SAFETY DATA SHEET

PM Xeramic® Brake Fluid DOT 5.1

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

1.1. Product identifier

Trade name

PM Xeramic® Brake Fluid DOT 5.1 Product no. 20476

9, 10, 12, 13, 14, 27, 35, 75, 118, 137, 149, 153, 157, 159, 160, 162, 164, 169, 170, 176, 177, 184, 186, 189

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**
· **Manufacturer/Supplier:**
· Petromark Automotive Chemicals B.V.
· Rooswijkweg 316
· 1951 ME Velsen-Noord – Nederland
· Tel +31 251 211397 - www.xeramic.com

· **Further information obtainable from:** Research & Development: sales@petromark.eu
· **1.4 Emergency telephone number:** During normal business hours: Tel: +31 251 211397

SECTION 2: Hazards identification

Classified according to Regulation (EC) No. 1272/2008 (CLP) as retained and amended in UK law.

2.1. Classification of the substance or mixture

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)

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)
Keep out of reach of children. (P102)

Prevention
Wash hands and exposed skin thoroughly after handling. (P264)
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
-
▼Disposal
Dispose of contents/container in accordance with local regulation (P501)

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

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.
This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

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
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	CAS No.: 30989-05-0 EC No.: 250-418-4 UK-REACH: Index No.:	80-95%	Repr. 2, H361fd	
Butyl Triglycol	CAS No.: 143-22-6 EC No.: 205-592-6 UK-REACH: Index No.: 603-183-00-0	10-15%	Eye Dam. 1, H318 (SCL: 30.00 %) Eye Irrit. 2, H319 (SCL: 20.00 %)	
3,6,9,12-tetraoxahexadecan-1-ol	CAS No.: 1559-34-8 EC No.: 216-322-1 UK-REACH: Index No.:	1-3%	Eye Irrit. 2, H319	
2-(2-butoxyethoxy)ethanol;	CAS No.: 112-34-5 EC No.: 203-961-6 UK-REACH: Index No.: 603-096-00-8	<1%	Eye Irrit. 2, H319	[1], [3]
2-(2-methoxyethoxy)ethanol;	CAS No.: 111-77-3 EC No.: 203-906-6 UK-REACH: Index No.: 603-107-00-6	<1%	Repr. 1A, H360D (SCL: 3.00 %)	[1], [3]

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

Other information
[1] European occupational exposure limit.
[3] According to UK REACH, Annex XVII, the substance is subject to restrictions.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet.
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 and open eyes widely. Flush eyes with water or saline water(20-30°C) for at least 5 minutes.
If any irritation persists, seek medical assistance and 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.
None known.

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

IF exposed or concerned:
Get immediate medical advice/attention.
Treat according to symptoms. There is no specific antidote.

Information to medics

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

SECTION 5: Firefighting 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 National Poisons Information Service (dial 111, 24 h service) 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 (8 hours) (ppm): 10
Long term exposure limit (8 hours) (mg/m³): 67,5
Short term exposure limit (15 minutes) (ppm): 15
Short term exposure limit (15 minutes) (mg/m³): 101,2

2,2' -oxybisethanol;
Long term exposure limit (8 hours) (ppm): 23
Long term exposure limit (8 hours) (mg/m³): 101

2-(2-methoxyethoxy)ethanol;
Long term exposure limit (8 hours) (ppm): 10
Long term exposure limit (8 hours) (mg/m³): 50,1
Annotations:
Sk = Can be absorbed through the skin and lead to systemic toxicity.

The Control of Substances Hazardous to Health Regulations 2002. SI 2002/2677 The Stationery Office 2002.
EH40/2005 Workplace exposure limits (Fourth Edition 2020).

DNEL

2-(2-butoxyethoxy)ethanol;

Duration:	Route of exposure:	DNEL:
Long term – Systemic effects - Workers	Dermal	20mg/kgBW/day

Long term – Systemic effects - Workers	Inhalation	67mg/m3

2-(2-methoxyethoxy)ethanol;

Duration:	**Route of exposure:**	**DNEL:**
Long term – Systemic effects - Workers	Dermal	2.22 mg/kg bw/day
Long term – Systemic effects - Workers	Inhalation	50.1 mg/m³

2,2' -oxybisethanol;

Duration:	**Route of exposure:**	**DNEL:**
Long term – Systemic effects - Workers	Dermal	43 mg/kg bw/day
Long term – Systemic effects - Workers	Inhalation	44 mg/m³

Butyl Triglycol

Duration:	**Route of exposure:**	**DNEL:**
Long term – Systemic effects - Workers	Dermal	50mg/kgBW/day
Long term – Systemic effects - Workers	Inhalation	195mg/m3

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

Duration:	**Route of exposure:**	**DNEL:**
Long term – Systemic effects - Workers	Dermal	8.3 mg/kgBW/day
Long term – Systemic effects - Workers	Inhalation	29.1 mg/m3

PNEC

2-(2-butoxyethoxy)ethanol;

Route of exposure:	**Duration of Exposure:**	**PNEC:**
Sewage treatment plant	Continuous	200mg/L
Water	Single	3.9mg/L

2-(2-methoxyethoxy)ethanol;

Route of exposure:	**Duration of Exposure:**	**PNEC:**
Sewage treatment plant		10000mg/L
Water	Single	12mg/L

2,2' -oxybisethanol;

Route of exposure:	**Duration of Exposure:**	**PNEC:**
Sewage treatment plant	Continuous	199.5mg/L
Water	Single	10mg/L

Butyl Triglycol

Route of exposure:	**Duration of Exposure:**	**PNEC:**
Sewage treatment plant	Continuous	200mg/L
Water	Single	5mg/L

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

Route of exposure:	**Duration of Exposure:**	**PNEC:**
Sewage treatment plant	Continuous	100 mg/l
Water	Single	2.112 mg/l

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 UKCA marked protective equipment.

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 / Odour threshold

Mild

pH

7-10.5

Density (g/cm³)

1.02-1.07

Kinematic viscosity

5-10 centistokes (20 °C)

Particle characteristics

Does not apply to liquids.

Phase changes

Melting point/Freezing point (°C)

< -50

Softening point/range (waxes and pastes) (°C)

Does not apply to liquids.

Boiling point (°C)
>260
Vapour pressure
1 millibar
Relative vapour density
Testing not relevant or not possible due to the nature of the product.
Decomposition temperature (°C)
300

Data on fire and explosion hazards

Flash point (°C)
>120
Flammability (°C)
Testing not relevant or not possible due to the nature of the product.
Auto-ignition temperature (°C)
>280
Lower and upper explosion limit (% 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 hazard classes as defined in Regulation (EC) No 1272/2008

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

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.

11.2. Information on other hazards

Long term effects
Reproductive toxicity: This product contains teratogenic substances, which may produce anomalies and/or developmental defects to the human offspring. Adverse effects include: death, growth retardation, congenital disorders, delayed mental development, and functional disorders. This product contains reprotoxic substances, which may harm the reproductive capacity. Adverse effects include: sterility, effects on the sexual function, lowered effective fertility and dysfunctional menstrual cycle.

Endocrine disrupting properties
Not applicable.

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. Endocrine disrupting properties

Not applicable.

12.7. Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product is covered by the regulations on hazardous waste.
HP 4 - Irritant (skin irritation and eye damage)
HP 10 – Toxic for reproduction
Regulation (EU) No 1357/2014 of 18 December 2014 on waste as retained and amended in UK law.
Dispose of in accord with local and national regulations. Recycling or incineration with energy recovery are recommended.

EWC code

16 01 13* Brake fluids

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:
ADR	-	-	-	-	-	-
IMDG	-	-	-	-	-	-
IATA	-	-	-	-	-	-

* Packing group
** Environmental hazards

Additional information

Not dangerous goods according to ADR, IATA and IMDG.

14.6. Special precautions for user

Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15: Regulatory information

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

Restrictions for application

No special.

Demands for specific education

No specific requirements.

SEVESO - Categories / dangerous substances

Not applicable.

REACH, Annex XVII

2-(2-methoxyethoxy)ethanol; is subject to restrictions, UK-REACH annex XVII (entry 54).

Additional information

Tactile warning.

Sources

Regulation (EU) No 1357/2014 of 18 December 2014 on waste as retained and amended in UK law.
Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP) as retained and amended in UK law.
Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as retained and amended in UK law.

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H318, Causes serious eye damage.
H319, Causes serious eye irritation.
H360D, May damage the unborn child.
H361fd, Suspected of damaging fertility. Suspected of damaging the unborn child.

Abbreviations and acronyms

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
CE = Conformité Européenne (European conformity)
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EINECS = European Inventory of Existing Commercial chemical Substances
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer (IARC)
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
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)
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SCL = A specific concentration limit
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
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 classification of the substance/mixture in regard of health hazards are in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP) as retained and amended in UK law.
This data sheet is available in other European Languages.
Data sheets for other areas of the Globe may be available on request.
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.
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▼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: GB-en