BB00.40-P-0330-01A	General brake fluid	These regulations apply to Mercedes-Benz and smart.	

Model all

General

Brake fluid has to fulfill hydraulic functions in the brake system and in the hydraulic clutch operation. These tasks can be only fulfilled, in particular due to the high heat development during the brake application, by brake fluids that satisfy all the current technical requirements in their various properties (viscosity/temperature response, boiling point, corrosion protection, oxidation stability, etc.).

The most important properties required of a brake fluid are:

- High boiling point to prevent the brake fluid from forming vapor locks at high temperatures. Vapor locks reduce the working pressure and thus the braking effect and can result in failure of the brakes.
- The boiling point should remain as constant as possible over the service life and not drop under atmospheric influences or operating conditions (pressure, temperature), i.e. a "wet boiling point" that is as high as possible is required.
- Low compressibility, in particular at relatively high temperatures.
- The low-temperature property of the fluid must also permit operation at -40 °C, i.e. the key factor is that the viscosity must not become too high when cold.
- Compatibility with the materials used in brake components and clutch operating systems, for example sealing boots or other sealing materials (elastomers) in the brake components may only swell in a controlled manner, shrinkage must be ruled out.
- Adequate corrosion protection properties for all metals in the brake system.

The brake fluids approved for all MB vehicle models are listed on Sheet 331.0. These brake fluids correspond to the requirements of the US safety regulations FMVSS 116, DOT 4, in addition to our requirements. The approved "DOT 4 plus" brake fluids (internal designation) are more advanced DOT 4 brake fluids with a higher wet boiling point, standard change interval: 2 years. To maintain this service life without any problems, we urgently advise the use of the approved products as per Sheet 331.0. During the warranty phase this is a requirement if any customer claims are to be recognized.

The brake fluid "DOT 4 type 200" listed on Sheet 331.1 is approved for special applications in the UNIMOG field with even greater thermal demands. In this application, a brake fluid change interval of 1 year must be observed.

Handling brake fluid

The brake fluid based on polyhydric alcohols in oligomer or polymer form and/or esters is hygroscopic and therefore absorbs moisture from the air. Water however, lowers the boiling point of the brake fluid, thereby increasing the risk of vapor lock. Therefore care must be taken to ensure that the brake fluid is always kept in enclosed vessels. Brake fluid in an open vessel can absorb so much moisture in only a few hours that it is no longer usable.

Because the brake fluid also absorbs moisture through the ventilation bore on the expansion reservoir, through the wheel brake cylinder and through the brake hoses, the brake fluid has to be changed at regular intervals for safety reasons. When making this change it should be ensured that the old fluid is also drained from the clutch system.

Used brake fluid must not be reused for the reasons given above.

Brake fluid is amber in color and is therefore easily confused with mineral oil products.

Therefore, brake fluids should only ever be taken from original containers and stored separate from mineral oils and other fluids.

With maintenance operations and repairs to brake components, it must be ensured that no fuel, mineral oil, lubricating grease or the like gets into the brake system. Hydrocarbon-based substances will lead to swelling of the brake and clutch operation system elastomers, and cause - even in very small concentrations - impairments, which can in turn result in total failure of the systems.

Only new brake fluid may be used as a flushing and cleaning agent for the cylinders, lines and the expansion reservoir of the hydraulic brake system.

Before handling brake fluid, the hands must be cleaned to remove any oil and grease, to prevent any entry of hydrocarbons into the brake system.

Brake fluid has a corrosive effect on lacquers and paints. If brake fluid is spilt or splashed, it must be rinsed off immediately with plenty of water (do not rub off).

Disposal of brake fluid

When disposing of brake fluid, the relevant national regulations must be observed. It is advisable to strive for disposal in the form of economic goods; the requirements for this are

- Strict separation of the used brake fluid from other substances.
- Availability of a disposal channel, which justifies the classification as economic goods, i.e. a proper alternate usage must be ensured.

Should this procedure not be possible, used brake fluid must be disposed of together with e.g. paint leftovers, solvents, etc. Adding to the used oil must always be avoided because it results in difficulties if the used oil is to be reconditioned; in some countries this is prohibited by legislation.