



Product: BRAKE FLUID DOT 5.1

MATERIAL SAFETY DATA SHEET

1. PREPARATION AND COMPANY IDENTIFICATION

PRODUCT TRADE NAME:

BRAKE FLUID DOT 5.1

PRODUCT CODE: 4S36

USE OR DESCRIPTION:

Synthetic brake fluid.

COMPANY IDENTIFICATION:

PETRONAS LUBRICANTS BELGIUM NV

Ingberthoeveweg 4

B-2630 Aartselaar

Tel +32 (0)3 - 458 12 30

Fax +32 (0)3 - 458 14 78

COMPETENT PERSON FOR SAFETY DATA OF PRODUCT:

Herwig De Landtsheer

e-mail: tcs@be.petronas.com

EMERGENCY NUMBER:

+32 (0)70 - 245 245, Poisons Centre Rue Bruynstraat, B-1120 Brussel/Bruxelles, Belgium

+31 (0)30 - 274 88 88, Nationaal Vergiftigingen Informatie Centrum, Antonie van Leeuwenhoeklaan 9, 3721 MA BILTHOVEN, Nederland

2. HAZARDS IDENTIFICATION

This product is not considered hazardous for people or for environment according to EC directives (see headings 11 and 12, too).

Prolonged or repeated skin contact of product may scour, and that may cause irritations or dermatitis.

The product is biodegradable, but avoid accidental spills of large quantity of product.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Inhibited mixture of polyglycols, polyglycoethers and boric esters.

| HAZARDOUS COMPONENTS | EINECS n° | CAS n° | QUANTITY | SYMBOL | R-PHRASES |
|----------------------|-----------|--------|----------|--------|-----------|
|----------------------|-----------|--------|----------|--------|-----------|



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| | | | | | |
|--|-----------|----------|--------|----|----|
| 2-(2-butoxyethoxy)-ethanol | 203-961-6 | 112-34-5 | <=5 % | Xi | 36 |
| Ethanol, 2-(2-(2-butoxyethoxy)ethoxy)- | 205-592-6 | 143-22-6 | <=15 % | Xi | 36 |

| OTHER COMPONENTS | EINECS n° | CAS n° | QUANTITY | SYMBOL | R-PHRASES |
|-------------------|-----------|------------|----------|--------|-----------|
| Polyethylenglycol | N.D. | 25322-68-3 | <=5 % | - | - |

R-phrases and list of abbreviations: see heading 16.

4. FIRST AID MEASURES

INGESTION:

Do not induce vomiting to avoid aspiration into the respiratory tracts. Wash out thoroughly the mouth with water. Obtain immediate medical attention.

EYE CONTACT:

Rinse immediately and thoroughly with plenty of water for at least 10 minutes keeping eyelids open. Obtain medical attention.

SKIN CONTACT:

Remove contaminated clothes and shoes and rinse thoroughly with plenty of water and soap.

INHALATION:

Expose affected person to fresh air and obtain medical attention.

5. FIRE-FIGHTING MEASURES

FLASH POINT: >100°C (ASTM D 93)

EXTINGUISHING MEDIA:

This product has no special fire risk. In case of fire use foam, carbon dioxide, dry chemical powder and water mist.

Avoid high pressure water jet. Use water jet only to cool down surfaces exposed to fire.

EXPOSURE SPECIAL RISKS:

Don't breathe combustion fumes: fire can form harmful compounds.

PROTECTIVE EQUIPMENT FOR FIREFIGHTERS:

Protective clothing complete with autobreathing feature.

COMBUSTION PRODUCTS:

Oxides of carbon, compounds of nitrogen and products of incomplete combustion.



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6. ACCIDENTAL RELEASE MEASURES

ENVIRONMENTAL PRECAUTION:

Prevent the material from entering soil, sewers and water courses. Contact the appropriate authorities if necessary.

SPILLAGES:

In case of large spills dike and pump into suitable containers for disposal. Contain small spills with absorbent material. Put dirty material in suitable container. Dispose of dirty material in accordance with local or national regulations.

PERSONAL PRECAUTIONS:

Avoid contact with skin and eyes by wearing appropriate protective clothing.

7. HANDLING AND STORAGE

HANDLING:

Avoid frequent and prolonged skin contact and contact with eyes. Provide adequate ventilation to avoid mist or aerosol. Practice reasonable personal cleanliness.

STORAGE:

Avoid moisture pick up. Moisture has an adverse effect on the properties of brake fluids. Store under cover in the original container securely closed away from heat and sources of ignition. Keep out of reach of children and away from food and drink.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:

The recommended exposure limits are:

| CHEMICAL AGENT | LIMIT | |
|-------------------|---------------|------------------------|
| polyethylenglycol | MAC TGG (8 h) | 1 mg/m ³ NL |

TECHNICAL PRECAUTIONS:

Avoid production and diffusion of mist and aerosol with utilization of localized ventilation/aspiration or other required precautions. If necessary, adopt all required precaution to avoid product immission in environment (e.g., blasting systems, catch basins, ...).

RESPIRATORY PROTECTION:

None required under normal conditions of use. Use approved full face respirator with gas and organic vapour filter cartridge if the recommended exposure limits are exceeded.

HAND AND SKIN PROTECTION:



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Wear suitable gloves in organic substance-proof material (i.e. neoprene, nitrile). Gloves should be changed when they show wear. The kind of gloves and the term of use must be decided from employer with regard to processing and to allow for legislation on personal protection equipment and glove producer's indications. Wear gloves only with clean hands.

Wear suitable protective clothing (for further information, refer to CEN-EN 14605); change it immediately in case of large contamination and wash it before subsequent use.

Practice reasonable personal cleanliness.

EYE PROTECTION:

Chemical goggles and face shield in case of oil splashes.

9. PHYSICAL AND CHEMICAL PROPERTIES

| PROPERTY | VALUE | METHOD |
|------------------|---------------------------------|-----------|
| APPEARANCE | Ambre liquid | -- |
| DENSITY @ 15°C | 1.030 - 1.070 kg/m ³ | |
| WATER SOLUBILITY | Soluble et hygroscopique | |
| BOILING POINT | >260°C | ISO 4925 |
| FLASH POINT | >100°C | ASTM D 93 |

10. STABILITY AND REACTIVITY

STABILITY:

The product is stable under normal conditions of use.

CONDITIONS TO AVOID:

This product must be kept far from heat sources. In any case, avoid exposing product to temperatures above the flash point.

MATERIALS TO AVOID:

Strong oxidizing agents, hard acids and bases.

HAZARDOUS DECOMPOSITION PRODUCTS:

Oxides of carbon and nitrogen.

11. TOXICOLOGICAL INFORMATION

INGESTION:

Unlike to cause harm if accidentally swallowed in small doses, though ingestion of large quantities may cause gastro-intestinal effects.

INHALATION:



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Inhalation of mists and vapours generated at elevated temperatures may cause respiratory irritation.

EYE CONTACT:

Contact may cause slight irritations.

SKIN CONTACT:

Contact may cause slight irritations.

12. ECOLOGICAL INFORMATION

This product has following eco-toxicological characteristics:
LD50 (Leuciscus idus, 96 h, DIN 38412 T.15) = 250-350 mg/l
EC50 (bacteria) > 10 g/l

Given its physical and chemical characteristics, the product is soluble in water, penetrates easily into soil and shows weak tendency to evaporation. Anyway, avoid large spills of product to prevent soil, watercourse and groundwater pollution.

The product is biodegradable (90%, static test).

13. DISPOSAL CONSIDERATIONS

Prevent contamination of soil, drains and surface waters.

Do not discharge in sewers, tunnels or water courses. Dispose in accordance with local or national regulations via authorised person/licensed waste disposal contractor.

The used product is to be considered a special waste to be classified in accordance to Directives 75/442/EC (on wastes) and 91/689/EC (on hazardous waste) and related legislation.

14. TRANSPORT INFORMATION

Not classified as hazardous for transport (ADR/RID, ICAO/IATA, IMDG).

15. REGULATORY INFORMATION

Classification and labelling according to EC regulations:

Not classified as hazardous.

SYMBOL:



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Not applicable.

INDICATIONS OF DANGER:

Not applicable.

CONTAINS:

RISK PHRASES:

Not applicable.

SAFETY PHRASES:

- S 2 Keep out of the reach of children.
- S 24 Avoid contact with skin.
- S 46 If swallowed, seek medical advice immediately and show this container or label.

OTHER INDICATIONS:

None.

OTHER ENFORCEABLE LEGISLATION:

Regulation (EC) No 1907/2006, with all National and European related legislations - concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Directives 89/391/EC, 89/654/EC, 89/655/EC, 89/656/EC, 90/269/EC, 90/270/EC, 90/394/EC, 90/679/EC and all following updates, together with its national realization, about improvement of worker safety and health

Directives 98/24/EC and all following updates, together with its national realization, about protection of worker safety and health against chemical agent risks

Directive 1999/45/EC and all following updates, together with its national realization, about classification, packaging and labelling of dangerous preparations

Directive 2001/59/EC and all following updates, together with its national realization, about classification, packaging and labelling of dangerous substances

Directive 2001/58/EC and all following updates, together with its national realization, about safety data sheets

Directive 2004/73/EC (29th adjustment) and all following updates, together with its national realization, about classification, packaging and labelling of dangerous substances

Directive 1991/156/EC and all following updates, together with national waste legislation

EC directives and national environment protection legislation (air, water and soil)

16. OTHER INFORMATION

Sheet complies with the criteria of EC/91/155, EC/99/45, EC/2001/58, EC/2002/59 and EC/2004/73 Directives and following, as well as with Annex II of REACH.



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This product must not be used in applications other than recommended without first seeking the advice of the Technical Department.

Caption about heading 3, R-phrases:

R 36 Irritating to eyes.

List of abbreviations used:

N.A. Not applicable

N.D. Not available

This product must be stored, handled and used according to correct industrial hygienic practices and in compliance with laws in force.

The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be considered as any guarantee of specific properties.