

SILICONE BRAKE FLUIDS - BEWARE

We have received a number of enquiries from motorists reporting problems with silicone fluids

CASTROL neither markets such fluids nor recommends their use in a braking system.

Virtually all of the problems relate to :-

Long / spongy pedal
Sudden loss of brakes
Hanging on of brakes

They reflect certain properties of silicone fluids identified by us over the years and recently ratified in S A E publications, namely :-

High ambient viscosity
High air absorption
High compressibility
Low lubricity
Immiscibility with water

Research has shown that the relationships between problems reported and properties identified may be expressed as follows :-

long / spongy pedal

- a) compressibility , up to three times that of glycol based products.
- b) high viscosity, twice that of glycol based fluids, leading to slow rates of fill and retention of free air entrapped during filling, and hence bleeding difficulties.

sudden loss of brakes

- a) air absorption. Gasification of absorbed air at relatively low temperature produces a vapour lock effect.
- b) Immiscibility (failure to mix) with water. Whilst the presence of dissolved water will reduce the boiling point of glycol based fluids, any free water entrapped in silicone-filled systems will boil and produce vapour lock at much lower temperatures. (100C or thereabouts)

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hanging on of brakes

- a) Low lubricity. In disc brake systems the sole mechanism for normalisation of system pressure upon release of pedal pressure is a designed-in tendency of seals to recover to their "at rest" attitude. Low lubricity works against this tendency.
- b) High viscosity, exacerbating the effect of a) above.

It should not be assumed, therefore, that the high price of silicone fluids implies higher performance in hard driving or even normal road use.

Castrol glycol based fluids do not contain the adverse properties described above.

Castrol Superdisc DOT 5.1 which exceeds the performance criteria of DOT5, is suitable for all conditions likely to be encountered in modern driving .