Chevron Havoline
雪佛龙 金富力

Automotive Brake & Clutch Fluid

Brake and Clutch Fluid DOT 4

Customer Benefits

Maintains braking performance longer
Higher boiling point, and the ability to retain boiling point in service, minimizes vapor formation at high temperatures, enabling braking performance to be maintained in service for longer than DOT 3 types.

Inventory savings
Widespread suitability for different motor vehicles may provide inventory benefits. In addition, vehicle manufacturers are increasingly specifying this level of performance.

Protects metal surfaces
Buffered formulation provides protection from acidic oxidation products for cast iron and steel components by maintaining the pH of the fluid in the alkaline range. Advanced technology inhibitors protect other metals such as aluminum, brass, copper, zinc and tin from corrosion by forming a protective layer on the surface.

Minimizes leakage and loss of pressure
Correct seal swell and lubricity characteristics minimize leakage through seal shrinkage and component wear caused by excessive seal swelling and/or inadequate lubrication of moving parts.

Enhanced performance during service life
High thermal and oxidation stability resists fluid degradation and formation of harmful deposits, enhancing the retention of key performance features over the full life of the fluid.

APPLICATIONS

- All hydraulically operated motor vehicle braking systems (drum and disc types) for which a DOT 4 or SAE J1704 fluid is specified. This may include:
  - Vehicles with anti-lock (ABS) braking systems
  - Hydraulic clutch systems requiring conventional fluids
  - Passenger cars, commercial road transport, and motorcycles
- Make-up or service fill of braking systems requiring SAE J1703 fluids
- Make-up or service fill of braking systems requiring DOT 3 fluids, unless the OEM specifically recommends against the use of DOT 4 fluids (e.g. certain Toyota models).

For vehicles operating in extreme service conditions, or where a DOT 5.1 fluid is specified, Caltex Brake and Clutch Fluid DOT 5.1 is recommended.

Not to be used in systems designed for mineral oil based fluids (LHM), e.g., certain Citroen models and many off-highway vehicles and tractors, or where Silicone -type DOT 5 fluids are recommended.

Product Features

Brake and Clutch Fluid DOT 4 is an advanced, non-petroleum automotive brake fluid designed for use in conventional hydraulic brake and clutch systems, particularly in severe service conditions or where DOT 4 fluids are recommended.

Brake and Clutch Fluid DOT 4 provides an additional safety margin against “vapor lock” compared with brake fluids meeting less stringent specification requirements.

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Typical key properties

Brake and Clutch Fluid DOT 4	
FMVSS Grade	DOT 4
Product Code	513502
Equilibrium Reflux Boiling Pt., ˚C	239
pH	8.5
Viscosity	
mm^2/s @ -40˚C mm^2/s @ 100˚C	1310 2.24
Wet Equilibrium Reflux Boiling Pt., ˚C	159

1803

PERFORMANCE STANDARDS

Brake and Clutch Fluid DOT 4 meets the requirements of the following specifications:

- U.S. Federal Motor Vehicle Safety Standard FMVSS No.116 DOT 4 and DOT 3
- SAE J1704 and SAE J1703
- ISO 4925 (Classes 3 & 4)
- JIS K2233-95 (Types 3 & 4)
- NATO specification H-542 (OX-8)

ENVIRONMENT, HEALTH and SAFETY

Information is available on this product in the Chemical Safety Data Sheet (SDS) and Customer Safety Guide. Customers are encouraged to review this information, follow precautions and comply with laws and regulations concerning product use and disposal. To obtain a SDS for this product, visit www.chevronhavoline.cn.

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Service considerations

- Conventional brake fluids absorb moisture from the air. This lowers the boiling point of the fluid and reduces the margin of protection against “vapor lock”, a phenomenon which arises from the formation of vapor bubbles in the brake system and causes spongy pedal action or complete loss of braking effectiveness. Conditions conducive to vapor 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 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, Chevron recommends that brake fluid is changed at 24 monthly intervals in order to avoid the danger of vapor lock outlined above.
- 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 vapor lock in service. Absolute cleanliness is essential to avoid these problems.
- Under no circumstances should Chevron 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.
- Chevron Brake and Clutch Fluid DOT 4 is compatible with other brands of DOT 4/DOT 3 brake fluid, and may be used as make-up or service refill wherever DOT 4 or DOT 3 brake fluid is recommended, unless the OEM specifically recommends against the use of DOT 4 fluids. Note that Toyota recommends against the use of DOT 4 fluids in some of their current vehicle models, with a requirement for DOT 3 fluids instead. Chevron recommends that customers follow OEM guidelines.

This bulletin was prepared in good faith from the best information available at the time of issue. While the values and characteristics are considered representative, some variation, not affecting performance, can be expected. It is the responsibility of the user to ensure that the products are used in the applications for which they are intended.

Chevron Lubricants.

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