SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 2015/830)

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

1.1. Product identifier

Product name : RBF 600 FL 12x0.500L AM
Product code : 100949

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 : 33.1.48.11.70.00. Fax: 33.1.48.33.28.79. Telex: .
Email : motul_hse@motul.fr

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

Association/Organisation : .

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

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).
This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

2.2. Label elements

In compliance with EC regulation No. 1272/2008 and its amendments.

Precautionary statements - General :

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.

2.3. Other hazards

The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC) >= 0.1% published by the European CHemicals Agency (ECHA) under article 57 of REACH: http://echa.europa.eu/fr/candidate-list-table
The mixture satisfies neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Composition :

Identification	(EC) 1272/2008	Note	%
INDEX: 603-183-00-0 CAS: 143-22-6 EC: 205-592-6 REACH: 01-2119531322-53 2-[2-(2-BUTOXYETHOXY)ETHOXY]ETHANOL	GHS05 Dgr Eye Dam. 1, H318		10 <= x % < 25
CAS: 111-46-6 EC: 203-872-2 REACH: 01-2119457857-21 2,2'-OXYDIETHANOL	GHS07, GHS08 Wng Acute Tox. 4, H302 STOT RE 2, H373	[1]	2.5 <= x % < 10
CAS: 111-77-3 EC: 203-906-6 REACH: 01-2119475100-52 2-(2-METHOXYETHOXY)ETHANOL	GHS08 Wng Repr. 2, H361d	[1] [2]	1 <= x % < 2.5
CAS: 112-34-5 EC: 203-961-6	GHS07 Wng	[1]	1 <= x % < 2.5

REACH: 01-2119475104-44 2-(2-BUTOXYETHOXY)ETHANOL	Eye Irrit. 2, H319		

Information on ingredients :

[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

In the event of a fire, use :
- foam
- powder
- carbon dioxide (CO2)
- sprayed water or water mist

Unsuitable methods of extinction

In the event of a fire, do not use :
- 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
Use only in well-ventilated areas.

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.
Keep container tightly closed and dry.
Storage life: 24 months.

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 (2009/161/EU, 2006/15/EC, 2000/39/EC, 98/24/EC)

CAS	VME-mg/m3 :	VME-ppm :	VLE-mg/m3 :	VLE-ppm :	Notes :
111-77-3	50.1	10	-	-	Peau
112-34-5	67.5	10	101.2	15	-

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

CAS	VME :	VME :	Excess	Notes
111-46-6	10 ml/m3	44 mg/m3	4(I)	DFG, Y
112-34-5	-	100 mg/m3	1(I)	DFG, Y

- France (INRS - ED984 :2008) :

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

- Ireland (Code of practice for the safety, Health and Welfare at Work, 2010) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
111-46-6	23 ppm	-	-	-	-

- Denmark (2007) :

CAS	TWA :	TWA :	Anm :			
111-46-6	2.5 ppm	11 mg/m3	-			

112-34-5	-	100 mg/m3	-			

- Poland (2009) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
111-46-6	10 mg/m3	-	-	-	-

- Sweden (AFS 2007:2) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
111-46-6	10 ppm	20 ppm	-	-	-
112-34-5	15 ppm	30 ppm	-	-	-

Slovakia (Regulation No. 300/2007) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
111-46-6	10 ppm	44 mg/m3	II..2		
112-34-5		100 mg/m3	I.		

- Switzerland (SUVA 2009) :

CAS	VME-mg/m3 :	VME-ppm :	VLE-mg/m3 :	VLE-ppm :	Temps :	RSB :
111-46-6	44	10	176	40	4x15	-
112-34-5	67*	10*	101,2*	15*	4x15*	-

- Finland (HTP-värden 2009) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
111-77-3	10 ppm	-	-	-	-

- Netherlands / MAC-waarde (SER, 4 May 2010) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
112-34-5	9 ppm	-	-	-	-

- Spain (Instituto Nacional de Seguridad e Higiene en el Trabajo (INSHT), Mayo 2010) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
112-34-5	100 mg/m3	-	-	-	-

Czech Republic (Regulation No. 361/2007) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
112-34-5	100 mg/m3	200 mg/m3	-	-	-

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

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

Final use: **Workers.**

Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 20 mg/kg de poids corporel/jour

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 67 mg de substance/m3

Exposure method: Inhalation.
Potential health effects: Short term systemic effects.
DNEL : 101.2 mg de substance/m3

Exposure method: Inhalation.
Potential health effects: Short term local effects.
DNEL : 50.6 mg de substance/m3

Final use: **Consumers.**

Exposure method: Ingestion.
Potential health effects: Long term systemic effects.
DNEL : 1.25 mg/kg de poids corporel/jour

Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 10 mg/kg de poids corporel/jour

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 34 mg de substance/m3

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

Final use: **Workers.**

Exposure method: Dermal contact.

Potential health effects: Long term systemic effects.
DNEL : 0.53 mg/kg de poids corporel/jour

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 50.1 mg de substance/m3

Final use: **Consumers.**
Exposure method: Ingestion.
Potential health effects: Long term systemic effects.
DNEL : 1.5 mg/kg de poids corporel/jour

Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 0.27 mg/kg de poids corporel/jour

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 25 mg de substance/m3

2,2'-OXYDIETHANOL (CAS: 111-46-6)
Final use: **Workers.**
Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 106 mg/kg de poids corporel/jour

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 60 mg de substance/m3

Final use: **Consumers.**
Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 53 mg/kg de poids corporel/jour

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 12 mg de substance/m3

Predicted no effect concentration (PNEC):

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-METHOXYETHOXY)ETHANOL (CAS: 111-77-3)

Environmental compartment:	Soil.
PNEC :	2.44 mg/kg
Environmental compartment:	Fresh water.
PNEC :	12 mg/l
Environmental compartment:	Sea water.
PNEC :	1.2 mg/l
Environmental compartment:	Intermittent waste water.
PNEC :	12 mg/l
Environmental compartment:	Fresh water sediment.
PNEC :	44.4 mg/kg
Environmental compartment:	Marine sediment.
PNEC :	0.44 mg/kg
Environmental compartment:	Waste water treatment plant.
PNEC :	10000 mg/l
Environmental compartment:	Salt water predators (oral).
PNEC :	0.9 mg/kg

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

8.2. Exposure controls

Suitable technical inspections

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

Wear suitable protective gloves in the event of prolonged or repeated skin contact.
Type of gloves recommended :
- Natural latex
- Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))
- Butyl Rubber (Isobutylene-isoprene copolymer)
- PVC (polyvinyl chloride)

Recommended properties :
- Impervious gloves in accordance with standard EN374

- 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

Particle filter according to standard EN143 :
- P2 (White)

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.
odor	Weak

Important health, safety and environmental information

pH :	Not stated.
	Slightly basic.
Boiling point/boiling range :	261 °C.
Flash Point Interval :	PE > 100°C.
Vapour pressure (50°C) :	Not relevant.
Density :	> 1
Water solubility :	Soluble.
Partition coefficient: n-octanol/water :	<2.0
Viscosity :	5-10 mm²/s à 20°C
Self-ignition temperature :	301 °C.
Decomposition point/decomposition range :	301 °C.

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

Avoid :
- heat
- flames and hot surfaces

10.5. Incompatible materials

Keep away from :
- strong oxidising agents

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

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 exposure may cause skin irritation and dermatitis, due to degreasing properties to the product

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

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

12.2.1. Substances

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

Biodegradability : no degradability data is available, the substance is considered as not degrading quickly.

12.2.2. Mixtures

Rapidly degradable.

Biodegradability :

12.3. Bioaccumulative potential

12.3.2. Mixtures

Octanol/water partition coefficient : log Koe < 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. Other adverse effects

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

German regulations concerning the classification of hazards for water (WGK) :

WGK 1 (VwVwS vom 27/07/2005, KBws) : Slightly hazardous for water.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

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.

Codes of wastes (Decision 2001/573/EC, Directive 2006/12/EEC, Directive 94/31/EEC on hazardous waste) :

16 01 13 * brake fluids

SECTION 14 : TRANSPORT INFORMATION

Exempt from transport classification and labelling.

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2015 - IMDG 2014 - ICAO/IATA 2015).

SECTION 15 : REGULATORY INFORMATION

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

- Classification and labelling information included in section 2:

The following regulations have been used:

- EU Regulation No. 1272/2008 amended by EU Regulation No. 487/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 758/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 944/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 605/2014.

- Container information:

No data available.

- Particular provisions :

No data available.

- German regulations concerning the classification of hazards for water (WGK) :

WGK 1 (VwVwS vom 27/07/2005, KBws) : Slightly hazardous for water.

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 :

H302	Harmful if swallowed.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure .

Abbreviations :

DNEL : Derived No-Effect Level

PNEC : Predicted No-Effect Concentration

CMR: Carcinogenic, mutagenic or reprotoxic.

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.
WGK : Wassergefahrdungsklasse (Water Hazard Class).