



## MATERIAL SAFETY DATA SHEET

### 1. IDENTIFICATION

#### 1.1 Product Name

Brembo Racing HTC64T High Boiling Point Racing Brake Fluid – 320 °C. DOT 4

#### 1.2 Intended use

As a hydraulic fluid in automotive brake and clutch systems.

#### 1.3 Supplier:

Brembo S.p.A, Via Brembo 25 24035 Curno (BG) Italy , tel: +39 035 605 111

### 2 HAZARDS IDENTIFICATION

#### 2.1 Classification

This product is classified as “Irritant” R36 “Irritating to eyes”. R52/53: Harmful to aquatic organisms and may cause long term adverse effects in the aquatic environment.

#### 2.2 Physical Hazards

Product is not classified as flammable but will burn.

#### 2.3 Health Hazards

Irritating to eyes. Mildly irritating to skin. When ingested it may be absorbed and cause renal damage at high dosage.

#### 2.4 Environmental Hazards

May be harmful to aquatic organisms and could cause long term adverse effects in the aquatic environment.

### 3 COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 General

Blend of polyglycol ethers and glycol ether borate esters with added corrosion and oxidation inhibitors.

#### 3.2 Hazardous Ingredients

Ingredient Concentration % Classification Risk Phrases

Complex Amine Mixture 1 – 4 C/N/Xn R35 R50/53 R22

See Section 16 for explanation of the risk phrases

### 4. FIRST AID MEASURES

#### 4.1 Inhalation

Remove to fresh air. If recovery is not rapid, seek medical attention.

#### 4.2 Skin Contact

Remove contaminated clothing. Wash affected skin with soap and water. If irritation persists seek medical attention.

#### 4.3 Eye Contact

Flush eye with water for at least 10 minutes. If irritation persists seek medical attention.

#### 4.4 Ingestion

Obtain medical advice immediately. If patient is fully conscious, wash out mouth with water and give plenty of water to drink. Induce vomiting only under medical supervision.

#### 4.5 Note to Physicians

Medical personnel seeking to administer first aid are referred to the services of the Poisons Information Service who can advise in such instances. There is no specific antidote and treatment of over exposure should be directed at control of symptoms and the patient’s clinical condition.

### 5. FIRE FIGHTING MEASURES

#### 5.1 Suitable Extinguishing Media

Alcohol resistant foam, dry powder or water (fog or fine spray).

#### 5.2 Unsuitable Extinguishing Media

Water jets (although these may be used to cool adjacent containers).

### **5.3 Exposure Hazards**

No special risk – combustion products may contain harmful or irritant fumes.

### **5.4 Special Protective Equipment**

In extreme conditions self-contained breathing apparatus should be worn.

## **6. ACCIDENTAL RELEASE MEASURES**

### **6.1 Personal Precautions**

Avoid contact with eyes, skin, and clothing. When cleaning up large spillages, suitable protective clothing should be worn including eye protection and impervious gloves.

### **6.2 Environmental Precaution**

Prevent from entering drains, ditches or rivers. If this happens inform relevant authorities. Prevent contamination of soil.

### **6.3 Methods for Cleaning Up**

Contain spillage using sand or earth. Remove all material to a suitable container for subsequent disposal. Label Salvage Container appropriately. Flush contaminated area with plenty of water.

## **7. HANDLING AND STORAGE**

### **7.1 Storage**

Suitable bulk storage vessels are mild/stainless steel tanks fitted with a dry air breathing system or tight head steel drums. Do not store in lined tanks or drums. Brake fluid absorbs water from the atmosphere - always keep containers tightly closed. Avoid contamination with any other substances and in particular with mineral oils which are incompatible.

### **7.2 Handling**

No specific handling precautions are necessary.

### **7.3 Specific Use**

Users are referred to the Specification SAE J1707 "Service Maintenance of Brake Fluids". Racing brake fluid should not be used in high magnesium alloy components and should not be mixed with other brake fluids or its outstanding performance may be compromised.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **8.1 Exposure Controls**

No official TLV/OEL figures available for the entire preparation. However, 8 h TWA limits of 100 mg/m<sup>3</sup> vapour or 10 mg/m<sup>3</sup> particulate should be adhered to. Due to the low vapour pressure of the preparation, vapour is not generally a problem at ambient temperature. Handling equipment should minimise the formation of mists.

### **8.2 Respiratory Protection**

No specific precautions at ambient temperature. If fluid is being heated or atomised, use suitable engineering control measures.

### **8.3 Hand Protection**

Wear suitable impervious gloves to avoid prolonged or repeated contact. Polyethylene, butyl rubber and PVC are suitable materials.

### **8.4 Eye Protection**

Wear close-fitting goggles where there is a risk of splashing. Eye baths should be provided at locations where accidental exposure may occur.

### **8.5 Skin Protection**

Where significant exposure is possible wear impervious body covering. It is recommended that showers are provided at locations where accidental exposure may occur.

### **8.6 Environmental Exposure Controls**

No special measures required.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

Test method

9.1 Appearance Clear liquid - colourless to amber (although Visual some grades of brake fluid may be dyed.)

9.2 Odour Bland

9.3 pH 7.0 to 8.0 SAE J 1703

9.4 Boiling point > 300 °C. SAE J 1703

9.5 Melting point < -50 °C. SAE J 1703

- 9.6 Flash point > 100 °C. IP 35
- 9.7 Auto ignition temp. > 300 °C. ASTM D 286
- 9.8 Flammability limits in air Not established
- 9.9 Density @ 20°C 1.060 – 1.090 g/ml DIN 51757
- 9.10 Solubility In water: Approx 97%
- In ethanol: miscible in any ratio
- 9.11 Partition Coefficient < 2.0 OECD 117  
n-Octanol/Water
- 9.12 Viscosity @ 20°C Approx. 5-10 cSt ASTM D 445
- 9.13 Vapour pressure@ 20°C < 2 milibars Reid
- 9.14 Vapour Density Not established
- 9.15 Evaporation Rate Negligible

## **10. STABILITY AND REACTIVITY**

### **10.1 Conditions to Avoid**

Product is stable under normal conditions. Glycol Ethers can form peroxide on storage – do not distil to dryness.

### **10.2 Materials to Avoid**

Strong oxidising agents. For user safety, brake fluid should never be contaminated with any other substance.

### **10.3 Hazardous Decomposition Products**

None known.

## **11. TOXICOLOGICAL INFORMATION (comments may be based on analogy with similar products).**

### **11.1 Eye Contact**

Product has an irritating effect on the eye (OECD Test Method 405).

### **11.2 Skin Contact**

Not classified as irritant (Test Method OECD 404) although some sensitive individuals may be affected.

Repeated contact may de-fat the skin and cause dermatitis. Product does not contain any known sensitisers.

Acute percutaneous toxicity is low LD50 (sk) Rat = > 2000 mg/kg.

### **11.3 Ingestion**

Product is of relatively low acute oral toxicity – however, if any significant amount is ingested there is a risk of renal damage which in extreme cases could lead to kidney failure, coma and death.

LD50 (oral) Rat = > 5000 mg/kg. Sparse experience indicates lethal dose in man could be considerably less.

### **11.4 Inhalation**

Unlikely to be hazardous by inhalation at ambient due to low vapour pressure.

If product is inhaled at elevated temperatures or as an aerosol it may irritate respiratory tract and may cause systemic effects similar to ingestion (see above).

### **11.5 Chronic or Long Term Toxicity**

General – There are no reports of long term adverse effects in man.

Carcinogenicity Not known to be carcinogenic.

Mutagenicity Not known to be mutagenic.

Reproductive Toxicity

Major ingredients have not been shown to cause significant fertility or development problems at levels which are not themselves toxic to the animal concerned.

## **12. ECOLOGICAL INFORMATION (Comments may be based on analogy with similar products)**

**12.1 Ecotoxicity** – Product is of low to medium ecotoxicity.

Fish 96h LC50 = > 10 - 100 mg/l (Oncorhynchus Mykiss)

Daphnia 48h EC50 = Not Determined.

Algae 72h EC50 = Not Determined.

### **12.2 Mobility**

Soluble in water and will partition to aqueous phase. Volatilisation from water to air not expected. Mobile in soil until degraded.

### **12.3 Persistence/Degradability**

Product is inherently biodegradable and is expected to be readily biodegradable.

If admitted into adapted biological water treatment plants, no significant adverse effects on the degrading action of the live sludge are expected.

### **12.4 Bio accumulative Potential**

Not expected to be generally bio accumulative - overall Log POW < 2.0 although some minor ingredients > 3.0.

### **13. DISPOSAL CONSIDERATIONS**

#### **13.1 Disposal Dangers**

Not significant. As for spillages - avoid liquid entering drains, rivers etc.

#### **13.2 Disposal Methods**

Controlled incineration or recycling is recommended.

#### **13.3 Regulations**

Dispose of in accordance with local and national regulations. In the E.U. used brake fluids are classified as Hazardous Waste (91/689/EEC). EWC number: 16.01.13.

### **14. TRANSPORT INFORMATION**

14.1 UN No /Class None

14.2 ADR/RID Not classified

14.3 IMO/IMDG Not classified as hazardous

14.4 Marine Pollutant No

14.5 IATA/IACO Class Not classified

### **15. REGULATORY INFORMATION**

#### **15.1 E.U. Classification** Xi – Irritant

Risk Phrases R36 - Irritating to eyes.

R52/53 – Harmful to aquatic organisms and may cause long term adverse effects in the aquatic environment

Safety Phrases S2 - Keep out of reach of children.

S26 (Modified) - In case of contact with eyes, rinse immediately with water for 10 minutes. If irritation persists seek medical advice.

S46 - If swallowed seek medical advice immediately and show this container or label.

S29 – Do not empty into drains.

#### **15.2 Restrictions on use or Exposure**

To be in accord with local and national regulations. In the U.K. this would include the HSWA and COSHH.

### **16. OTHER INFORMATION**

#### **16.1 Risk (R) Phrases**

R22 –Harmful if swallowed.

R35 –Causes Severe Burns.

R52/53 - Harmful to aquatic organisms and may cause long term adverse effects in the aquatic environment.

#### **16.2 Revisions**

Changes to this edition of the MSDS are indicated by a bar in the margin.

#### **16.3 Legal Disclaimer**

The information contained herein is based on the present knowledge and experience of the manufacturer.

It in no way constitutes the users own assessment of work place risk as required by other Health and Safety legislation.

The manufacturer does not, by supplying this information, guarantee or warrant any specific properties or qualities of goods supplied. It is the responsibility of the purchaser to determine whether the goods ordered are fit for any purpose for which they may be required.

This information is provided subject to the manufacturer's Conditions of Sale.