

Safety Data Sheet

according to UK REACH Regulation

ADDINOL Brake Fluid Dot 4

Revision date: 18.07.2025

Product code: 796027

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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/hearing protection.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P405	Store locked up.
P501	Dispose of contents/container to an appropriate recycling or disposal facility.

Additional advice on labelling

Product is classified and labelled in accordance with EC regulations or the corresponding national laws.

2.3. Other hazards

- Spilled product must not leak into the ground.
- Do not allow uncontrolled leakage of product into the environment.

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

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate			>=30 - <50 %
	250-418-4		01-2119462824-33	
	Repr. 2; H361d			
	Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol			5 - <10 %
	907-996-4		01-2119475115-41	
	Eye Dam. 1; H318			
110-97-4	1,1'-iminodipropan-2-ol; di-isopropanolamine			>=1 - <10 %
	203-820-9	603-083-00-7		
	Eye Irrit. 2; H319			

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

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
30989-05-0	250-418-4	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	>=30 - <50 %
	dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 2000 mg/kg		
	907-996-4	Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol	5 - <10 %
	dermal: LD50 = 3540 mg/kg; oral: LD50 = 3306 mg/kg Eye Dam. 1; H318: >= 30 - 100 Eye Irrit. 2; H319: >= 20 - <30		
110-97-4	203-820-9	1,1'-iminodipropan-2-ol; di-isopropanolamine	>=1 - <10 %
	oral: LD50 = 4765 mg/kg		

Further Information

DMSO-Extract < 3 %; IP 346. Classification system: The classification corresponds to the current EC lists and is completed by information from specialist literature and company information.

SECTION 4: First aid measures**4.1. Description of first aid measures**

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General information

Self-protection of the first aider. Change contaminated clothing. Do not put any product-impregnated cleaning rags into your trouser pockets.

After inhalation

Move victim to fresh air. Put victim at rest and keep warm. In case of breathing difficulties administer oxygen. If victim is at risk of losing consciousness, position and transport on their side.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. In case of skin irritation, seek medical treatment.

After contact with eyes

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion

Do NOT induce vomiting.

Rinse mouth thoroughly with water. Call a physician immediately.

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.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water spray. alcohol resistant foam. Extinguishing powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

In case of fire may be liberated: Carbon dioxide (CO₂). Carbon monoxide Nitrogen oxides (NO_x). carbon black.

5.3. Advice for firefighters

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

Additional information

Co-ordinate fire-fighting measures to the fire surroundings. Use water spray jet to protect personnel and to cool endangered containers. In case of fire and/or explosion do not breathe fumes. Contaminated fire-fighting water must be collected separately. Do not allow to enter into surface water or drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

High slip hazard because of leaking or spilled product. Remove all sources of ignition. Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities. Prevent spread over a wide area (e.g. by containment or oil barriers).

6.3. Methods and material for containment and cleaning up

Other information

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Collect in closed containers for disposal. Clean contaminated articles and floor according to the environmental legislation.

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6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Section 12: Ecological Information (non-mandatory)
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Work in well-ventilated zones or use proper respiratory protection. Avoid oil mist. If handled uncovered, arrangements with local exhaust ventilation have to be used. Avoid contact with skin, eyes and clothes.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Use only antistatically equipped (spark-free) tools.

Advice on general occupational hygiene

Wash hands before breaks and after work. Take off immediately all contaminated clothing. Wash contaminated clothing prior to re-use. Do not eat, drink, smoke or sneeze at the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep the packing dry and well sealed to prevent contamination and absorption of humidity. Keep container tightly closed in a cool place. Keep/Store only in original container.

Hints on joint storage

Keep away from food, drink and animal feedingstuffs.
Keep away from: Oxidizing agent

Further information on storage conditions

Recommended storage temperature: 5 - 40°C
Protect against: frost, heat, UV-radiation/sunlight.

7.3. Specific end use(s)

Brake fluid. Further information: see technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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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	systemic	14,8 mg/m ³	
Worker DNEL, long-term	dermal	systemic	4,2 mg/kg bw/day	
Consumer DNEL, long-term	inhalation	systemic	2,6 mg/m ³	
Consumer DNEL, long-term	dermal	systemic	1,5 mg/kg bw/day	
Consumer DNEL, long-term	oral	systemic	1,5 mg/kg bw/day	
	Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol			
Consumer DNEL, long-term	oral	systemic	12,5 mg/kg bw/day	
110-97-4	1,1'-iminodipropan-2-ol; di-isopropanolamine			
Worker DNEL, long-term	inhalation	systemic	6,4 mg/m ³	
Worker DNEL, long-term	dermal	systemic	5 mg/kg bw/day	
Consumer DNEL, long-term	inhalation	systemic	3,9 mg/m ³	
Consumer DNEL, long-term	dermal	systemic	6,3 mg/kg bw/day	
Consumer DNEL, long-term	oral	systemic	1,3 mg/kg bw/day	

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PNEC values

CAS No	Substance	Value
Environmental compartment		
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	
Freshwater		0,211 mg/l
Freshwater (intermittent releases)		2,112 mg/l
Marine water		0,021 mg/l
Freshwater sediment		0,76 mg/kg
Marine sediment		0,076 mg/kg
Micro-organisms in sewage treatment plants (STP)		100 mg/l
Soil		0,028 mg/kg
Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol		
Freshwater		2 mg/l
Freshwater (intermittent releases)		18 mg/l
Marine water		0,2 mg/l
Freshwater sediment		6,6 mg/kg
Marine sediment		0,66 mg/kg
Secondary poisoning		111 mg/kg
Micro-organisms in sewage treatment plants (STP)		500 mg/l
Soil		0,46 mg/kg
110-97-4	1,1'-iminodipropan-2-ol; di-isopropanolamine	
Freshwater		0,278 mg/l
Freshwater (intermittent releases)		2,777 mg/l
Marine water		0,028 mg/l
Freshwater sediment		2,33 mg/kg
Marine sediment		0,233 mg/kg
Micro-organisms in sewage treatment plants (STP)		15000 mg/l
Soil		0,303 mg/kg

Additional advice on limit values

Recommended limit value for oil mist

TWA: 5 mg/m³STEL: 10 mg/m³

The product does not contain any relevant quantities of substances with legally established exposure limitation.

8.2. Exposure controls**Appropriate engineering controls**

Provide adequate ventilation as well as local exhaust at critical locations.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Tightly sealed safety glasses. German Industry Norms (DIN) / European Norms (EN): DIN EN ISO 16321

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Hand protection

Tested protective gloves are to be worn: German Industry Norms (DIN) / European Norms (EN): EN ISO 374

Duration of wearing with permanent contact: 480 min

Suitable material: NBR (Nitrile rubber).

Thickness of glove material: 0.7 mm.

Wearing time with occasional contact (splashes): 30 min

Suitable material: NBR (Nitrile rubber).

Thickness of glove material: 0.4 mm

Protect skin by using skin protective cream.

Skin protection

Wear suitable protective clothing. Change contaminated clothing. Do not put any product-impregnated cleaning rags into your trouser pockets.

Respiratory protection

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. Breathing protection with filter against organic gases and vapours type A - boiling point > 65°C: A1: < 1000 ppm; A2: < 5000 ppm; A3: < 10000 ppm

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

Physical state:	liquid
Colour:	yellow
Odour:	characteristic
Odour threshold:	not determined

	Test method
Melting point/freezing point:	No data available
Boiling point or initial boiling point and boiling range:	approx. 265 °C ASTM D 1120
Flammability:	No data available
Lower explosion limits:	No data available
Upper explosion limits:	No data available
Flash point:	ca. 136 °C ASTM D 7094
Auto-ignition temperature:	> 300 °C DIN 51794
Decomposition temperature:	approx. 360 °C
pH-Value (at 20 °C):	8 ASTM D 1287:2011
Viscosity / kinematic: (at 20 °C)	approx. 12,3 mm ² /s DIN 51562
Water solubility:	completely miscible
Solubility in other solvents	
No data available	
Partition coefficient n-octanol/water:	No data available
Vapour pressure: (at 20 °C)	approx. 0,27 hPa
Density (at 20 °C):	1,06 g/cm ³ DIN 51757
Relative vapour density:	No data available
Particle characteristics:	No data available

9.2. Other information**Information with regard to physical hazard classes**

Explosive properties
No data available

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Self-ignition temperature

Solid:

No data available

Gas:

No data available

Oxidizing properties

No data available

Other safety characteristics

Evaporation rate:

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is stable under storage at normal ambient temperatures.

10.2. Chemical stability

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

The product is: hygroscopic.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

Do not overheat to avoid decomposition by heat.

Refer to chapter 7 No further action is necessary.

10.5. Incompatible materials

No data available

10.6. Hazardous decomposition productsIn case of fire may be liberated: Carbon dioxide (CO₂). Carbon monoxide Nitrogen oxides (NO_x). carbon black.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation**Acute toxicity**

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

Mixture not tested.

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate				
	oral	LD50 > 2000 mg/kg	Rat	Study report (1995)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rat	Study report (2010)	OECD Guideline 402
	Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol				
	oral	LD50 3306 mg/kg	Rat	REACH Registration Dossier	Estimation of the approximative LD50 val
	dermal	LD50 3540 mg/kg	Rabbit	Am Ind Hyg Ass J, 23, 95 (1962)	Study pre-dates guidelines. Similar to o
110-97-4	1,1'-iminodipropan-2-ol; di-isopropanolamine				
	oral	LD50 4765 mg/kg	Rat		

Irritation and corrosivity

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of damaging the unborn child. (Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate)

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.

Prolonged/repetitive skin contact may cause skin defatting or dermatitis.

Aspiration hazard

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

11.2. Information on other hazards

Endocrine disrupting properties

not applicable

SECTION 12: Ecological information

12.1. Toxicity

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

Mixture not tested.

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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 mg/l	100,3	96 h	Oncorhynchus mykiss	Study report (1987) OECD Guideline 203
	Acute algae toxicity	ErC50 mg/l	> 224,4	72 h	Raphidocelis subcapitata	Study report (1999) EU Method C.3
	Acute crustacea toxicity	EC50 mg/l	211,2	48 h	Daphnia magna (Big water flea)	OECD 202
	Acute bacteria toxicity	EC50 mg/l ()	> 1000	0,5 h	The inoculum of the activated sludge originated fr	Study report (1999) OECD Guideline 209
	Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol					
	Acute fish toxicity	LC50 mg/l	2200 - 4600	96 h	Leuciscus idus	Study report (1989) other: German industrial standard test g
	Crustacea toxicity	NOEC mg/l	> 100	21 d	Daphnia magna	Study report (1999) OECD Guideline 211
110-97-4	1,1'-iminodipropan-2-ol; di-isopropanolamine					
	Acute fish toxicity	LC50 mg/l	> 1000- 2200	96 h	Leuciscus idus	

12.2. Persistence and degradability

Individual components are biodegradable.

90 - 100% (28 d - OECD 301A)

70 - 80% (28 d - OECD 301B)

12.3. Bioaccumulative potential

No data available

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	-0,62
	Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol	0,51
110-97-4	1,1'-iminodipropan-2-ol; di-isopropanolamine	-0,82

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 UK REACH.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

Further information

Do not allow uncontrolled leakage of product into the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Must not be disposed of with domestic refuse. Do not allow to enter into surface water or drains.

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List of Wastes Code - residues/unused products

160113 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08); brake fluids; hazardous waste

Contaminated packaging

Contaminated packages must be completely emptied and can be re-used following proper cleaning. Dispose of waste according to applicable legislation. Packing which cannot be properly cleaned must be thrown away.

SECTION 14: Transport information**Land transport (ADR/RID)**

14.1. UN number or ID number: -
14.2. UN proper shipping name: -
14.3. Transport hazard class(es): -
14.4. Packing group: -

Inland waterways transport (ADN)

14.1. UN number or ID number: -
14.2. UN proper shipping name: -
14.3. Transport hazard class(es): -
14.4. Packing group: -

Marine transport (IMDG)

14.1. UN number or ID number: -
14.2. UN proper shipping name: -
14.3. Transport hazard class(es): -
14.4. Packing group: -

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: -
14.2. UN proper shipping name: -
14.3. Transport hazard class(es): -
14.4. Packing group: -

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Unless specified otherwise, general measures for safe transport must be followed.

14.7. Maritime transport in bulk according to IMO instruments

not applicable

Other applicable information

No dangerous good in sense of these transport regulations.

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 3, Entry 75

National regulatory information

Water hazard class (D): 1 - slightly hazardous to water

15.2. Chemical safety assessment

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

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SECTION 16: Other information**Changes**

This data sheet contains changes from the previous version in section(s): 2,4,5,6,7,8,9,10,11,12,16.

Abbreviations and acronyms

Eye Dam: Eye damage

Eye Irrit: Eye irritation

Repr: Reproductive toxicity

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ASTM - American Society for the Testing of Materials; ATE - Acute Toxicity Estimates; bw - Body weight; CAO - Cargo Aircraft Only; CAS - Chemical Abstracts Service; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DNEL - Derived No-Effect Level; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); EG - European Union; EN - European standards; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; OECD - Organization for Economic Co-operation and Development; PBT - Persistent, Bioaccumulative and Toxic substance; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulation concerning the International Carriage of Dangerous Goods by Rail; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Classification for mixtures and used evaluation method according to GB CLP Regulation

Classification	Classification procedure
Repr. 2; H361d	Calculation method

Relevant H and EUH statements (number and full text)

H318 Causes serious eye damage.
 H319 Causes serious eye irritation.
 H361d Suspected of damaging the unborn child.

Further Information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

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 receiver of our product is singularly responsible for adhering to existing laws and regulations.

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