



SAFETY DATA SHEET

According to Regulation EC No 1907/2006 - REACH and Regulation EC No 1272/2008 - CLP

REPSOL MOTO DOT 4 BRAKE FLUID

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

1.1 Product identifier

Commercial name	REPSOL MOTO DOT 4 BRAKE FLUID
Chemical name	Brake fluid.
Synonyms	N/A
CAS	N/A
EC (EINECS)	N/A
Index No (annex VI	
Regulation EC No	N/A
1272/2008)	
Registration Number	N/A
Authoritation Number	N/A
Material Code	RP713A

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

Hydraulic fluid for use in automotive brake and clutch systems.

1.3 Details of the supplier of the safety data sheet



Company	REPSOL LUBRICANTES Y ESPECIALIDADES, S.A.
Address	Méndez Álvaro, 44 28045 - MADRID, Spain
Phone	+34 917538000 /+34 917538100
Fax	+34 902303145
e-mail address	FDSRLESA@repsol.com

1.4 Emergency telephone number

Carechem 24: +44 (0) 1235 239 670
Carechem 24: +1 215 207 0061
Carechem 24: 001866 928 0789

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SECTION 2. Hazards identification

2.1 Classification of the substance or mixture	2.2 Label elements	
CLASSIFICATION (Dir.67/548/CEE o Dir.1999/45/CE)	LABELLING	
Xi; R36	Symbols Xi	
	Phrases R	R36: Irritating to eyes.
	Phrases S	S2: Keep out of the reach of children. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S46: If swallowed, seek medical advice immediately and show this container or label.
CLASSIFICATION Reg.(CE)1272/2008(CLP)	LABELLING	
Serious eye damage/eye irritation: Eye Irrit. 2	Pictograms GHS07	
	Signal word	Warning
	Hazard statements	H319: Causes serious eye irritation.
	supplemental information	N/A

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	Precautionary statements	P102: Keep out of reach of children. 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. P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
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2.3 Other hazards

Results of the assessment of PBT and vPvB in the product, in accordance with the criteria set out in Annex XIII of REACH, can be found in Section 12.5 of this MSDS.

Please refer to Sections 5, 6 and 7 of this MSDS for information on other dangers, different from classification dangers but which may contribute to the overall hazards of the product.

SECTION 3. Composition/information on ingredients

Dangerous components (Dir. 67/548/CEE)	Concentration (%)	CLASSIFICATION
Triethylene glycol monobutyl ether CAS : 143-22-6 EC (EINECS) : 205-592-6 Registration Number : 01-2119531322-53-XXXX	>20 <45	Xi, R41
Diethylene glycol CAS : 111-46-6 EC (EINECS) : 203-872-2 Registration Number : 01-2119457857-21-XXXX	>10 <25	Xn; R22

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Diethylene glycol monomethyl ether CAS : 111-77-3 EC (EINECS) : 203-906-6 Registration Number : 01-2119475100-52-XXXX	<3	Xn; R63
Diethylene glycol monobutyl ether CAS : 112-34-5 EC (EINECS) : 203-961-6 Registration Number : 01-2119475104-44-XXXX	<3	Xi; R36
Dangerous components Reg. (CE) 1272/2008 (CLP)	Concentration (%)	Hazard statements
Triethylene glycol monobutyl ether CAS : 143-22-6 EC (EINECS) : 205-592-6 Registration Number : 01-2119531322-53-XXXX	>20 <45	H318
Diethylene glycol CAS : 111-46-6 EC (EINECS) : 203-872-2 Registration Number : 01-2119457857-21-XXXX	>10 <25	H302, H373
Diethylene glycol monomethyl ether CAS : 111-77-3 EC (EINECS) : 203-906-6 Registration Number : 01-2119475100-52-XXXX	<3	H361d
Diethylene glycol monobutyl ether CAS : 112-34-5 EC (EINECS) : 203-961-6 Registration Number : 01-2119475104-44-XXXX	<3	H319

SECTION 4. First aid measures
4.1. Description of first aid measures

Inhalation: Move the person to fresh air.
Keep victim still.
Call for medical attention.

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Ingestion/Aspiration: If affected person is conscious, give plenty of water.
Do not give anything by mouth to an unconscious person.
Seek medical care.

Contact skin: Remove shoes and contaminated clothing and wash affected areas with soap and water.

Contact eyes: Hold eyelids open and flush with large amounts of water for 15 min.

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

Inhalation: Exposures to product vapors may cause nose and throat irritation, and respiratory tract irritation.

Ingestion/Aspiration: Swallowing may cause dizziness, drowsiness, nausea and vomiting.

Contact skin: Liquid may cause conjunctive irritation and may possibly damage the cornea. Direct contact with skin may cause irritation.
Repeated or prolonged contact may cause removal of natural fats from the skin, causing irritation and dermatitis.

Contact eyes: Liquid may cause conjunctive irritation and may possibly damage the cornea.

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

If the symptoms do not disappear, seek medical care.

SECTION 5. Firefighting measures

5.1. Extinguishing media

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Suitable extinguishing media: Dry chemical powder, anti-alcohol foam, CO₂ and water spray.

Unsuitable extinguishing media: Water jets.

5.2. Special hazards arising from the substance or mixture

Combustion products: CO₂, H₂O and CO (in the absence of oxygen).

Special measures: Move container from fire area if it can be done without risk. Water spray applied to surface leads to foam formation which helps to extinguish the fire. Consult and follow existing safety and emergency standard procedures.

Special hazards: The product should be pre-heated for ignition to occur. Fire may produce irritating gases.

5.3. Advice for firefighters:

Suit and gloves resistant to heat. Self-contained breathing apparatus in case of high concentrations of fumes or thick smoke.

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid contact with liquid and inhalation of product vapors.

Personal protection: Use respiratory protection mask if necessary if vapors are present. Safety goggles, waterproof gloves and other product resistant protective clothing to avoid contact with liquid.

6.2. Environmental precautions

Avoid spillage into sewers and public waterways.
Avoid product dispersion.

6.3. Methods and material for containment and cleaning up

Ventilate area of leak or spill.
Isolate and remove spilled material with dry sand or other inert material.

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Large quantities: pump the product.
Wash the contaminated area with water.

6.4. Reference to other sections

Section 8 contains more detailed advice on personal protective equipment and section 13 on waste disposal.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

General precautions: Do not smoke, drink, or eat during handling of product.
Wear appropriate protective equipment to avoid contact or inhalation of the product.
Wash hands using soap.
Eliminate all ignition sources from areas where the product is handled or used: no sparks, flames or static electricity.

Specific conditions: Good local exhaust ventilation system.

7.2. Conditions for safe storage, including any incompatibilities

Temperature and decomposition products: N/A

Dangerous reactions: N/A

Storage conditions: Store at room temperature in cool and well-ventilated places.
Eliminate all possible sources of ignition.
Suitable storage materials are stainless steel and mild steel (low carbon content).
Brake fluid absorbs water from the atmosphere.
Keep containers tightly closed and properly labelled.

Incompatible materials: Mineral oils.

7.3. Specific end use(s)

See section 1 or exposure scenario

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SECTION 8. Exposure controls/personal protection**8.1 Control parameters**

Diethylene glycol (N° CAS: 111-46-6):
INSHT (Spain):VLA-ED: 10 ppm (44 mg/m³) / VLA-EC: 40 ppm (176 mg/m³).
GKV_MAK (Austria): TWA: 10 ppm (44 mg/m³) / STEL: 40 ppm (176 mg/m³).
Arbejdstilsynet (Denmark): TWA: 2,5 ppm (11 mg/m³) / STEL: 5 ppm (22 mg/m³).
TRGS900 AGW (Germany): TWA: 10 ppm (44 mg/m³) / STEL: 40 ppm (176 mg/m³).
NAOSH (Ireland): TWA: 23 ppm (100 mg/m³).
LV Nat. Standardisation and Meterological Centre (Latvia): TWA: 10 mg/m³.
AFS 2005:17 (Sweden): NGV: 10 ppm (45 mg/m³) / KTV: 20 ppm (90 mg/m³).
EH40/2005 WELs (UK): OEL-TWA: 23 ppm (101 mg/m³).

Diethylene glycol monomethyl ether (CAS: 111-77-3): INSHT (Spain): VLA-ED: 10 ppm (50,1 mg/m³).

Diethylene glycol monobutyl ether (CAS:112-34-5):
INSHT (Spain): VLA-ED: 10 ppm (67,5 mg/m³) / VLA-EC: 15 ppm (101,2 mg/m³).
ACGIH (USA): TLV-TWA: 10 ppm (67,5 mg/m³).

DNEL

CAS No.: 143-22-6

DNELs for workers

Long term exposure, systemic effects, dermal (mg/kg/day): 50

Long term exposure, systemic effects, inhalation (mg/m³): 195

DNELs for consumers

Long term exposure, systemic effects, dermal (mg/kg/day): 25

Long term exposure, systemic effects, inhalation (mg/m³): 117

Long term exposure, systemic effects, oral (mg/kg/day): 2.5

CAS No.: 111-46-6

DNELs for workers

Long term exposure, systemic effects, dermal (mg/kg/day): 106

Long term exposure, systemic effects, inhalation (mg/m³): 60

DNELs for consumers

Long term exposure, systemic effects, dermal (mg/kg/day): 53

Long term exposure, systemic effects, inhalation (mg/m³): 12

CAS: 111-77-3

DN(M)ELs for workers

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Long-term exposure - systemic effects, Dermal (mg/kg bw /day):0,53
Long-term exposure - systemic effects, Inhalation (mg/m³):50,1

DN(M)ELs for the general population

Long-term exposure - systemic effects, Dermal (mg/kg bw /day): 0,27
Long-term exposure - systemic effects, Inhalation (mg/m³):25 Long-term exposure - systemic effects, Oral (µg/kg bw /day): 1,5

CAS No.: 112-34-5

DNELs for workers

Short term exposure, local effects, inhalation (mg/m³): 101.2
Long term exposure, systemic effects, dermal (mg/kg/day): 20
Long term exposure, systemic effects, inhalation (mg/m³): 67

DNELs for consumers

Short term exposure, local effects, inhalation (mg/m³): 50.6
Long term exposure, systemic effects, dermal (mg/kg/day): 10
Long term exposure, systemic effects, inhalation (mg/m³): 34
Long term exposure, systemic effects, oral (mg/kg/day): 1.25

PNEC

CAS No.: 143-22-6

PNEC water

PNEC fresh water (mg/L): 1.5

PNEC seawater (mg/L): 0.25

PNEC intermittent leaks (mg/L): 5.0

PNEC for waste water treatment plant

PNEC STP (mg/L): 200

PNEC sediments

PNEC fresh water (mg/kg): 5.77

PNEC seawater (mg/kg): 0.13

PNEC soil

PNEC soil (mg/kg): 0.45

PNEC Secondary oral poisoning

PNEC oral (mg/kg): 111

CAS No.: 111-46-6

PNEC water

PNEC fresh water (mg/L): 10

PNEC fresh water (mg/L): 1

PNEC intermittent leaks (mg/L): 10

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PNEC for waste water treatment plant
PNEC STP (mg/L): 195.5

PNEC sediments
PNEC fresh water (mg/kg): 20.9

PNEC soil
PNEC soil (mg/kg): 1.53

CAS No.: 111-77-3
PNEC water
PNEC fresh water (mg/L): 12
PNEC fresh water (mg/L): 1.2
PNEC intermittent leaks (mg/L): 12

PNEC for waste water treatment plant
PNEC STP (mg/L): 10,000

PNEC sediments
PNEC fresh water (mg/kg): 44,4
PNEC seawater (mg/kg): 0.44

PNEC soil
PNEC soil (mg/kg): 2,44

PNEC Secondary oral poisoning
PNEC oral (mg/kg): 0.9

CAS No.: 112-34-5
PNEC water
PNEC fresh water (mg/L): 1.0
PNEC fresh water (mg/L): 0.1
PNEC intermittent leaks (mg/L): 3.9

PNEC for waste water treatment plant
PNEC STP (mg/L): 200

PNEC sediments
PNEC fresh water (mg/kg): 4,0
PNEC seawater (mg/kg): 0.4

PNEC soil
PNEC soil (mg/kg): 0.4

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PNEC Secondary oral poisoning
PNEC oral (mg/kg): 56

8.2 Exposure controls

Local appropriate ventilation. Do not smoke and avoid all ignition sources. Avoid prolonged contact and inhalation of vapors.

Individual protection measures, such as personal protective equipment

Respiratory protection: In presence of high concentrations of product vapors, use respiratory protective mask with organic vapor filter.

Skin protection: Nitrile gloves resistant to chemical products (permeation index above 2: more than 30 minutes of waterproofing). Appropriate shoes and clothing.

Eye/face protection: Safety goggles to avoid splashes.

Other protective equipment: Showers and eye-washers in the work area.

Specific hygiene measures: Good work practices and the adoption of good personal hygiene measures reduce unnecessary exposures. Hot showers should be used. Use soap and no other solvents. Grossly contaminated clothing and tools should be changed immediately and dry cleaned. Grossly contaminated clothing should be changed immediately. Gloves should be reviewed to prevent internal contamination. Use skin reconditioning cream after work.

Medical Conditions Aggravated by Exposure: N/A

Environmental exposure controls:

Product should not reach the environment through wastewater or sewage. Measures to take in case of accidental release can be found in Section 6 of this MSDS.

SECTION 9. Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Appearance: Liquid

Odour: Odorless.

Odour threshold: N/A

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Colour: Light amber
pH: 7.0-11.5 (ASTM D-1287)
Melting point/freezing point: N/A
Initial boiling point and boiling range: 260 °C min. (SAE J 1704)
Flash point: N/A
Evaporation rate: N/A
Flammability (solid, gas): N/A
Upper/lower flammability or explosive limits: N/A
Vapour pressure: N/A
Vapour density: N/A
Density: 1.044 g/cm³ typical (20 °C) (ASTM D 4052)
Solubility(ies): N/A
Partition coefficient: n-octanol/water: N/A
Auto-ignition temperature: N/A
Decomposition temperature: N/A
Viscosity: (100 °C) 1,5 cSt min. (ASTM D-445); (-40 °C) 1500 cP max. t (SAE J 1704).
Explosive properties: N/A
Oxidising properties: N/A

9.2 Other information

N/A

SECTION 10. Stability and reactivity

10.1. Reactivity: N/A

10.2. Chemical stability: Stable material at room temperature.

10.3. Possibility of hazardous reactions: Glycol ethers may form hydrogen peroxide during storage. Glycol ethers can react with light metals with evolution of hydrogen.

10.4. Conditions to avoid: High temperatures. Water or moisture. Do not distill to dryness without checking peroxide is formed.

10.5. Incompatible materials: Strong oxidants.

10.6. Hazardous decomposition products: N/A

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SECTION 11. Toxicological information

11.1. Information on toxicological effects

The provided toxicological information results from the application of Annexes VII to XI of Regulation 1907/2006 (REACH).

Acute toxicity: The product has a relatively low acute toxicity. DL50 (oral) rat = > 5000 mg/kg; DL50 (skin) rabbit = > 3000 mg/kg.

Skin corrosion/irritation: Repeated or prolonged contact with the preparation, may cause the removal of fat from the skin and dermatitis.

Serious eye damage/irritation: Causes serious eye irritation. (OECD 405)

Respiratory or skin sensitisation: N/A

Germ cell mutagenicity: N/A

Carcinogenicity: N/A

Product rating corresponds to the comparison of the results from the toxicological studies with the criteria set out in Regulation (EC) No 1272/2008 for CMR, categories 1A and 1B.

Reproductive toxicity: CAS: 112-34-5. It has been shown to affect fetal development in some studies and is classified as R63 / H361d.

STOT-single exposure: CAS: 111-46-6. STOT effects on human kidney and gastrointestinal tract.

STOT-repeated exposure: N/A

Aspiration hazard: N/A

SECTION 12. Ecological information

12.1. Toxicity: There are no bioconcentration processes and it is expected that the product would not be toxic to aquatic organisms.

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- 12.2. Persistence and degradability:** The product is expected to be readily biodegradable in soil and water.
- 12.3. Bioaccumulative potential:** Product is not expected to be bioaccumulate.
- 12.4. Mobility in soil:** The product is non-volatile and soluble in water. The product will dissolve rapidly in water. If released to soil it will evaporate at a low rate.
- 12.5. Results of PBT and vPvB assessment:** This mixture contains no substance considered to be PBT or vPvB.
- 12.6. Other adverse effects:** N/A

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Disposal: Recycle material when possible. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with fume treatment.

Handling: Containers properly labeled and closed.

Provisions: Establishments and companies which recover, dispose, store, transport or handle waste should comply with Dir. 2008/98/EC on waste, or other local, national or community provisions.

SECTION 14. Transport information

- 14.1. UN number:** N/A
- 14.2. UN proper shipping name:** N/A
- 14.3. Transport hazard class(es):** N/A
- 14.4. Packing group**
- ADR/RID:** N/A
- IATA-DGR:** N/A

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IMDG: N/A

14.5. Environmental hazards

ADR/RID: N/A

IATA-DGR: N/A

IMDG: N/A

14.6. Transport in bulk in accordance with appendix II of the Marpol agreement 73/78 and the IBC code

No category assigned for the IBC code.

14.7. Special precautions for user

Stable at room temperature during transport. To avoid spills, transport in secure, properly sealed and labeled tanks.

SECTION 15. Regulatory information

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

COMMISSION REGULATION (EU) No 453/2010 : REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS

Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Regulation (EC) No 1272/2008 of the European Parliament and the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures (CLP).

Regulation (EC) No 1907/2006 concerning Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

European Agreement concerning the international carriage of dangerous goods by road (ADR).

Regulation on the international transport of dangerous goods on the railway. (RID)

International maritime code of dangerous goods. (IMDG)

International Air Transport Association (IATA) regulation pertaining to air shipment.

International Bulk Chemical Code (IBC Code), MARPOL 73/78.

Commission Regulation Other hazards

N/A

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15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16. Other information

Glossary

CAS: Chemical Abstract Service
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists.
TLV: Threshold Limit Value
TWA: Time Weighted Average
STEL: Short-term Exposure Level
REL: Recommendable Exposure Limit
PEL: Permissible Exposure Limit
INSHT: Instituto Nacional de Seguridad e Higiene en el Trabajo.
VLA-ED: Environmental limit value - daily exposure
VLA-EC: Limit environmental value - short exposure
DNEL/DMEL: Derived no-effect level / Derivation of minimal effects levels
PNEC: Predicted No Effect Concentration
LD50: Lethal Dose Medium
LC50: Lethal Concentration Medium
EC50: Effective Concentration Medium
IC50: Inhibitory Concentration Medium
BOD: Biological Oxygen Demand.
NOAEL: No observable adverse effect level
NOEL: No observed effect level
NOAEC: No observed adverse effect concentration
NOEC: No observed effect concentration
N/A: Not applicable
| : Changes from the last revision

Data Bases consulted

EINECS: European Inventory of Existing Commercial Substances.
TSCA: Toxic Substances Control Act, US Environmental Protection Agency.
HSDB: US National Library of Medicine.
RTECS: US Dept. of Health & Human Services.

R phrases/Hazard Class-and-Category shown in the document

R22: Harmful if swallowed.
R41: Risk of serious damage to eyes.
R63: Possible risk of harm to the unborn child.



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H302: Harmful if swallowed.

H318: Causes serious eye damage.

H361d: Suspected of damaging the unborn child.

H373: May cause damage to organs through prolonged or repeated exposure.

Purchasing companies have an obligation to ensure that their employees are properly trained on the safe handling and use of the product in accordance with the guidelines contained in this MSDS.

Furthermore, companies purchasing this product are required to inform their employees, and individuals who could manipulate or use it within their facilities, about all indications included in the MSDS, in particular those relating to the product's risks to the health and safety of people and to the environment.

The information given in this document has been compiled based on the best existing information sources, latest available knowledge and according to the current requirements on classification, packaging and labelling of hazardous substances. It does not imply the information is exhaustive or accurate in all cases. It is the user's responsibility to determine the validity of the information contained in this Material Safety Data Sheet to apply depending on the case.