Shell Chemicals

DONAX Brake fluids

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Bringing the world to a halt

Shell brake fluids are a vital safety component in cars and light commercial vehicles everywhere. A truly global player in hydraulic brake and clutch fluids, Shell is an acknowledged leader in the market for both initial fill and service replenishment. This position is founded on a unique combination of technical excellence, consistent quality, and exemplary sales and service support.

….Wherever in the world people and goods are on the move, they can rely on Shell brake fluids to bring them safely to a halt.

The safety margin

There is a chemical product which makes life safer for millions of people around the world, yet is often overlooked by those who, one day, may depend on it for their lives.

An over dramatic introduction to brake fluids?

Not when the facts are considered:

- A brake fluid must remain compatible with the increasingly complex variety of materials which constitute a modern braking system.
- It must retain its essential qualities of incompressibility and thermal stability under extremes of temperature.
- It must protect metals from corrosion, whilst preventing rubber seals and hoses from either swelling or shrinking.
- And it must do it all with minimal attention over prolonged periods of time.

…. Shell brake fluids meet or exceed all international standards.

Go well with Shell

Shell has been at the forefront of the development of automotive fluids since the dawn of motoring itself. It has pioneered successive advances in fuels and lubricants through its global commitment to research and development through a network of world-class facilities.

…. Shell brake fluids are specified for 'original fill' by most major international car manufacturers, including such a prestigious brand as Ferrari, and are used for service fill purposes by most other marques.

Leadership driven by technology

Equipped with the most advanced facilities, including versatile test rigs, our scientists and engineers are the driving force behind a continuous stream of technical advances. These include DOT 4 Ultra, a grade developed specially to meet the demanding specifications set by Ferrari for some of the world's most powerful supercars.

Shell Chemicals' fundamental knowledge of key factors such as materials compatibility, corrosion inhibition and rubber swell enables Shell to work with the world's foremost OEM suppliers of hydraulic brake and clutch systems in a constant quest for improved performance and an enhanced product life.

Our centre of technical excellence is also available to customers to develop special grades for new applications, or in conjunction with alternative materials such as novel elastomers, light weight metals and plastics, as they are adopted by system manufacturers in pursuit of weight savings or production advantages.

….Shell's global leading position in brake fluids is based on advanced technical development and support.

Excellence in manufacturing and logistics

Shell brake fluids are manufactured in state-of-the-art facilities at different locations worldwide, with clear strategies for implementing QS9000 quality standards. Manufacturing facilities have been upgraded recently to maximise product consistency and quality, as well as expanding production capacity. Our global network of storage, packaging and distribution centres at strategic locations around the world guarantees flexibility and increases our ability to respond to customer needs.

….Shell offers consistency in manufacture, as well as security and flexibility in supply.

World class chemistry

Shell brake fluids are based on established glycol ether / polyglycol formulations which offer a series of proven advantages in performance and service life, including low compressibility, miscibility with water and rubber compatibility.

Shell Chemicals' experience in this chemistry is long, deep and broad, stretching back to the first formulations of this type in the 1950s. Individual grades have been developed to meet or exceed all international standards and to display outstanding performance in terms of corrosion inhibition and materials compatibility.One very important reason why Shell grades meet or exceed minimum international standards is that they delay the onset of vapour lock - a physical phenomenon affecting brake fluids. Vapour lock can occur when the temperature of the fluid exceeds its boiling point under arduous braking leading to compressible gas bubbles forming in the system and resulting in a dramatic loss of braking power.

The boiling point of Shell brake fluids is not only comfortably higher than the required standard but further protection against vapour lock can be provided by using DOT 4 quality grades, which include a chemical water scavenging mechanism. The reaction between glycol ether and boric acid creates a chemical "sponge" which soaks up water and keeps the brake fluid drier for longer. The result is more effective braking power throughout the service life of the fluid.Corrosion is kept at bay by advanced chemical inhibition packages developed by Shell to protect metal components in the braking system throughout the service life of the fluid. To maintain peak protection and operating efficiency, Shell recommends that the brake fluid is changed at least every three years, and otherwise subject to the vehicle manufacturer's recommendation.

Shell Chemicals' core expertise in polymer technology, plasticiser chemistry, lubricity technology, and the characteristics of novel materials qualifies the company to act as a strategic supplier to vehicle manufacturers and braking system OEMs around the world.

Anti-lock braking systems (ABS) and traction control systems (TCS) are increasingly specified by vehicle manufacturers to enhance the safety of their products. These place additional emphasis on the need for brake fluids to retain their ability to flow through very narrow channels at all temperatures and under all conditions. Under live testing conditions, Shell DOT 5.1 brake fluid has proven its ability to retain not only its exceptionally high boiling point but also its effectiveness at temperatures down to -40°C.

Shell Chemicals' expertise in viscosity influences is a further example of ways in which Shell develops brake fluids on the basis of "whole system" performance.

.... World-class chemistry delivers best-in-class performance.

Stopping power with staying power

All brake fluids, from whatever source, must meet one or more of the internationally agreed specifications - The Society of Automotive Engineers (SAE) J1703 and Federal Motor Vehicle Safety Standards (FMVSS) - covering key performance criteria such as boiling point, low and high temperature viscosity, rubber swell properties and corrosion protection.

.... No matter what the specification, Shell always goes one better.

Even though the minimum standard boiling point for DOT 3 fluids is 205°C, and DOT 4 230°C, Shell DONAX B and DONAX YB brake fluids consistently maintain a safety margin well in excess (up to 20%) of these minimum standards.

DOT 4 Ultra grade is an example of how customer-led development leads to real advances in braking performance. Shell Chemicals' research scientists developed this high performance grade - capable of meeting both current and anticipated future brake fluid specifications - in direct response to demand from car manufacturers. DOT 4 Ultra is approved by Ferrari, and is also available in small packs as Shell DONAX UB.

The Shell DONAX range consists of five grades formulated to meet or exceed the differing specifications required by individual countries and OEMs.

....Shell's global presence and world-class reputation are a guarantee of excellence: in product performance, in technical support, and in reliability of supply.

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