



MILLERS OILS

Motorsport

Millers Racing Brake Fluid 300 plus

Millers Racing Brake Fluid 300 plus

Meets or exceeds the performance criteria of all commercially available racing brake fluids.

Exceptionally high dry boiling point, a typical figure of at least 310 centigrade can be expected, providing exceptional resistance to vapour locking.

Excellent compressibility for improved pedal feel under the most arduous braking conditions.

Suitable for disc and drum installations.

Mixes with all DOT 4 and DOT 5.1 brake fluids, but performance may be reduced.

Tips

- Suggested change interval should not exceed 12 months otherwise reduced performance can be expected.
- 310 centigrade is 590 Fahrenheit. Don't be fooled; please remember this when selecting your racing brake fluid.
- Do not mix silicone and PAG brake fluids



Exceptional
braking performance

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Brake Fluid

There is a degree of confusion regarding the specification of brake fluid and this article sets out to clarify the situation.

The Department of Transportation (DOT) classifies brake fluids to defined specifications. These specifications relate to their boiling points and chemical composition, both of which are important. Automotive brake fluids are covered by one of the following specifications; DOT3, DOT4, DOT5 and DOT5.1.

The laws of thermo-dynamics dictate that the energy from motion is turned into heat through friction. A braking system only works efficiently if the fluid remains incompressible. If the brake fluid boils, it turns to gas, which is compressible and the braking system becomes "spongy" or in extreme cases fails completely.

A brake system is not perfectly sealed and moisture can get into the system and be absorbed by the fluid. The effect is to reduce the boiling point of the fluid, which reduces the efficiency of the braking system, as described above.

The DOT specify two reference tests for brake fluids.

- Dry boiling point - the boiling point of fresh fluid
- Wet boiling point - the boiling point once the fluid has absorbed moisture (representing brake fluid after time spent in a real situation).

There are two main types of brake fluids.

- DOT 3, DOT 4 and DOT 5.1 which are based on glycol (Poly Alkylene Glycol or PAG)
- DOT 5, which is based on silicone.

Note the two types of fluid are not compatible and must not be mixed in a braking system.

Silicone Brake Fluid (DOT 5)

Silicone based DOT 5 was originally introduced to give higher temperature performance over glycol DOT 4. Silicone fluid also has other advantages, it does not damage paintwork and it does not absorb water. However, silicone fluid is a poor lubricant and does not lubricate ABS pumps as well as PAG fluids. It is also more compressible than PAG fluids, which can result in a sluggish or spongy pedal. It therefore requires special design considerations in braking systems. Further, because it does not absorb water, any water remains as globules, which can pool in low spots in the system and cause corrosion. This water can vaporise when heated under heavy braking giving a disastrous effect on braking efficiency. DOT5 fluids are not recommended for motor sport applications.

PAG - Poly Alkylene Glycol Brake Fluids (DOT 3, 4 and 5.1)

Glycol-based DOT 4 fluid is the current mainstream brake fluid, and you will see that the specification is considerably better than DOT 3 which it replaces. DOT 5.1 has a higher specification still and is intended for fast road and occasional track day use.

Listed in the table below are the minimum dry and wet boiling point specifications for each DOT level.

Minimum Boiling Point	DOT 3 (PAG)	DOT 4 (PAG)	DOT 5 (silicone)	DOT 5.1 (PAG)	Racing Brake Fluids
Dry	205°C	230°C	260°C	260°C	300°C
Wet	140°C	155°C	185°C	185°C	195°C

Millers Racing Brake Fluid 300 Plus



Millers Racing Brake Fluid is a very high boiling point glycol based brake fluid specifically developed for motor sport application. It is nominally designated DOT 4, (as are all racing brake fluids) but its performance exceeds DOT 5.1 on both wet and dry boiling points. In addition it has extremely good "compressibility" characteristics to ensure excellent pedal feel.

