SAFETY DATA SHEET

BK108 MSDS 08: Brake Fluid DOT 3 & DOT 4: Grades with Boiling Points >260 °C and Wet Boiling Points <165 °C

SECTION 1: Identification

1.1. Product identifier

Trade name

MSDS 08: Brake Fluid DOT 3 & DOT 4: Grades with Boiling Points >260 °C and Wet Boiling Points <165 °C

Product no.

3, 7, 8, 36, 122, 150, 163, 175, 180, 181

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

Relevant identified uses of the substance or mixture

Hydraulic fluid

Uses advised against

None known.

1.3. Details of the supplier of the safety data sheet

Company and address

Orthene Chemicals .Ltd
Brember Road
HA2 8UJ Harrow
United Kingdom
+44 (0)20 8864 4414

E-mail

technical@orthene.co.uk

SDS date

8/9/2023

SDS Version

5.0

Date of previous version

4/20/2023 (4.0)

1.4. Emergency telephone number

Contact the poison control at 1-800-222-1222 (24/7) or use the webPOISONCONTROL® (triage.webpoisoncontrol.org) to get specific guidance for your case
See also section 4 “First aid measures”.

SECTION 2: Hazard(s) identification

OSHA/HCS status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

2.1. Classification of the substance or mixture

Eye Irrit. 2; H319, Causes serious eye irritation.
Repr. 2; H361fd, Suspected of damaging fertility. Suspected of damaging the unborn child.

2.2. Label elements

Hazard pictogram(s)

Signal word

Warning

Hazard statement(s)

Causes serious eye irritation. (H319)
Suspected of damaging fertility. Suspected of damaging the unborn child. (H361fd)

Precautionary statement(s)

General

If medical advice is needed, have product container or label at hand. (P101)

Prevention

Do not handle until all safety precautions have been read and understood. (P202)
Wear eye protection/protective gloves. (P280)

Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305+P351+P338)
If eye irritation persists: Get medical advice/attention. (P337+P313)
IF SWALLOWED: Immediately call a POISON CENTER/doctor. (P301+P310)

Storage

Store locked up. (P405)

▼Disposal

Dispose of contents/container in accordance with local regulation (P501)

Additional labelling

Not applicable.

2.3. Other hazards

Additional warnings

This mixture/product does not contain any substances considered to meet the criteria classifying them as PBT and/or vPvB.
Product is not classified as combustible but will burn.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable. This product is a mixture.

3.2. ▼Mixtures

Product/substance	Identifiers	% w/w	Classification	Note
Butyl Triglycol	CAS No.: 143-22-6	25-40%	Eye Dam. 1, H318 (SCL: 30.00 %) Eye Irrit. 2, H319 (SCL: 20.00 %) Eye Irrit. 2B, H320 (SCL: 20.00 %)	
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	CAS No.: 30989-05-0	15-25%	Repr. 2, H361fd	
2,2' -oxybisethanol;	CAS No.: 111-46-6	5-10%	Acute Tox. 4, H302	
3,6,9,12-tetraoxahexadecan-1-ol	CAS No.: 1559-34-8	5-10%	Eye Irrit. 2, H319	
2-(2-butoxyethoxy)ethanol;	CAS No.: 112-34-5	1-3%	Eye Irrit. 2, H319	
2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether;diethylene glycol monomethyl ether	CAS No.: 111-77-3	<1%	Repr. 2, H361d	

Where the concentration of an ingredient is expressed as a range the exact concentration has been withheld as a trade secret.

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

▼Other information

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SECTION 4: First-aid measures

4.1. Description of first aid measures

General information

If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 911 and give immediate treatment (first aid).
Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.
If recovery is not rapid, seek medical attention.

Skin contact

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.
If skin irritation occurs: Get medical advice/attention.

Eye contact

Remove contact lenses. Flush eyes immediately with plenty of water or isotonic water (20-30°C) for at least 5 minutes and continue until irritation stops. Make sure to flush under upper and lower eyelids. If irritation continues, contact a doctor. Continue flushing during transport.

Ingestion

Provide plenty of water for the person to drink and stay with him/her. Seek medical advice immediately and bring the safety data sheet or label from the product. Do not induce vomiting, unless recommended by the doctor. Have the victim lean forward with head down to avoid inhalation of- or choking on vomited material.
If medical attention is delayed, give adults 90-120 ml hard liquor such as 40% v/v spirits. Give children proportionately less at a rate of 2ml/kg body weight.

Burns

Not applicable.

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

The most important symptoms are described in sections 2 and 11.
Irritation effects: This product contains substances, which may cause irritation upon exposure to skin, eyes or lungs.
Exposure may result in an increased absorption potential of other hazardous substances at the area of exposure.

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

If eye irritation persists: Get medical advice/attention.
Treat according to symptoms. There is no specific antidote. Due to the Di-ethylene Glycol content, treatment as for Ethylene Glycol poisoning may help.

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Recommended: alcohol-resistant foam, carbon dioxide, powder, water mist. Waterjets should not be used, since they can spread the fire. However they may be used to cool adjacent containers.

5.2. Special hazards arising from the substance or mixture

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.
If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:
Carbon oxides (CO / CO2)

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact the Poison Help Line on 1-800-222-1222 (24/7) in order to obtain further advice.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid direct contact with spilled substances.
Ensure adequate ventilation, especially in confined areas.
Contaminated areas may be slippery.
Prevent unnecessary personnel entering area of a spill. When cleaning up large spills appropriate protective clothing should be worn - see section 8.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc.

Keep unauthorized persons away from the spill

6.3. Methods and material for containment and cleaning up

Limit spillage and collect using granular absorbent or similar materials, and dispose of it in accordance with the regulations on dangerous waste.
Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.
Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections

See section 13 “Disposal considerations” on handling of waste.
See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid any method of handling that generates mists or aerosols.
Avoid direct contact with the product.
Do not eat, drink or smoke when handling this product.
See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage material

Always store in containers of the same material as the original container.

Storage temperature

Room temperature 15 to 30°C

Incompatible materials

Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.
Users are referred to the specification SAE J1707 "Service maintenance of brake fluids".

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

2-(2-butoxyethoxy)ethanol;
Long term exposure limit (ACGIH TLV) (ppm): 10

Part 1910 - Occupational Safety and Health Standards (29 CFR 1910.1000 TABLE Z-1 - Limits for Air Contaminants)

8.2. ▼Exposure controls

Compliance with the given occupational exposure limits values should be controlled on a regular basis.

General recommendations

Do not eat, drink or smoke when handling this product.

Exposure scenarios

There are no exposure scenarios implemented for this product.

Exposure limits

Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

▼Appropriate technical measures

The formation of vapours must be kept at a minimum and below current limit values (see above). Installation of a local exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure eyewash and emergency showers are clearly marked.
Apply standard precautions during use of the product. Avoid inhalation of vapours.

Hygiene measures

In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Always wash hands, forearms and face.

Measures to avoid environmental exposure

Keep spill absorbent materials available in the workplace. If possible, clean up any spills immediately.

Individual protection measures, such as personal protective equipment

Generally

Use only protective equipment with a recognized certification mark, e.g. the UL mark.

Respiratory Equipment
No specific requirements

Skin protection
No specific requirements.

Hand protection

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards	
Butyl	0,3	> 480	EN374-2, EN374-3, EN388	
Nitrile	0,2	> 480	EN374-2, EN374-3, EN388	

Eye protection

Type	Standards	
Wear safety glasses with side shields.	EN166	

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state
Liquid

Colour
Amber

Odour
Mild

Odour threshold (ppm)
Testing not relevant or not possible due to the nature of the product.

pH
7-10.5

Density (g/cm³)
1.02-1.07

Kinematic viscosity
5-10 centistokes (20 °C)

Phase changes

Melting point (°F)
-

Melting point (°C)
< -50

Boiling point (°F)
-

Boiling point (°C)
>260

Vapour pressure
1 millibar

Vapour density
Testing not relevant or not possible due to the nature of the product.

Decomposition temperature (°F)
-

Decomposition temperature (°C)
300

Evaporation rate (n-butylacetate = 100)
0.01

Data on fire and explosion hazards

Flash point (°F)
-
Flash point (°C)
>100
Flammability (°F)
Testing not relevant or not possible due to the nature of the product.
Auto-ignition temperature (°F)
-
Auto-ignition temperature (°C)
>280
Explosion limits (% v/v)
Testing not relevant or not possible due to the nature of the product.

Solubility

Solubility in water
Completely soluble
n-octanol/water coefficient
1.5
Solubility in fat (g/L)
Testing not relevant or not possible due to the nature of the product.

9.2. Other information

Evaporation rate (n-butylacetate = 100)
0.01
Other physical and chemical parameters
No data available.
Oxidizing properties
Testing not relevant or not possible due to the nature of the product.

SECTION 10: Stability and reactivity

10.1. Reactivity
No hazardous reactions if stored and handled as indicated.
10.2. Chemical stability
The product is stable under the conditions, noted in section 7 “Handling and storage”.
10.3. Possibility of hazardous reactions
None known.
10.4. Conditions to avoid
None known.
10.5. Incompatible materials
Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.
10.6. Hazardous decomposition products
The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity
Based on available data, the classification criteria are not met.
Oral -Based on read across data toxicity is low (LD 50 Rat >5000 mg/kg). Sparse experience indicates toxicity in man could be greater.
Inhalation - Not applicable due to low vapour pressure of product.
Dermal - Based on read across data toxicity is low (LD 50 Rabbit >3000 mg/kg.
General - Although acute toxicity of this product is low, if significant amounts are absorbed there is a risk of renal damage which could lead to kidney failure or even death. Other symptoms of overexposure include Central Nervous System effects, abdominal discomfort, metabolic acidosis and headache or nausea.

Skin corrosion/irritation
Based on available data, the classification criteria are not met.
However, repeated contact may de-fat the skin and cause dermatitis.

Serious eye damage/irritation
Causes serious eye irritation.

Respiratory sensitisation
Based on available data, the classification criteria are not met.
Skin sensitisation
Based on available data, the classification criteria are not met.
Germ cell mutagenicity
Based on available data, the classification criteria are not met.
Carcinogenicity
Based on available data, the classification criteria are not met.
Reproductive toxicity
Suspected of damaging fertility. Suspected of damaging the unborn child.
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.
Long term effects
Irritation effects: This product contains substances, which may cause irritation upon exposure to skin, eyes or lungs. Exposure may result in an increased absorption potential of other hazardous substances at the area of exposure.
Other information
None known.

SECTION 12: Ecological information

12.1. Toxicity
Product is of low ecotoxicity
Fish 96h LC50 >100mg/l (Oncorhynchus Mykiss)
Daphnia 48h EC50 Not determined but expected to be virtually non-toxic
Algae 72h EC50 Not determined but expected to be virtually non-toxic
12.2. Persistence and degradability
Product is inherently biodegradable and is expected to be readily biodegradable based on ingredients (OECD 302B). If admitted into adapted biological water treatment plants no adverse effects of the degrading action of the live sludge are expected.
12.3. Bioaccumulative potential
Not expected to Bio-accumulate. Log POW for all main ingredients <2.0
12.4. Mobility in soil
Product is soluble in water and will be mobile in soil until degraded. Volatilisation from water to air not expected.
12.5. Results of PBT and vPvB assessment
This mixture/product does not contain any substances considered to meet the criteria classifying them as PBT and/or vPvB.
12.6. Other adverse effects
None known.

SECTION 13: Disposal considerations

Waste treatment methods
Dispose of in accord with local and national regulations. Recycling or incineration with energy recovery are recommended.
RCRA Hazardous waste ("P" and "U" list) (40 CFR 261)
None of the components are listed
▼Specific labelling
Contaminated packing
Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: Transport information

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
DOT	-	-	-	-	-	-
IMDG	-	-	-	-	-	-
IATA	-	-	-	-	-	-

* Packing group
** Environmental hazards

Additional information

Not dangerous goods according to DOT, IATA and IMDG.

14.6. Special precautions for user

Not applicable.

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

No data available.

SECTION 15: Regulatory information

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

15.2. ▼U.S. Federal regulations

▼TSCA

Butyl Triglycol is listed in the non-confidential portion
2,2' -oxybisethanol; is listed in the non-confidential portion
3,6,9,12-tetraoxahexadecan-1-ol is listed in the non-confidential portion
2,2'-(ethylenedioxy)diethanol is listed in the non-confidential portion
2-(2-butoxyethoxy)ethanol; is listed in the non-confidential portion
2,2'-butyliminodiethanol is listed in the non-confidential portion
2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether;diethylene glycol monomethyl ether is listed in the non-confidential portion

Clean Air Act

Glycol ethers are regulated as a generic class under this legislation.

EPCRA Section 302

None of the components are listed

EPCRA Section 304

None of the components are listed

EPCRA section 313

Glycol ethers are regulated as a generic class under this legislation.

CERCLA

Glycol ethers are regulated as a generic class under this legislation.

▼State regulations

California / Prop. 65

None of the components are listed

▼Massachusetts / Right To Know Act

2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether;diethylene glycol monomethyl ether is listed

New Jersey / Right To Know Act

None of the components are listed

New York / Right To Know Act

None of the components are listed

▼Pennsylvania / Right To Know Act

2,2' -oxybisethanol; is listed

2,2'-(ethylenedioxy)diethanol is listed

2,2'-butyliminodiethanol is listed

2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether;diethylene glycol monomethyl ether is listed

15.4. Restrictions for application

Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

15.5. Demands for specific education
No specific requirements.
15.6. Additional information
Not applicable.
15.7. Chemical safety assessment
No
15.8. Sources
OSHA Hazard Communication Standard (29 CFR 1910.1200)

SECTION 16: Other information

▼Full text of H-phrases as mentioned in section 3
H302, Harmful if swallowed.
H318, Causes serious eye damage.
H319, Causes serious eye irritation.
H320, Causes eye irritation
H361d, Suspected of damaging the unborn child.
H361fd, Suspected of damaging fertility. Suspected of damaging the unborn child.

The full text of identified uses as mentioned in section 1
None known.

Abbreviations and acronyms
ACGIH = American Conference of Governmental Industrial Hygienists
ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CERCLA = Comprehensive Environmental Response Compensation and Liability Act
DOT = Department of Transportation
EINECS = European Inventory of Existing Commercial chemical Substances
EPCRA = Emergency Planning and Community Right-To-Know Act
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
HCIS = Hazardous Chemical Information System
HNOC = Hazards Not Otherwise Classified
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NFPA = National Fire Protection Association
NIOSH = National Institute for Occupational Safety and Health
OECD = Organisation for Economic Co-operation and Development
OSHA = Occupational Safety and Health Administration
PBT = Persistent, Bioaccumulative and Toxic
RCRA = Resource Conservation and Recovery Act
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SARA = Superfund Amendments and Reauthorization Act
SCL = A specific concentration limit.
STEL = Short-term exposure limits
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TSCA = The Toxic Substances Control Act
TWA = Time weighted average
UN = United Nations
UVBC = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

▼Additional information
The hazard classification of H319 (Eye irritation 2) was determined by internal testing of final mixture.
The classification of the mixture in regard of health hazards is in accordance with the calculation methods given by

HCS (29 CFR 1910.1200).
The information contained herein is based on the present knowledge and experience of Orthene Chemicals Ltd. It in no way constitutes the users own assessment of work place risk as required by other Health and Safety legislation. Orthene Chemicals Ltd. does not, by supplying this information, guarantee or warrant any specific properties or qualities of goods supplied. It is the responsibility of the purchaser to determine whether the goods ordered are fit for any purpose for which they may be required.
This information is provided subject to Orthene Chemicals Limited's Conditions of Sale, and in particular Conditions 9 and 14 thereof.

▼The safety data sheet is validated by

Christopher Coulthard

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a blue triangle.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
Country-language: US-en