



Material Safety Data Sheet

PRF 660 Brake Fluid

Date 02/04/10
Issue 1

1. Substance/ Preparation Identification & Company

Product Name	PRF 660 Brake Fluid (CP4660-20)	Intended Use	As a hydraulic fluid in automotive brake and clutch systems.
Company	AP Racing Wheler Road Coventry CV3 4LB	Description	Competition brake fluid
		Telephone	+44 (0) 24 76 639595
		Fax	+44 (0) 24 76 639559
		Email	sales@apracings.co.uk

2. Hazards Identification

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	Health Hazards	Irritating to eyes. Mildly irritating to skin. When ingested it may be absorbed and cause renal damage at high dosage
Physical Hazards	Product is not classified as flammable but will burn	Environmental Hazards	May be harmful to aquatic organisms and could cause long term adverse effects in the aquatic environment

3. Composition/ Information on Ingredients

General	Blend of polyglycol ethers and glycol ether borate esters with added corrosion and oxidation inhibitors.				
Hazardous Ingredients	Conc. %	CAS	EINECS	Hazard Classification	Risk Phrases
Complex Amine Mixture	1-4			C/N/Xn	R35 R50/53 R22

4. First Aid Measures

Skin Contact	Remove contaminated clothing. Wash affected skin with soap and water. If irritation persists seek medical attention.
Eye Contact	Flush eye with water for at least 10 minutes. If irritation persists seek medical attention.
Inhalation	Remove to fresh air. If recovery is not rapid, seek medical attention.
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.
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

Extinguishing Media	Alcohol resistant foam, dry powder or water (fog or fine spray)
Fire Hazards	No special risk – combustion products may contain harmful or irritant fumes
Protective Equipment	In extreme conditions self-contained breathing apparatus should be worn

6. Accidental Release Measures



Material Safety Data Sheet

PRF 660 Brake Fluid

Date 02/04/10
Issue 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
Environmental Precautions	Prevent from entering drains, ditches or rivers. If this occurs inform relevant authorities. Prevent contamination of soil
Clean Up Methods	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 & Storage

Handling Storage	No specific handling precautions are necessary. 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.
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

Exposure Limits	No official TLV/OEL figures available for the entire preparation. However, 8 h TWA limits of 100 mg/m ³ vapour or 10 mg/m ³ 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.
Engineering Measures	
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.
Hand Protection	Wear suitable impervious gloves to avoid prolonged or repeated contact. Polyethylene, butyl rubber and PVC are suitable materials.
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.
Respiratory Protection	No specific precautions at ambient temperature. If fluid is being heated or atomised, use suitable engineering control measures.
Other Protective Equipment	
Environmental Exposure Controls	No special measures required.

9. Physical & Chemical Properties

Description	Blend of polyglycol ethers and glycol ether borate esters with added corrosion and oxidation inhibitors.	
Colour	Clear liquid colourless to amber (although some grades of brake fluid may be dyed.)	Test Ref Visual
Odour	Bland	
pH	7.0 to 8.0	SAE J 1703



Material Safety Data Sheet

PRF 660 Brake Fluid

Date 02/04/10
Issue 1

Boiling Point	> 300 °C.	SAE J 1703
Flash Point	> 100 °C.	IP 35
Auto Ignition	> 300 °C.	ASTM D 286
Temperature		
Flammability Limits	In Air: Not established	
Density @ 20°C	1.060 – 1.090 g/ml	DIN 51757
Solubility	In water: Approx 97%	
	In ethanol: miscible in any ratio	
Melting point	< -50 °C.	SAE J 1703
Partition Coefficient	< 2.0	OECD 117
n-Octanol/Water		
Viscosity @ 20°C	Approx. 5-10 cSt	ASTM D 445
Vapour pressure@ 20°C	< 2 milibars	Reid
Vapour Density	Not established	
Evaporation Rate	Negligible	

10. Stability & Reactivity

Conditions to Avoid	Product is stable under normal conditions. Glycol Ethers can form peroxide on storage – do not distil to dryness.
Materials to Avoid	Strong oxidising agents. For user safety, brake fluid should never be contaminated with any other substance.
Hazardous Decomposition Products	None known.

11. Toxicological Information (Comments may be based on analogy with similar products)

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 is not expected to cause sensitisation. Acute percutaneous toxicity is expected to be low LD50 (sk) Rat = > 2000 mg/kg.
Eye Contact	Product is expected to have an irritating effect on the eye (OECD Test Method 405).
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 below).
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.
Chronic 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)

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



Material Safety Data Sheet

PRF 660 Brake Fluid

Date 02/04/10
Issue 1

**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.

**Bio
Accumulative
Potential**

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

13. Disposal Considerations

**Disposal
Dangers**

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

**Disposal
Measures**

Controlled incineration or recycling is recommended.

Regulations

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

14. Transport Information

UN No /Class

None

ADR/RID

Not classified

IMO/IMDG

Not classified as hazardous

Marine Pollutant

No

IATA/IACO

Not classified

Class

15. Regulatory Information

E.U.

Xi – Irritant

Classification

Risk Phrases

R36 - Irritating to eyes.

R52/53 – Harmful to aquatic organisms and may cause long term adverse affects 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.

**Restrictions on
Use or Exposure**

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

16. Other Information

Risk (R) Phrases

R22 –Harmful if swallowed.

R35 –Causes Severe Burns.

R50/53 – Very Toxic to aquatic organisms and may cause long term adverse effects in the aquatic environment.

Legal Disclaimer

The information contained herein is based on the present knowledge held by AP Racing and does not constitute the users own assessment of work place risk and substance use as required by other Health and Safety legislation.