



PACKAGING :

PRODUCT		
Appearance:	Plastic bottle of 500 ml	Plastic bottle of 1L
Code:	BFE1000.05	BFE1000.10
Barcode (EAN13)	8059267093128	8059267093135

Synthetic based brakes fluid for disc and drum brake systems of cars, commercial vehicles, industrial vehicles, scooters and motorcycles.

The brake fluid "OP EXTRA FLUID Synthetic Brake Fluid – DOT 4" complies with following standards:

- SAE – J 1703
- SAE – J 1704
- FMVSS 116 – DOT 3 e DOT4

1) Physical and chemical characteristics

High boiling point (+ 248 °C min.), Avoids the phenomenon of "vapor lock" (the presence of vapor bubbles in the brake circuit). Wet Boiling Point 163 °C min.

Low pour point for use at low environmental temperatures (down to -40 °C).

Excellent anti-corrosion, rust and oxidation processes for protection of metallic and other components the braking circuit.

Total compatibility with rubbers and packing in order to avoid swelling or brittleness of the rubber or plastic seals.

High chemical stability to guarantee the stability in the most severe conditions of thermal stress. Can be used in machinery of every make, type and power.



Technical Product Sheet

2) Physical properties

Characteristics	OP EXTRA FLUID	LIMITS SEA J1703	FMVSS 116
Aspect	Clear	Clear	***
Water (%) *	<0,02	0,08 max	***
pH	8.9	7.0 - 11.5	S6.4
pH after corrosion	7.8	7.0 - 11.5	S6.4
Specific weight 15°C (Kg/m ³)	1068 - 1072	***	***
E.R.B.P. (°C) Equilibrium Reflex Bolling Point	245	230 min.	S6.1
Wet E.R.B.P.	163	155 min.	S6.2
Viscosity (mm ² /s)			
-40 °C	1400	1800 max	S6.3
+100 °C	2.2	1.8 min.	
Weight loss to evaporation to 100°C (%)	60.0	80 max	***

* The analysis could show Karl Fischer water content higher than the real. This is explained by the chemical reaction that occurs between the reagent K.F. and some inhibitors present in our product. Because of these reactions it is indicated by the instrument a higher humidity value.

3) Typical properties

Corrosion test on metals:

METAL Corrosion (mg/cm ²)	OP EXTRA FLUID	LIMITS SEA J1703
Fe stagnato	0.02	0.20 max
Steel	0.05	0.20 max
Aluminum	0.01	0.10 max
Cast iron	0.04	0.20 max
Brass	0.02	0.40 max
Copper	0.03	0.40 max

Fluidity and appearance at low temperatures:

	OP EXTRA FLUID	LIMITS SEA J1703
a - 40°C aspect	limpido 2	limpido 10 max
Flow time (sec.)	limpido 8	limpido 35 max

Tolerance to water:

	OP EXTRA FLUID	LIMITS SEA J1703
a - 40°C aspect	limpido	limpido
Flow time (sec.)	3	10 max
a + 60°C aspect Sediments (% V/V)	limpido assenti	limpido 0.15 max



Technical Product Sheet

4) Conduct towards particular rubber

Swelling Rubber SBR a 70 °C	OP EXTRA FLUID	LIMITS
Decrease in hardness (IRHD)	2.5	10 max
Increased diameter (mm)	0.60	0.15 - 1.40

Swelling Rubber SBR a 120 °C	OP EXTRA FLUID	LIMITS
Decrease in hardness (IRHD)	6	15 max
Increased diameter (mm)	0.80	0.15 - 1.40

5) Methods of use

OP EXTRA FLUID is ready for use. It 'a synthetic brake fluid, miscible with all brake fluids of the same type.
NOT MISCIBLE WITH LIQUID BRAKES SILICON BASE.

6) Storage, preservation and maturing of the product

Unopened, sealed, stored away from direct light, at temperatures below 30 ° C it is stable for at least three years.
FEAR HUMIDITY 'THAT THE PRODUCT DEGRADES.

7) Specifications respected

The product meets the following specifications::

FMVSS 116	DOT 3 e DOT 4	SAE J1703/1704	ISO 4925 Classe 3 / 4	FIAT 9.55597
FORD WSS-M6C65-A2	WW 501.14	MB 331.0	NH 800A	OPEL/GM 19 42 421
CUNA NC 956-01 DOT 4	IVECO 18-1820	Jis K2233 Class 4		


Note:

Data contained in this document are the result of technological research in our laboratories and are given for information purposes only. We exclude all liability resulting from choice or wrong application of the product and the lack of necessary precautions that must be verified by the user carefully.

The company **EXO Automotive Spa** reserve the right to change the formulation of this product at any time and without notice.

This technical data sheet automatically cancels the previous. This publication and any other information needed to provide you our technical instructions and advice; this does not imply any responsibility on our part. For information on the safety of the product, read the Material Safety Data Sheet. This document is drawn up in original in Italian language.



<p align="center">MSDS according to 1907/2006/EC, Article 31</p>	<p align="center">Update N. 00 of 20/03/2017 Sheet created on: 20/03/2017</p>	
<p align="center">OP EXTRA FLUID SYNTHETIC BRAKE FLUID – DOT 4</p>		

1 – IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier

Trade name: OP EXTRA FLUID SYNTHETIC BRAKE FLUID – DOT 4

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

Sector of Use:

- SU21 Consumer uses: Private households / general public / consumers
- SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Product category: PC17 Hydraulic fluids

Application of the substance / the mixture: brake Fluid

1.3 Details of the supplier of the safety data sheet


Manufacturer / Supplier:

EXO Automotive Spa
Via San Marco 11c int. 69
35129 Padova (PD) – Italy
Tel. +39 049 744 99 70 - Fax +39 049 744 99 71
sito: www.exoautomotive.com
e-mail: info@exoautomotive.com

1.4 Emergency telephone number

EXO Automotive Spa +39 049 744 99 70 (Orario uffici: dal Lunedì al Venerdì dalle 9:00 alle 13:00 e dalle 14:00 alle 18:00)



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2 – HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008:

The product is not classified according to the CLP regulation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008: Void

Hazard pictograms: Void

Signal word: Void

Hazard statements: Void

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.


vPvB: Not applicable.

3 – COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substance composition: Void

3.2 Chemical characterisation: Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:		
<p>CAS: 143-22-6 EINECS: 205-592-6 Reg.nr.: 01-2119891009-32-0000</p>	<p>2-[2-(2-butoxyethoxy)ethoxy]ethanol  Eye Dam. 1, H318</p>	<p>15 – 30 %</p>

Additional information: For the wording of the listed risk phrases refer to section 16.



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4 – FIRST AID MEASURES

4.1 Description of first aid measures

General information: No special measures required.

After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact: Rinse with warm water.

After eye contact: Rinse opened eye for several minutes under running water.

After swallowing: Rinse out mouth and then drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 – FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.

5.2 Special hazards arising from the substance or mixture

No further relevant information available.

5.3 Advice for firefighters

Protective equipment: Use to respiratory protection.

6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing.

6.2 Environmental precautions:

Do not allow to enter sewers/ surface or ground water.

Inform respective authorities in case of seepage into water course or sewage system.

6.3 Methods and material for containment and cleaning up:

Absorb liquid components with liquid-binding material.


6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.



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7 – HANDLING AND STORAGE

7.1 Precautions for safe handling

You should follow the usual precautions for handling chemical products

Information about fire - and explosion protection: No special measures required.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: Store only in the original receptacle.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: None.

7.3 Specific end use(s)

No further relevant information available

8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Additional information about design of technical facilities: No further data; see item 7.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Respiratory protection: Not required.


Protection of hands: Void.

Material of gloves: Void.

Penetration time of glove material: Void.

Eye protection: Goggles recommended during refilling.



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9 – PHYSICAL AND CHEMICAL PROPERTIES


9.1 Information on basic physical and chemical properties

General Information	
Appearance:	
Form:	Fluid
Colour:	Light yellow
Odour:	Characteristic
Odour threshold:	Not determined
pH value:	7 - 8
Change in condition	
Melting point/Melting range:	- 45 °C
Boiling point/Boiling range:	> 245 °C
Flash point:	> 100 °C
Flammability (solid, gaseous):	Not applicable
Ignition temperature:	> 200 °C
Decomposition temperature:	Not determined
Self-igniting:	Product is not self-igniting
Danger of explosion:	Product does not present an explosion hazard
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapour pressure at 20 °C:	23 hPa
Density at 20 °C:	1.06 – 1.08 g/cm ³
Relative density:	Not determined
Vapour density:	Not determined
Evaporation rate:	Not determined
Solubility in / Miscibility with water:	Soluble
Partition coefficient (n-octanol/water):	Not determined
Viscosity:	
Dynamic:	Not determined
Kinematic at 20 °C:	55 – 65 mm ² /s

9.2 Other information

No further relevant information available.



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10 – STABILITY AND REACTIVITY

10.1 Reactivity: No further relevant information available.

10.2 Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions: No dangerous reactions known.

10.4 Conditions to avoid: No further relevant information available.

10.5 Incompatible materials: Avoid contact with acids and oxidants.

10.6 Hazardous decomposition products: No dangerous decomposition products known.

11 – TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Primary irritant effect:

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):

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

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.



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12 – ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic toxicity

No further relevant information available.

12.2 Persistence and degradability

No further relevant information available.

12.3 Bioaccumulative potential

Not worth-mentioning accumulating in organisms.

12.4 Mobility in soil

No further relevant information available

Additional ecological information:

General notes:

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

12.6 Other adverse effects

No further relevant information available.

13 – DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods


Recommendation: Dispose of in accordance with national regulations.

Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agents: Water



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14 – TRANSPORT INFORMATION

14.1 UN-Number ADR, ADN, IMDG, IATA	Void
14.2 UN proper shipping name ADR, ADN, IMDG, IATA	Void
14.3 Transport hazard class(es) ADR, ADN, IMDG, IATA Class	Void
14.4 Packing group ADR, IMDG, IATA	Void
14.5 Environmental hazards: Marine pollutant:	NO
14.6 Special precautions for user	Not applicable
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable
Transport/Additional information:	Not dangerous according to the above specifications
UN "Model Regulation":	Void

15 – REGULATORY INFORMATION

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


Directive 2012/18/EU

Named dangerous substances - ANNEX I: None of the ingredients is listed.

15.2 Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.



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16 – OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Relevant phrases

H318 Causes serious eye damage.

Contact: ---

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1