LC50 >5,2 mg/l	Rat. (OECD 403)	ECHA Dossier	

Irritation and corrosivity

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

Sensitising effects

Contains Ethanol, 2,2'-iminobis-, N-tallow alkyl derivs.. May produce an allergic reaction.

May cause sensitisation especially in sensitive humans.

Carcinogenic/mutagenic/toxic effects for reproduction

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

Dec-1-ene, oligomers, hydrogenated

In vitro mutagenicity/genotoxicity: Method: OECD Guideline 471 (Bacterial Reverse Mutation Assay); Result: negative. Literature information: ECHA Dossier; Reproductive toxicity: Species: Rat; Method: OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test); Result: NOAEL > 1000 mg/kg; Literature information: ECHA Dossier

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.

Dec-1-ene, oligomers, hydrogenated

Subchronic oral toxicity: Method: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

Species: Rat; Results: NOAEL 1000 mg/kg; Literature information: ECHA Dossier

Aspiration hazard

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

Specific effects in experiment on an animal

No data available.

Further information

Symptoms:

Following skin contact: Has degreasing effect on the skin. Prolonged or repeated skin contact may cause removal of natural fat from the skin resulting in dermatitis (skin inflammation).

After ingestion: In case of large quantities: Nausea, Diarrhea.

Following inhalation: Strong exposure by inhalation of droplets in air or aerosols may cause irritation of the respiratory system.

SECTION 12: Ecological information

12.1. Toxicity

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
68037-01-4	Dec-1-ene, oligomers, hydrogenated					
	Acute fish toxicity	LC50 >750 mg/l	96 h	Pimephales promelas	MSDS extern	
	Acute crustacea toxicity	EC50 190 mg/l	48 h	Daphnia magna	MSDS extern	

12.2. Persistence and degradability

CAS No	Chemical name				
	Method	Value	d	Source	
	Evaluation				
68037-01-4	Dec-1-ene, oligomers, hydrogenated				
	OECD 301D / EEC 92/69 annex V, C.4-E	2 %	28	ECHA Dossier	
	Not easily bio-degradable (according to OECD-criteria).				

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
68037-01-4	Dec-1-ene, oligomers, hydrogenated	>6,5

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No data available.

Further information

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Observe in addition any national regulations! Consult the local waste disposal expert about waste disposal.
 Non-contaminated packages may be recycled.
 According to EAKV, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process.
 Control report for waste code/ waste marking according to EAKV:

Waste disposal number of waste from residues/unused products

130208 OIL WASTES AND WASTES OF LIQUID FUELS (EXCEPT EDIBLE OILS, AND THOSE IN CHAPTERS 05, 12 AND 19); waste engine, gear and lubricating oils; other engine, gear and lubricating oils; hazardous waste

Waste disposal number of used product

130208 OIL WASTES AND WASTES OF LIQUID FUELS (EXCEPT EDIBLE OILS, AND THOSE IN CHAPTERS 05, 12 AND 19); waste engine, gear and lubricating oils; other engine, gear and lubricating oils; hazardous waste

Waste disposal number of contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

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Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:	No dangerous good in sense of these transport regulations.
14.2. UN proper shipping name:	No dangerous good in sense of these transport regulations.
14.3. Transport hazard class(es):	No dangerous good in sense of these transport regulations.
14.4. Packing group:	No dangerous good in sense of these transport regulations.

Inland waterways transport (ADN)

14.1. UN number:	No dangerous good in sense of these transport regulations.
14.2. UN proper shipping name:	No dangerous good in sense of these transport regulations.
14.3. Transport hazard class(es):	No dangerous good in sense of these transport regulations.
14.4. Packing group:	No dangerous good in sense of these transport regulations.

Marine transport (IMDG)

14.1. UN number:	No dangerous good in sense of these transport regulations.
14.2. UN proper shipping name:	No dangerous good in sense of these transport regulations.
14.3. Transport hazard class(es):	No dangerous good in sense of these transport regulations.

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	No dangerous good in sense of these transport regulations.
14.2. UN proper shipping name:	No dangerous good in sense of these transport regulations.
14.3. Transport hazard class(es):	No dangerous good in sense of these transport regulations.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

Refer to section 6-8

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not relevant

SECTION 15: Regulatory information

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

EU regulatory information

2010/75/EU (VOC):	No information available.
2004/42/EC (VOC):	No information available.
Information according to 2012/18/EU (SEVESO III):	Not subject to 2012/18/EU (SEVESO III)

Additional information

The mixture is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].
REACH 1907/2006 Appendix XVII, No (mixture): not relevant

National regulatory information

Water contaminating class (D): 1 - slightly water contaminating

Additional information

TSCA: All components are listed or exempted.

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

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Dec-1-ene, trimers, hydrogenated
Dec-1-ene, oligomers, hydrogenated

SECTION 16: Other information**Changes**

Rev. 1.00; 17.12.2013, Initial release
Rev. 1.01; 08.10.2015, Documentation of changes: chapter: 1-16.
Rev. 1.10; 02.02.2017, Documentation of changes: chapter: 7, 8, 16.
Rev. 2.00; 01.02.2018, Documentation of changes: chapter: 1-16.
Rev. 3.00; 15.05.2019, Documentation of changes: chapter: 2-16.

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
AwSV: Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen
CAS Chemical Abstracts Service
DNEL: Derived No Effect Level
IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
LOAEL: Lowest observed adverse effect level
LOAEC: Lowest observed adverse effect concentration
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NOAEL: No observed adverse effect level
NOAEC: No observed adverse effect level
NTP: National Toxicology Program
N/A: not applicable
OSHA: Occupational Safety and Health Administration
PNEC: predicted no effect concentration
PBT: Persistent bioaccumulative toxic
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
SARA: Superfund Amendments and Reauthorization Act
SVHC: substance of very high concern
TRGS Technische Regeln fuerGefahrstoffe
TSCA: Toxic Substances Control Act
VOC: Volatile Organic Compounds
VwVwS: Verwaltungsvorschrift wassergefaehrdender Stoffe
WGK: Wassergefaehrdungsklasse

Relevant H and EUH statements (number and full text)

H304	May be fatal if swallowed and enters airways.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH208	Contains Ethanol, 2,2'-iminobis-, N-tallow alkyl derivs.. May produce an allergic reaction.
EUH210	Safety data sheet available on request.

Further Information

Classification according EC regulation 1272/2008 (CLP): - Classification procedure:
Health hazards: Calculation method.
Environmental hazards: Calculation method.
Physical hazards: On basis of test data and / or calculated and / or estimated.

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The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)