

# SAFETY DATA SHEET



Castrol Brake Fluid DOT 4

## Section 1. Identification

**GHS product identifier** Castrol Brake Fluid DOT 4  
**Product code** 466630-GB13  
**SDS no.** 466630  
**Relevant identified uses of the substance or mixture and uses advised against**  
**Use of the substance/mixture** Brake fluids.  
For specific application advice see appropriate Technical Data Sheet or consult our company representative.  
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## Section 2. Hazards identification

**Classification of the substance or mixture** REPRODUCTIVE TOXICITY (Unborn child) - Category 2

**GHS label elements**  
**Hazard pictograms**



**Signal word** Warning  
**Hazard statements** H361 - Suspected of damaging the unborn child.  
**Precautionary statements**  
P103 - Read label before use.  
P102 - Keep out of reach of children.  
P101 - If medical advice is needed, have product container or label at hand.  
**Prevention** P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.  
**Response** P308 + P313 - IF exposed or concerned: Get medical attention.  
**Storage** P405 - Store locked up.  
**Disposal** P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.  
**Other hazards which do not result in classification** Defatting to the skin.

## Section 3. Composition/information on ingredients

**Substance/mixture** Mixture  
polyethylene glycol Proprietary performance additives.

## Section 3. Composition/information on ingredients

Chinese name (Traditional)	Concentration	CAS number	Type
2,2'-oxybisethanol	<10	111-46-6	[1]
tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl]orthoborate	≤10	30989-05-0	[1]
2-(2-(2-butoxyethoxy)ethoxy)ethanol	≤10	143-22-6	[1]
Di-isopropanolamine	≤2.9	110-97-4	[1]

  

化學品名稱	濃度	化學文摘社登記號碼(CAS No.)	類型
二乙二醇醚	<10	111-46-6	[1]
2-[2-(2-甲氧基乙氧基)乙氧基]乙醇 硼酸三酯	≤10	30989-05-0	[1]
2-[2-(2-丁氧基乙氧基)乙氧基]乙醇	≤10	143-22-6	[1]
二異丙醇胺	≤2.9	110-97-4	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

### Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Toxic chemical substance
- [4] Additional disclosure due to company policy

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

<b>Inhalation</b>	If inhaled, remove to fresh air. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. Get medical attention.
<b>Ingestion</b>	Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Get medical attention.
<b>Skin contact</b>	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.
<b>Eye contact</b>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.
<b>Protection of first-aiders</b>	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

### Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

### Indication of immediate medical attention and special treatment needed, if necessary

<b>Specific treatments</b>	No specific treatment.
<b>Notes to physician</b>	Treatment should in general be symptomatic and directed to relieving any effects. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

## Section 5. Firefighting measures

### Extinguishing media

<b>Suitable extinguishing media</b>	In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray.
<b>Unsuitable extinguishing media</b>	Do not use water jet.
<b>Specific hazards arising from the chemical</b>	In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous thermal decomposition products</b>	Combustion products may include the following: carbon oxides (CO, CO <sub>2</sub> ) (carbon monoxide, carbon dioxide) nitrogen oxides (NO, NO <sub>2</sub> etc.)

## Section 5. Firefighting measures

### Special protective actions for fire-fighters

No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

### Special protective equipment for fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.

### Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and material for containment and cleaning up

#### Small spill

Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

#### Large spill

Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Contaminated absorbent material may pose the same hazard as the spilt product. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

### Precautions for safe handling

#### Protective measures

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

#### Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

### Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. DO NOT ADD NITRITES TO THIS FLUID.

### Not suitable

Prolonged exposure to elevated temperature

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

None.

#### Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

## Section 8. Exposure controls/personal protection

### Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.

Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

### Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye protection

Safety glasses with side shields.

#### Skin protection

##### Hand protection

Wear protective gloves if prolonged or repeated contact is likely. Wear chemical resistant gloves. Recommended: Butyl gloves. Neoprene gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

##### Body protection

Use of protective clothing is good industrial practice.

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

##### Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

#### Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

## Section 9. Physical and chemical properties

### Appearance

#### Physical state

Liquid.

#### Colour

Yellow.

#### Odour

Characteristic.

#### Odour threshold

Not available.

#### pH

9 to 10

#### Melting point

-65°C (-85°F)

#### Boiling point

165°C (329°F)

## Section 9. Physical and chemical properties

<b>Drop Point</b>	Not available.
<b>Flash point</b>	Closed cup: 143°C (289.4°F)
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.
	Not applicable. Based on - Physical state
<b>Lower and upper explosive (flammable) limits</b>	Not available.
<b>Vapour pressure</b>	<0.13 kPa (<1 mm Hg) [20°C (68°F)]
<b>Vapour density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Density</b>	>1000 kg/m <sup>3</sup> (>1 g/cm <sup>3</sup> ) at 20°C
<b>Solubility</b>	Miscible in water.
<b>Partition coefficient: n-octanol/water</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Kinematic: 2 mm <sup>2</sup> /s (2 cSt) at 20°C

## Section 10. Stability and reactivity

<b>Reactivity</b>	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
<b>Chemical stability</b>	The product is stable.
<b>Possibility of hazardous reactions</b>	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.
<b>Conditions to avoid</b>	Avoid all possible sources of ignition (spark or flame).
<b>Incompatible materials</b>	Reactive or incompatible with the following materials: oxidising materials.
<b>Hazardous decomposition products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Aspiration hazard

Not available.

**Information on likely routes of exposure** Routes of entry anticipated: Dermal, Inhalation.

### Potential acute health effects

#### **Eye contact**

No known significant effects or critical hazards.

#### **Inhalation**

Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

#### **Skin contact**

Defatting to the skin. May cause skin dryness and irritation.

#### **Ingestion**

Diethylene glycol: Ingestion of diethylene glycol can cause metabolic acidosis, kidney damage, central nervous system depression, and convulsions. The estimated human lethal dose is approximately 100 ml (3.4 ounces for an adult).

### Symptoms related to the physical, chemical and toxicological characteristics

#### **Eye contact**

No specific data.

#### **Inhalation**

May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs.

#### **Skin contact**

Adverse symptoms may include the following:  
irritation  
dryness  
cracking  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations

## Section 11. Toxicological information

**Ingestion** Adverse symptoms may include the following:  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Eye contact** Potential risk of transient stinging or redness if accidental eye contact occurs.

**Skin contact** Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

**Ingestion** Ingestion of large quantities may cause nausea and diarrhoea.

### Potential chronic health effects

**General** May cause damage to organs through prolonged or repeated exposure. (kidney)

**Carcinogenicity** No known significant effects or critical hazards.

**Mutagenicity** No known significant effects or critical hazards.

**Teratogenicity** Suspected of damaging the unborn child.

**Developmental effects** Birth defects and decreased fetal weight have been observed in laboratory animals fed diethylene glycol in large amounts repeatedly during pregnancy.

**Fertility effects** No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	5681.82 mg/kg

## Section 12. Ecological information

**Environmental effects** No known significant effects or critical hazards.

### Persistence and degradability

Expected to be biodegradable.

### Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** Not available.

**Mobility** Spillages may penetrate the soil causing ground water contamination.

**Other ecological information** Miscible in water.

## Section 13. Disposal considerations

**Disposal methods** The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	IMDG	IATA
UN number	Not regulated.	Not regulated.
UN proper shipping name	-	-
Transport hazard class(es)	-	-
Packing group	-	-
Environmental hazards	No.	No.
Additional information	-	-

Special precautions for user Not available.

## Section 15. Regulatory information

OSHA Article 29 None of the components are listed.

OSHA Article 30 None of the components are listed.

### Montreal Protocol

Ingredient name	Status
Not listed.	

### Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not listed.		

### Rotterdam Convention on Prior Informed Consent (PIC)

Ingredient name	Status
Not listed.	

### Regulation according to other foreign laws

**REACH Status** The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.

**Australia inventory (AICS)** All components are listed or exempted.

**Canada inventory status** At least one component is not listed in DSL but all such components are listed in NDSL.

**China inventory (IECSC)** All components are listed or exempted.

**Japan inventory (ENCS)** All components are listed or exempted.

**Philippines inventory (PICCS)** All components are listed or exempted.

**Korea inventory (KECI)** At least one component is not listed.

**Taiwan Chemical Substances Inventory (TCSI)** All components are listed or exempted.

**United States inventory (TSCA 8b)**

Not determined.

## Section 16. Other information

### Procedure used to derive the classification

Classification	Justification
REPRODUCTIVE TOXICITY (Unborn child) - Category 2	Calculation method

**References** Not available.

**Organisation that prepared the MSDS** BP

### History

**Date of printing** 4/28/2021

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**Version** 8.09

**Prepared by** Product Stewardship

### Key to abbreviations

ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]  
UN = United Nations  
Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

 Indicates information that has changed from previously issued version.

### Notice to reader

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