



SAFETY DATA SHEET

SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name : DOT 5.1
Product code : 27401northamerica

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

Brake fluid

1.3. Details of the supplier of the safety data sheet

Registered company name : MOTUL.
Address : 119 BOULEVARD FELIX FAURE.93300.AUBERVILLIERS CEDEX.FRANCE.
Telephone : +33 (0)1.48.11.70.00. Fax : +33 (0)1.48.33.28.79.
motul_hse@motul.fr

1.4. Emergency telephone number : +44 (0) 1235 239 670.

Association/Organisation : .

Other emergency numbers

UNITED STATES: 001 866 928 0789 / CANADA: 001 800 579 7421 / MEXICO : +52 55 5004 8763 / MIDDLE EAST - AFRICA : +44 1235 239671
BRAZIL : +55 11 3197 5891 / COLOMBIA : +57 601 508 7337 / ARGENTINA : +54 11 5984 3690 / CHILE : +562 2582 9336
Ireland : +353 1 8092566
24 hours a day, 7 days a week

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

HCS compliant.

Reproductive toxicity, Category 2 (Repr. 2).
This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

2.2. Label elements

HCS compliant.

Hazard pictograms :



GHS08

Signal Word :

WARNING

Product identifiers :

CAS 30989-05-0 TRIS[2-[2-(2-METHOXYETHOXY)ETHOXY]ETHYL] ORTHOBORATE
CAS 111-77-3 2-(2-METHOXYETHOXY)ETHANOL

Hazard statements :

H361 Suspected of damaging fertility or the unborn child .

Precautionary statements - General :

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

P102 Keep out of reach of children.

Precautionary statements - Prevention :

P202 Do not handle until all safety precautions have been read and understood.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements - Response :

P308 + P313 IF exposed or concerned: Get medical advice/attention.

Precautionary statements - Storage :

P405 Store locked up.

Precautionary statements - Disposal :

P501 Dispose of contents / container according to prefectural ordinances.

2.3. Other hazards**SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS****3.2. Mixtures****Composition :**

Identification	HCS	Nota	%
CAS: 30989-05-0 EC: 250-418-4 REACH: 2119462824-33 TRIS[2-[2-(2-METHOXYETHOXY)ETHOXY]ETHYL] ORTHOBORATE	GHS08 Wng Repr. 2, H361	[2]	50 <= x % < 100
CAS: 143-22-6 EC: 205-592-6 REACH: 01-2119475107-38 2-(2-(2-BUTOXYETHOXY)ETHOXY)ETHANOL	GHS05 Dgr Eye Dam. 1, H318		2.5 <= x % < 10
CAS: 9004-77-7 EC: 500-012-0 REACH: 2119475115-41 POLY(OXY-1,2-ETHANEDIYL), .ALPHA.-BUTYL-.OMEGA.-HYDROXY-	GHS07 Wng Eye Irrit. 2, H319		2.5 <= x % < 10
CAS: 111-77-3 EC: 203-906-6 REACH: 2119475100-52 2-(2-METHOXYETHOXY)ETHANOL	GHS08 Wng Repr. 2, H361	[1] [2]	2.5 <= x % < 10

Information on ingredients :

(Full text of H-phrases: see section 16)

[1] Substance for which maximum workplace exposure limits are available.

[2] Carcinogenic, mutagenic or reprotoxic (CMR) substance.

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

4.1. Description of first aid measures**In the event of exposure by inhalation :**

Remove the victim to fresh air. If the symptoms persist, call a physician.

In the event of splashes or contact with eyes :

Wash immediately and abundantly with water, including under the eyelids.

In the event of splashes or contact with skin :

Immediately remove all soiled clothing.

Wash immediately and abundantly with soap and water.

In the event of swallowing :

Seek medical attention, showing the label.

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

No data available.

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

No data available.

SECTION 5 : FIREFIGHTING MEASURES

Non-flammable.

5.1. Extinguishing media

Suitable methods of extinction

Dry agent, foam, carbon dioxide.

Unsuitable methods of extinction

High volume water jet

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)

- carbon dioxide (CO₂)

5.3. Advice for firefighters

No data available.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Spilled product may make surfaces slippery.

For first aid worker

First aid workers will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Clean preferably with a detergent, do not use solvents.

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.

Avoid exposure to pregnant women and warn women of child-bearing age of the possible risks

7.1. Precautions for safe handling

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Do not swallow

Do not get in eyes, on skin, or on clothing.

Fire prevention :

Prevent access by unauthorised personnel.

Take precautionary measures against static discharges by bonding and grounding equipment.

No smoking.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Avoid exposure - obtain special instructions before use.

Ensure good ventilation at the workplace

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

Do not breathe fumes, vapour, spray.

7.2. Conditions for safe storage, including any incompatibilities

Store between 5°C and 40°C in a dry, well ventilated place.

Only use hydrocarbon-resistant containers, joints and pipes.

Storage

Keep out of reach of children.

Packaging

Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****Occupational exposure limits :**

- European Union (2019/1831, 2017/2398, 2017/164, 2009/161, 2006/15/CE, 2000/39/CE, 98/24/CE) :

CAS	VME-mg/m3 :	VME-ppm :	VLE-mg/m3 :	VLE-ppm :	Notes :
111-77-3	50.1	10	-	-	Peau

- Germany - AGW (BAuA - TRGS 900, 08/08/2019) :

CAS	VME :	VME :	Excess	Notes
111-77-3		10 ppm 50 mg/m ³		

- France (INRS - ED984 / 2020-1546) :

CAS	VME-ppm :	VME-mg/m3 :	VLE-ppm :	VLE-mg/m3 :	Notes :	TMP No :
111-77-3	10	50.1	-	-	*. R3	84

- UK / WEL (Workplace exposure limits, EH40/2005, Fourth Edition 2020) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
111-77-3	10 ppm 50.1 mg/m ³			Sk	

8.2. Exposure controls**Appropriate engineering controls**

Ensure adequate ventilation, if possible with extractor fans at work posts and appropriate general extraction.
Personnel shall wear regularly laundered overalls.

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.
Store personal protective equipment in a clean place, away from the work area.
Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.
Use eye protectors designed to protect against liquid splashes
Before handling, wear safety goggles in accordance with standard EN166.

- Hand protection

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN ISO 374-1.
Gloves must be selected according to the application and duration of use at the workstation.
Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.
Type of gloves recommended :
- Natural latex

Glove thickness:	0.38 mm
Break-through time:	> 480 mn

- Body protection

Work clothing worn by personnel shall be laundered regularly.
After contact with the product, all parts of the body that have been soiled must be washed.

- Respiratory protection

Breathing apparatus only when aerosol or spray are formed.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

No data available.

Physical state

Physical state :	Fluid liquid.
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Colour

Unspecified

Odour

Odour threshold :	Not stated.
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Freezing point

Freezing point / Freezing range :	Not stated.
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Boiling point or initial boiling point and boiling range

Boiling point/boiling range :	Not relevant.
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Flammability

Flammability (solid, gas) :	Not stated.
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Lower and upper explosion limit

Explosive properties, lower explosivity limit (%) :	Not stated.
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Explosive properties, upper explosivity limit (%) :	Not stated.
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Flash point

Flash Point Interval :	FP > 100°C (212 °F)
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Auto-ignition temperature

Self-ignition temperature :	Not relevant.
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Decomposition temperature

Decomposition point/decomposition range :	Not relevant.
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pH

pH (aqueous solution) :	Not stated.
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pH :	Not stated.
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	Slightly basic.
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Kinematic viscosity

Viscosity :	5-10 mm ² /s à 20°C
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Solubility

Water solubility :	Soluble.
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Fat solubility :	Not stated.
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Partition coefficient n-octanol/water (log value)

Partition coefficient: n-octanol/water :	<2.0
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Vapour pressure

Vapour pressure (50°C) :	Not relevant.
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Density and/or relative density

Density :	> 1
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Relative vapour density

Vapour density :	Not stated.
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9.2. Other information

No data available.

9.2.1. Information with regard to physical hazard classes

No data available.

9.2.2. Other safety characteristics

No data available.

SECTION 10 : STABILITY AND REACTIVITY**10.1. Reactivity**

No data available.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Keep away from heat and from sources of ignition

Take precautionary measures against static discharges.

10.5. Incompatible materials

Strong oxidants

Acids

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO₂)

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Suspected human reproductive toxicant.

11.1.1. Substances

No toxicological data available for the substances.

11.1.2. Mixture

Acute toxicity :

Oral route :	No observed effect.
	Species : Rat
	LD50 > 5000 mg/kg
	Species : Rabbit
	LD50 > 3000 mg/kg

Skin corrosion/skin irritation :

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non allergic contact dermatitis and absorption through the skin.

Aspiration hazard :

"Inhalation of vapours may cause irritation of the respiratory system in very susceptible persons."

May cause lung damage if swallowed

11.2. Information on other hazards

SECTION 12 : ECOLOGICAL INFORMATION

The product must not be allowed to run into drains or waterways.

12.1. Toxicity

12.1.2. Mixtures

Fish toxicity :	No observed effect.
	LC50 > 100 mg/l
	Species : Oncorhynchus mykiss
	Duration of exposure : 96 h

12.2. Persistence and degradability

12.2.2. Mixtures

Biodegradability :	Rapidly degradable.
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12.3. Bioaccumulative potential

12.3.2. Mixtures

Octanol/water partition coefficient :	log K _{ow} < 3.
	Does not have the potential for bioconcentration.

12.4. Mobility in soil

Water soluble
Mobile in soil

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Endocrine disrupting properties

No data available.

12.7. Other adverse effects

Do not dispose of the product in the natural environment, effluents or surface waters.

SECTION 13 : DISPOSAL CONSIDERATIONS

The appropriate waste management of the mixture and/or its container must be determined in accordance with local regulations.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

SECTION 14 : TRANSPORT INFORMATION

Exempt from transport classification and labelling.

14.1. UN number

-

14.2. UN proper shipping name

-

14.3. Transport hazard class(es)

-

14.4. Packing group

-

14.5. Environmental hazards

-

14.6. Special precautions for user

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SECTION 15 : REGULATORY INFORMATION

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

The following regulations have been used:

- OSHA Hazard Communication Standard 29 CFR 1910.1200

- Container information:

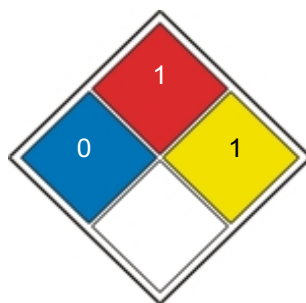
No data available.

- Particular provisions :

No data available.

- Standardised American system for the identification of hazards presented by the product in view of emergency procedures (NFPA 704) :

NFPA 704, Labelling: Health=0 Inflammability=1 Instability/Reactivity=1 Specific Risk=none



- Clean Water Act : Toxic Pollutants (CWA 307A)

Unlisted.

- Clean Water Act : Hazardous Substances (CWA 311)

Unlisted.

- Clean Water Act : Hazardous Substances (CWA 304b)

Unlisted.

- Clean Water Act : Priority Pollutants (CWA Priority)

Unlisted.

- Clean Air Act : Hazardous Air Pollutants (CAA 112(b) HAP (188))

Unlisted.

- Clean Air Act : Organic Hazardous Air Pollutants National Emission Standards (CAA 112(b) HON (387))

CAS Name
111-77-3 2-(2-METHOXYETHOXY)ETHANOL

- Clean Air Act : Protection of Stratospheric Ozone (CAA 602)

Unlisted.

- SARA 110

Unlisted.

- SARA 302/304

Unlisted.

- SARA 313

Unlisted.

- California proposition 65 : Chemicals known to the state to cause cancer or reproductive toxicity

Unlisted.

- Massachusetts : Right to Know

CAS Name
111-77-3 2-(2-METHOXYETHOXY)ETHANOL

- New Jersey : Right to Know

Unlisted.

- Pennsylvania : Hazardous Substance

CAS Name
111-77-3 2-(2-METHOXYETHOXY)ETHANOL

- Rhode Island : Hazardous substance list

Unlisted.

- TSCA (Toxic Substances Control Act) - USA

CAS Name
9004-77-7 POLY(OXY-1,2-ETHANEDIYL), .ALPHA.-BUTYL-.OMEGA.-HYDROXY-
143-22-6 2-(2-(2-BUTOXYETHOXY)ETHOXY)ETHANOL
111-77-3 2-(2-METHOXYETHOXY)ETHANOL

15.2. Chemical safety assessment

No data available.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

Wording of the phrases mentioned in section 3 :

H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H360	May damage fertility or the unborn child .

Abbreviations :

LD50 : The dose of a test substance resulting in 50% lethality in a given time period.

LC50 : The concentration of a test substance resulting in 50% lethality in a given period.

REACH : Registration, Evaluation, Authorization and Restriction of Chemical Substances.

CMR: Carcinogenic, mutagenic or reprotoxic.

STEL : Short-term exposure limit

TWA : Time Weighted Averages

TMP : French Occupational Illness table

TLV : Threshold Limit Value (exposure)

AEV : Average Exposure Value.

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

GHS08 : Health hazard

PBT: Persistent, bioaccumulable and toxic.

vPvB : Very persistent, very bioaccumulable.

HCS : Hazard Communication standard (OSHA).