Brake and Clutch Fluid DOT 4

High performance brake and clutch fluid

Product Data Sheet

Product description

Brake and Clutch Fluid DOT 4 is a high performance non-petroleum automotive brake fluid designed for conventional hydraulic brake and clutch systems.

Brake and Clutch Fluid DOT 4 is formulated for use under severe operating conditions or where DOT 4 fluids are recommended. Brake and Clutch Fluid DOT 4 combines a complex combination of Polyglycols, Polyglycol Ethers and Glycol Ether Borate Esters, blended with inhibitors designed to prevent corrosion, oxidation and to control seal swell characteristics.

Customer benefits

- Higher and maintained fluid boiling point in service promotes lower vapour formation and greater braking performance than DOT 3
- Designed to aid vapour lock prevention, offering greater braking safety margin than lower specification fluids
- Formulated for use in a wide range of conventional systems, reducing inventories and costs
- Buffered formulation offers protection to cast iron and steel, helping prevent system damage and loss of performance
- Advanced inhibitor technology offers corrosion protection to aluminium, brass, copper, zinc and tin components
- Seal swell and lubricity performance help minimise fluid leakage through seal shrinkage
- Thermal and oxidation stability assist in preventing fluid degradation and retaining key performance features across fluid lifetime

Applications

- Brake and Clutch Fluid DOT 4 meets the recognised standards for clutch and brake fluids as demanded by leading motor vehicle manufacturers. Additionally, it complies with the US Federal Motor Vehicle Services Specification (FMVSS) No. 116 DOT 4, DOT 3, SAE J 1703 and ISO 4925 specifications.

Product highlights:

- Higher and maintained fluid boiling point
- Aids vapour lock prevention
- For use in a wide range of conventional systems
- Advanced corrosion inhibitor technology
- Offers long service life
- Selected specification standards include:
  - FMVSS
  - Ford
  - ISO
  - JIS
  - NATO
  - SAE

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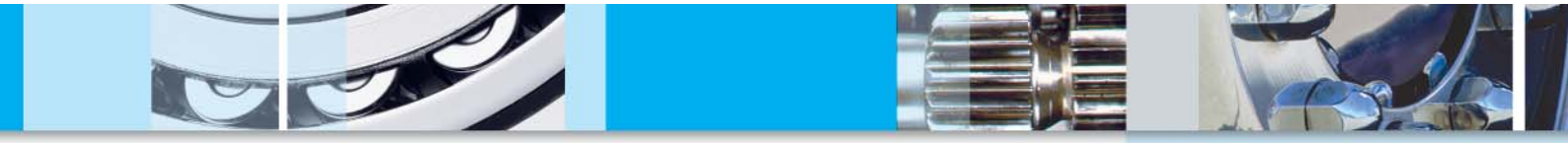
Our Family of Brands



It also meets the requirements of the earlier specifications: SAE 70R 1 and 3, SAE J70 C, SAE J 1703 A to F and SAE J 1703 Jan 80, Nov 83 and Oct 85

- Hydraulically operated motor vehicle braking systems (drum and disc types) for which a DOT 4 or SAE J1704 fluid is specified
- Make-up or service fill of braking systems requiring DOT 3 or SAE J1703 fluids
- Vehicles with anti-lock (ABS) braking systems
- Hydraulic clutch systems requiring conventional fluids
- Passenger cars, commercial road transport, off-highway vehicles, agricultural tractors and motorcycles

- Brake and Clutch Fluid DOT 4 is compatible with other brands of DOT 4/DOT 3 brake fluid
- Brake and Clutch Fluid DOT 4 should not to be used in systems designed for mineral oil based fluids (LHM), for example certain Citroën models, or where Silicone DOT 5 fluids are recommended

Approvals and performance

Performance

• FMVSS	116 DOT 3	Meets requirements
• FMVSS	116 DOT 4	Meets requirements
• Ford	ESD-M6C57-A	Meets requirements
• Ford	ESD-M6C9102-A	Meets requirements
• Ford	ESD-M6C9103-A	Meets requirements
• ISO	4925	Meets requirements
• JIS	K2233 TYPE 3	Meets requirements
• JIS	K2233 TYPE 4	Meets requirements
• NATO	H-542 (OX-8)	Meets requirements
• SAE	J1703	Meets requirements
• SAE	J1704	Meets requirements

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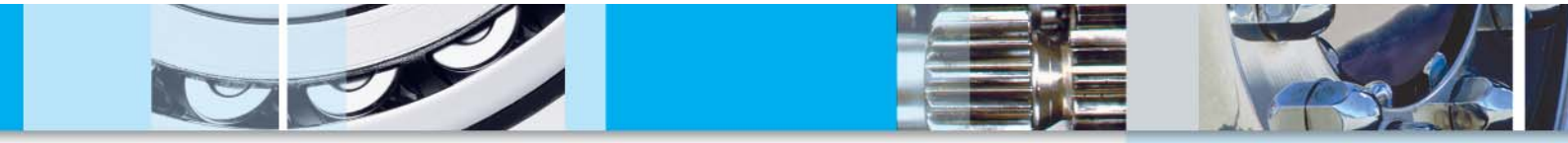

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Typical test data

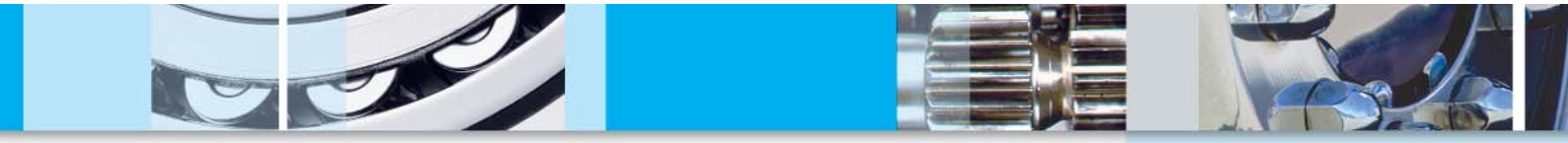
BRAKE AND CLUTCH FLUID DOT 4 TEST	TEST METHODS	RESULTS
Product Code		510663.1
Colour	FMVSS 116 (13)	Amber
Equilibrium Reflux Boiling Point, °C	FMVSS 116 (1)	251
Wet Equilibrium Reflux Boiling Point, °C	FMVSS 116 (2)	160
Viscosity, Kinematic, -40°C, mm^2/s	FMVSS 116 (3)	1296
Viscosity, Kinematic, 100°C, mm^2/s	FMVSS 116 (3)	2.2
pH value	FMVSS 116 (4)	8.3

Product maintenance and handling

Brake fluids absorb moisture from the air. This lowers the boiling point of the fluid and reduces the margin of protection against "vapour lock", a phenomenon which arises from the formation of vapour bubbles in the brake system and causes spongy pedal action or complete loss of braking effectiveness. Conditions conducive to vapour lock include frequent braking during long descents, towing heavy loads or binding brakes.

In order to minimize the amount of moisture absorbed, it is important that containers of brake fluid be kept tightly sealed and stored in a clean, dry location. Small containers should be used immediately after opening and then disposed of, along with any remaining contents, in accordance with local regulations.

In service, brake fluids slowly absorb moisture, both through the rubber brake hoses and also via the reservoir vent. For this reason, most vehicle manufacturers recommend regular changes of brake fluid at intervals varying from 12 to 36 months. Unless the vehicle manufacturer recommends otherwise, Caltex recommends that brake fluid is changed at 24-monthly intervals in order to avoid the danger of vapour lock outlined above.



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Always change brake fluid in accordance with the vehicle manufacturer's recommendations.

When changing brake fluid, it is critical that no contamination of the fluid occurs. Contact with even small quantities of dirt, solvents, or particularly petroleum based products (mineral oils, fuels, greases, etc.), may result in complete brake failure or costly repairs, while contamination with moisture can cause vapour lock in service. Absolute cleanliness is essential to avoid these problems.

Under no circumstances should Brake and Clutch Fluid DOT 4 be mixed with any petroleum product, such as engine oil or hydraulic fluid. The use of brake fluid contaminated with mineral oil damages brake system seals which are specifically designed to be compatible with non-petroleum brake fluids, leading to leakage of the brake fluid and the compromise of brake system performance.

Brake fluid can damage vehicle paintwork, and it should be washed off with water immediately if it comes into contact.

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