AUTOMEC

BRAKE FLUID FACTS

By Ray Smith at Automec

Essentially there are three types of brake/clutch fluid; Glycol, Mineral and Silicone.

1) Mineral fluid

This is mainly used in Citroen and Rolls Royce vehicles and the piping is generally of smaller diameter 3.5mm as opposed to the more usual 3/16"(4.75mm). Mineral fluid systems must never be filled with glycol or silicone fluid as the rubbers will be ruined and similarly mineral fluids must never be used in those systems designed for glycol/silicone.

2) Silicone Brake & Clutch Fluid DOT5

Dyed purple for ready identification, it is permanent. Fill and forget except for the occasional topping up. Silicone fluid is non-hygroscopic, that is to say it repels moisture as opposed to "picking it up" thereby significantly reducing corrosion irrespective of its age. SBF has a stable boiling point of 260c, however it was not developed for, and is not intended for, racing use. The viscosity remains stable and it is virtually inert through most climactic extremes, which is really why the U.S. Military specify it for their light vehicles. They can move a vehicle in "store" from Alaska to Okinawa without having to change the brake fluid. Moreover SBF has a permanent shelf life which is important for those who store or keep the product for use or sale. No "sell by" "use by" dates are necessary. In addition SBF does not damage paintwork, it can be washed off.

3) Glycol Brake & Clutch Fluids DOT3,4 and DOT5.1

Most commonly used throughout the motor industry. Highly hygroscopic that is to say absorbs moisture from the "moment it is made". Practically nothing can stop this process. A given amount of glycol will absorb a given amount of moisture in a given amount of time. That is why all vehicle manufacturers specify a brake fluid change in their service schedules every 1 to 2 years. The problem here is that the replacement "new" fluid might conceivably be older and in worse shape than the fluid being replaced. No glycol containers on sale in the UK have clear "use by" or "sell by" dates although we know some Spanish stores are beginning to retro label their stocks with dates. Moisture is known to enter cans through the seams and brake systems through the flexible hoses. Moisture lowers the boiling point, causes brake loss/fade, corrosion and alters the fluid viscosity. A DOT4 glycol might not even meet the DOT 3 standard within 2 years because of this degradation. Due to this moisture absorption glycol has a finite shelf life. Glycol is highly flammable. If it comes into contact with anything hot such as a scolding exhaust manifold, as may occur in an accident, it will ignite instantly. This problem has been referred to by some traffic officers at scenes of motor vehicle accidents. Silicone by contrast in a similar scenario would simply smoke as was vividly illustrated some years ago by the TV programme Top Gear. Glycol is well known to seriously damage paintwork. It is also highly toxic and it presents a major environmental challenge. At least 10,000 tonnes of the old fluid has to be disposed of somehow in the UK every year.

For more information go to **www.automec.co.uk**