



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 : 27400northamerica

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.
Email: motul_hse@motul.fr

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

Association/Organisation : .

Other emergency numbers

UNITED STATES AND CANADA : 001 866 928 0789
BRAZIL : +55 11 3197 5891

MEXICO : +52 55 5004 8763
CHILE : +562 2582 9336

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

HCS compliant.

This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

This mixture does not present a health hazard with the exception of possible occupational exposure thresholds (see paragraphs 3 and 8).

2.2. Label elements

HCS compliant.

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 - Response :

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

2.3. Other hazards

No data available.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Composition :

Identification	HCS	Nota	%
CAS: 143-22-6 EC: 205-592-6 REACH: 01-2119531322-53 2-(2-(2-BUTOXYETHOXY)ETHOXY)ETHANOL	GHS05 Dgr Eye Dam. 1, H318		2.5 <= x % < 10
CAS: 112-34-5 EC: 203-961-6 REACH: 01-2119475104-44	GHS07 Wng Eye Irrit. 2, H319	[1]	2.5 <= x % < 10

2-(2-BUTOXYETHOXY)ETHANOL			
CAS: 111-46-6 EC: 203-872-2 REACH: 01-2119457857-21	GHS07, GHS08 Wng Acute Tox. 4, H302 STOT RE 2, H373	[1]	0 <= x % < 1
2,2'-OXYDIETHANOL			

Information on ingredients :

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

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.

7.1. Precautions for safe handling

Always wash hands after handling.

Avoid contact with eyes.

No special precaution apart from the observance of hygiene rules

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.

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 (2017/164/UE, 2009/161/UE, 2006/15/CE, 2000/39/CE, 98/24/CE)

CAS	VME-mg/m3 :	VME-ppm :	VLE-mg/m3 :	VLE-ppm :	Notes :
112-34-5	67.5	10	101.2	15	-

- Germany - AGW (BAuA - TRGS 900, 21/06/2010) :

CAS	VME :	VME :	Excess	Notes
112-34-5		10 ppm 67 mg/m3		1,5 (I)
111-46-6		10 ppm 44 mg/m3		4(II)

- France (INRS - ED984 :2012) :

CAS	VME-ppm :	VME-mg/m3 :	VLE-ppm :	VLE-mg/m3 :	Notes :	TMP No :
112-34-5	10	67.5	15	101.2	-	-

- UK / WEL (Workplace exposure limits, EH40/2005, 2007) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
111-46-6	23 ppm 101 mg/m3				

Derived no effect level (DNEL) or derived minimum effect level (DMEL):

2,2'-OXYDIETHANOL (CAS: 111-46-6)

Final use:

Exposure method:

Potential health effects:

DNEL :

Exposure method:

Potential health effects:

DNEL :

Workers.

Dermal contact.

Long term systemic effects.

106 mg/kg de poids corporel/jour

Inhalation.

Long term systemic effects.

60 mg de substance/m3

Final use:

Exposure method:
Potential health effects:
DNEL :

Consumers.

Dermal contact.
Long term systemic effects.
53 mg/kg de poids corporel/jour

Exposure method:
Potential health effects:
DNEL :

Inhalation.
Long term systemic effects.
12 mg de substance/m3

2-(2-BUTOXYETHOXY)ETHANOL (CAS: 112-34-5)

Final use:

Exposure method:
Potential health effects:
DNEL :

Workers.

Dermal contact.
Long term systemic effects.
20 mg/kg de poids corporel/jour

Exposure method:
Potential health effects:
DNEL :

Inhalation.
Short term systemic effects.
101.2 mg de substance/m3

Exposure method:
Potential health effects:
DNEL :

Inhalation.
Long term systemic effects.
67 mg de substance/m3

Exposure method:
Potential health effects:
DNEL :

Inhalation.
Short term local effects.
50.6 mg de substance/m3

Final use:

Exposure method:
Potential health effects:
DNEL :

Consumers.

Ingestion.
Long term systemic effects.
1.25 mg/kg de poids corporel/jour

Exposure method:
Potential health effects:
DNEL :

Dermal contact.
Long term systemic effects.
10 mg/kg de poids corporel/jour

Exposure method:
Potential health effects:
DNEL :

Inhalation.
Long term systemic effects.
34 mg de substance/m3

2-(2-(2-BUTOXYETHOXY)ETHOXY)ETHANOL (CAS: 143-22-6)

Final use:

Exposure method:
Potential health effects:
DNEL :

Workers.

Dermal contact.
Long term systemic effects.
50 mg/kg de poids corporel/jour

Exposure method:
Potential health effects:
DNEL :

Inhalation.
Long term systemic effects.
195 mg de substance/m3

Final use:

Exposure method:
Potential health effects:
DNEL :

Consumers.

Ingestion.
Long term systemic effects.
2.5 mg/kg de poids corporel/jour

Exposure method:
Potential health effects:
DNEL :

Dermal contact.
Long term systemic effects.
25 mg/kg de poids corporel/jour

Exposure method:
Potential health effects:
DNEL :

Inhalation.
Long term systemic effects.
117 mg de substance/m3

Predicted no effect concentration (PNEC):

2,2'-OXYDIETHANOL (CAS: 111-46-6)

Environmental compartment:	Soil.
PNEC :	1.53 mg/kg
Environmental compartment:	Fresh water.
PNEC :	10 mg/l
Environmental compartment:	Sea water.
PNEC :	1 mg/l
Environmental compartment:	Intermittent waste water.
PNEC :	10 mg/l
Environmental compartment:	Fresh water sediment.
PNEC :	20.9 mg/kg
Environmental compartment:	Waste water treatment plant.
PNEC :	199.5 mg/l

2-(2-BUTOXYETHOXY)ETHANOL (CAS: 112-34-5)

Environmental compartment:	Soil.
PNEC :	0.4 mg/kg
Environmental compartment:	Fresh water.
PNEC :	1.0 mg/l
Environmental compartment:	Sea water.
PNEC :	0.1 mg/l
Environmental compartment:	Intermittent waste water.
PNEC :	3.9 mg/l
Environmental compartment:	Fresh water sediment.
PNEC :	4.0 mg/kg
Environmental compartment:	Marine sediment.
PNEC :	0.4 mg/kg
Environmental compartment:	Waste water treatment plant.
PNEC :	200 mg/l
Environmental compartment:	Salt water predators (oral).
PNEC :	56 mg/kg

2-(2-(2-BUTOXYETHOXY)ETHOXY)ETHANOL (CAS: 143-22-6)

Environmental compartment:	Soil.
PNEC :	0.45 mg/kg
Environmental compartment:	Fresh water.
PNEC :	1.5 mg/l
Environmental compartment:	Sea water.
PNEC :	0.25 mg/l
Environmental compartment:	Intermittent waste water.
PNEC :	5.0 mg/l
Environmental compartment:	Fresh water sediment.
PNEC :	5.77 mg/kg
Environmental compartment:	Marine sediment.
PNEC :	0.13 mg/kg

Environmental compartment: Waste water treatment plant.
PNEC : 200 mg/l

Environmental compartment: Salt water predators (oral).
PNEC : 111 mg/kg

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

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

Wear suitable protective gloves in the event of prolonged or repeated skin contact.

- 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

General information :

Physical state :	Fluid liquid.
Color:	Amber

Important health, safety and environmental information

pH :	Not relevant.
Flash point interval :	Not relevant.
Vapour pressure (50°C) :	Below 110 kPa (1.10 bar).
Density :	> 1
Water solubility :	Soluble.
Viscosity :	5-10 cSt ASTM D 445

9.2. Other information

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

No data available.

11.1.1. Substances

Specific target organ systemic toxicity - repeated exposure :

2,2'-OXYDIETHANOL (CAS: 111-46-6)

Oral route :

50 < C <= 100 mg/kg body weight/day

Duration of exposure : 90 jours

11.1.2. Mixture

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.

Serious damage to eyes/eye irritation :

Mild eye irritation

Aspiration hazard :

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

May cause lung damage if swallowed

SECTION 12 : ECOLOGICAL INFORMATION

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

12.1. Toxicity

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

Not very mobile in soil.

The product is insoluble in water and will spread on the surface

Water soluble

Mobile in soil

12.5. Results of PBT and vPvB assessment

No data available.

12.6. 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

-

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:

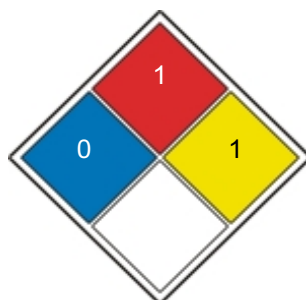
No data available.

- 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
112-34-5	2-(2-BUTOXYETHOXY)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

Unlisted.

- New Jersey : Right to Know

Unlisted.

- Pennsylvania : Hazardous Substance

Unlisted.

- Rhode Island : Hazardous substance list

Unlisted.

- TSCA (Toxic Substances Control Act) - USA

All components are listed or exempted.

15.2. Chemical safety assessment

Product is not classified health and environmental hazard. Exposure scenarios are not required.

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 :

H302	Harmful if swallowed.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure .

Abbreviations :

DNEL : Derived No-Effect Level

PNEC : Predicted No-Effect Concentration

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.

PBT: Persistent, bioaccumulable and toxic.

vPvB : Very persistent, very bioaccumulable.

HCS : Hazard Communication standard (OSHA).