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

1.1. Product identifier

Alpine Brake Fluid DOT 4

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

Use of the substance/mixture

brake fluids

Uses advised against

No information available.

1.3. Details of the supplier of the safety data sheet

Company name:	Mitan Mineralöl GmbH	
Street:	Industriestraße 8	
Place:	D-49577 Ankum	
Telephone:	+49 (0)5462/7470-50	Telefax: +49 (0)5462/7470-33
e-mail:	info@mitan-oil.de	
e-mail (Contact person):	sicherheitsdatenblatt@mitan-oil.de	
Internet:	www.mitan-oil.de	

1.4. Emergency telephone number:

Giftinformationszentrum Nord (Göttingen)
+49 (0)551/19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:
Reproductive toxicity: Repr. 2
Hazard Statements:
Suspected of damaging the unborn child.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate

Signal word: Warning

Pictograms:

Hazard statements

H361d	Suspected of damaging the unborn child.

Precautionary statements

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P405	Store locked up.

P501 Dispose of contents/container to authorized waste disposal facility.

Special labelling of certain mixtures

EUH208 Contains Dihydro-3- (tetrapropenyl) furan-2,5-dione. May produce an allergic reaction.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate			< 30 %
	250-418-4		01-2119462824-33	
	Repr. 2; H361d			
143-22-6	2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutylether; butoxytriethylene glycol			< 10 %
	205-592-6	603-183-00-0		
	Eye Dam. 1; H318			
111-46-6	2,2'-oxybisethanol; diethylene glycol			< 10 %
	203-872-2	603-140-00-6		
	Acute Tox. 4; H302			
111-77-3	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether			< 3 %
	203-906-6	603-107-00-6		
	Repr. 2; H361d ***			
26544-38-7	Dihydro-3- (tetrapropenyl) furan-2,5-dione			< 0,1 %
	247-781-6		01-2119979080-37	
	Eye Irrit. 2, Skin Sens. 1A, Aquatic Chronic 4; H319 H317 H413			

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In all cases of doubt, or when symptoms persist, seek medical advice.
Use personal protection equipment.
Never give anything by mouth to an unconscious person or a person with cramps.

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary. Remove casualty to fresh air and keep warm and at rest.

After contact with skin

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. After contact with skin, wash immediately with plenty of water and soap.

After contact with eyes

After eye contact: Rinse immediately carefully and thoroughly with eye-bath or water. Consult an ophthalmologist. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink plenty of water. Induce vomiting when the affected person is not unconscious. Medical treatment necessary. IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

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

The following symptoms may occur: Allergic reactions, Unconsciousness, Conjunctival redness.
May cause drowsiness or dizziness.

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

Co-ordinate fire-fighting measures to the fire surroundings. Dry extinguishing powder (Extinguishing powder), Carbon dioxide (CO_2), alcohol resistant foam, Water mist

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Non-flammable. Carbon monoxide, Carbon dioxide (CO_2), Ketone, aldehydes
Heating causes rise in pressure with risk of bursting.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. Use personal protection equipment.
In case of fire: Evacuate area. Use water spray jet to protect personnel and to cool endangered containers.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately.
Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

Protective clothing
Keep people at a distance and stay on the windward side.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

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.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Keep away from sources of ignition - No smoking.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Further information on handling

When using do not eat, drink or smoke.
Use protective skin cream before handling the product.
Take off immediately all contaminated clothing and wash it before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations. Keep container tightly closed in a cool, well-ventilated place. Handle and open container with care.

Hints on joint storage

Keep away from food, drink and animal feedingstuffs.
Keep away from: Oxidising agent, Strong acid
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

7.3. Specific end use(s)

brake fluids

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
111-46-6	2,2'-Oxydiethanol	23	101		TWA (8 h)	WEL
111-77-3	2-(2-Methoxyethoxy)ethanol	10	50.1		TWA (8 h)	WEL

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate			
Worker DNEL, long-term		inhalation		29,1 mg/m³
Consumer DNEL, long-term		inhalation		7,2 mg/m³
Worker DNEL, long-term		dermal		8,3 mg/kg bw/day
Consumer DNEL, long-term		oral		4,1 mg/kg bw/day
111-77-3	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether			
Worker DNEL, long-term		dermal	systemic	0,53 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	50,1 mg/m³
Consumer DNEL, long-term		dermal	systemic	0,27 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	25 mg/m³
Consumer DNEL, long-term		oral	systemic	1,5 mg/kg bw/day

Additional advice on limit values

Personal air monitoring, Room air monitoring

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary . When using do not eat or drink.

Eye/face protection

Wear eye protection/face protection.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	colourless, amber
Odour:	characteristic
pH-Value:	7
Changes in the physical state	
Melting point:	-50 °C
Initial boiling point and boiling range:	230 °C
Auto-ignition temperature:	> 300 °C
Flash point:	> 100 °C
Sustaining combustion:	No data available
Flammability	
Solid:	not applicable
Gas:	not applicable
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Auto-ignition temperature	
Solid:	not applicable
Gas:	not applicable
Decomposition temperature:	>300 °C
Oxidizing properties	
Not oxidising.	
Vapour pressure:	not determined
Density (at 20 °C):	1,07 g/cm³
Bulk density:	not applicable
Water solubility:	easily soluble
Solubility in other solvents	
not determined	
Partition coefficient:	not determined
Viscosity / dynamic:	not determined
Viscosity / kinematic: (at 20 °C)	5-10 mm²/s
Vapour density:	not determined
Evaporation rate:	not determined

9.2. Other information

Solid content:	not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials

Acids, Oxidising agent, strong

10.6. Hazardous decomposition products

No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

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

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
111-46-6	2,2'-oxybisethanol; diethylene glycol				
	oral	ATE 500 mg/kg			
	dermal	LD50 11890 mg/kg	Rabbit		
111-77-3	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether				
	oral	LD50 ca. 6500 mg/kg	Rat		
	dermal	LD50 ca. 6450 mg/kg	Rabbit		
	inhalation (1 h) vapour	LC50 > 200 mg/l	Rat		
26544-38-7	Dihydro-3- (tetrapropenyl) furan-2,5-dione				
	oral	LD50 2900 mg/kg	Rat		
	dermal	LD50 >2000 mg/kg	Rat		
	inhalation (4 h) aerosol	LC50 5,3 mg/l	Rat		

Irritation and corrosivity

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

Sensitising effects

Contains Dihydro-3- (tetrapropenyl) furan-2,5-dione. May produce an allergic reaction.

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of damaging the unborn child. (Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate; 2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether)
Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.

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.

Aspiration hazard

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

Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] | [d]	Species	Source	Method
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate					
	Acute fish toxicity	LC50 222,2 mg/l	96 h			
	Acute crustacea toxicity	EC50 211,2 mg/l	48 h			
	Algea toxicity	NOEC 224,4 mg/l	3 d			
111-46-6	2,2'-oxybisethanol; diethylene glycol					
	Acute fish toxicity	LC50 > 32000 mg/l	96 h	Gambusia affinis		
111-77-3	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether					
	Acute fish toxicity	LC50 7500 mg/l	96 h	Lepomis macrochirus		
	Acute algae toxicity	ErC50 > 500 mg/l	72 h	Desmodesmus subspicatus		
	Acute crustacea toxicity	EC50 > 500 mg/l	48 h	Daphnia magna		
26544-38-7	Dihydro-3- (tetrapropenyl) furan-2,5-dione					
	Acute fish toxicity	LC50 >100 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)		
	Acute crustacea toxicity	EC50 >100 mg/l	48 h			
	Acute bacteria toxicity	(800 mg/l)	3 h			

12.2. Persistence and degradability

No information available.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
26544-38-7	Dihydro-3- (tetrapropenyl) furan-2,5-dione			
	OECD 301D	9,9%	28	
	Not readily biodegradable (according to OECD criteria)			

12.3. Bioaccumulative potential

No information available.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
111-46-6	2,2'-oxybisethanol; diethylene glycol	-1,98 (25°C)
111-77-3	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether	-0,68

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

No information available.

12.6. Other adverse effects

No information available.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

Contaminated packaging

This material and its container must be disposed of as hazardous waste. 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 this transport regulation.

14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.

14.4. Packing group: No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

14.1. UN number: No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.

14.4. Packing group: No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number: No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.

14.4. Packing group: No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.

14.4. Packing group: No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

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

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 54: 2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether

2010/75/EU (VOC):	32,98 % (352,886 g/l)
2004/42/EC (VOC):	12,98 % (138,886 g/l)
Information according to 2012/18/EU (SEVESO III):	Not subject to 2012/18/EU (SEVESO III)

National regulatory information

Employment restrictions:	Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Water contaminating class (D):	1 - slightly water contaminating
Skin resorption/Sensitization:	Causes allergic hypersensitivity reactions.

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2,3,4,5,6,7,8,9,10,11,12,13,15.

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
Repr. 2; H361d	Calculation method

Relevant H and EUH statements (number and full text)

H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H361d	Suspected of damaging the unborn child.
H413	May cause long lasting harmful effects to aquatic life.
EUH208	Contains Dihydro-3- (tetrapropenyl) furan-2,5-dione. May produce an allergic reaction.

Further Information

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights. The receiver of our product is singulary responsible for adhering to existing laws and regulations.

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