

Invented for life



BOSCH

Brake fluids

Braking safely



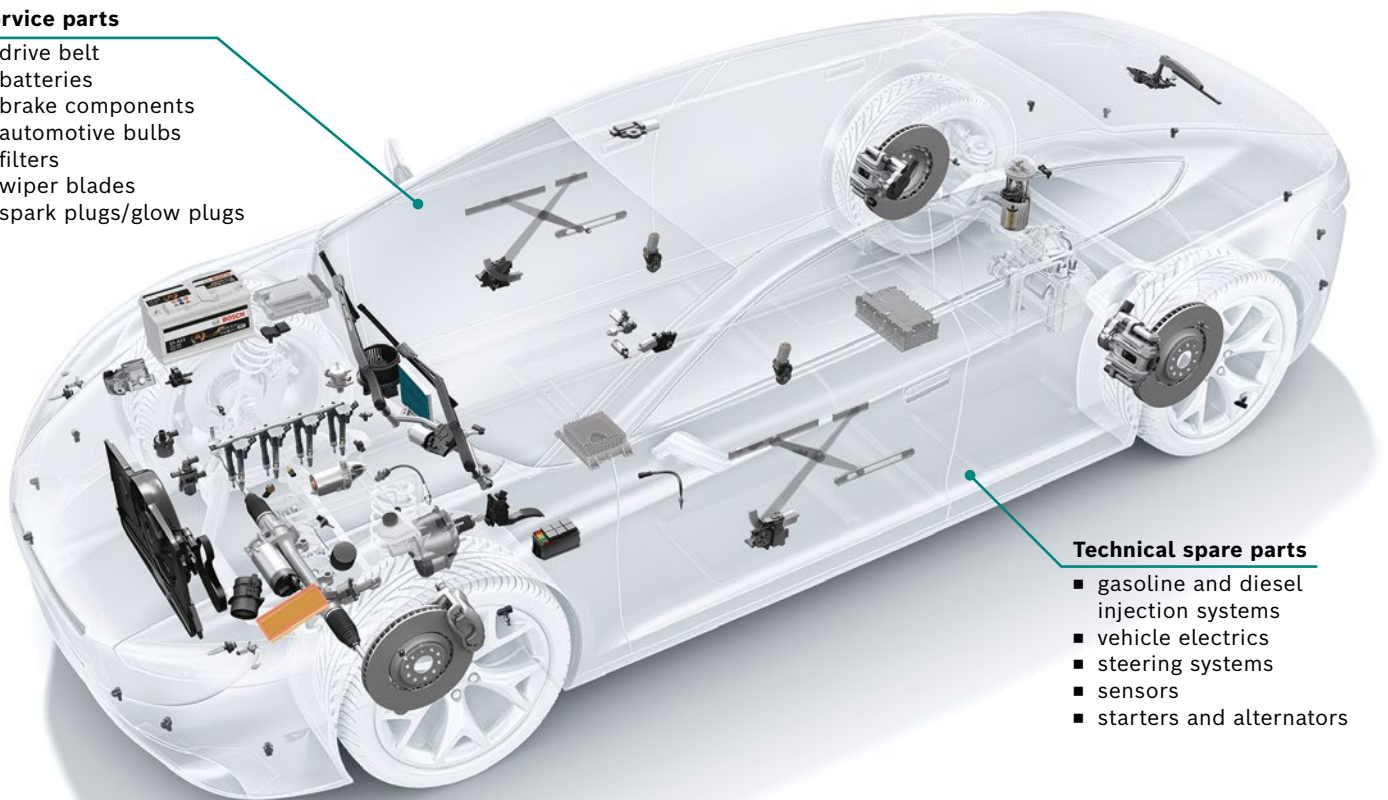
Suitable spare parts for all drives

Bosch product range for passenger cars

Bosch supports workshops in the repair and maintenance of all types of vehicles and drives. To this end, Bosch offers a comprehensive range of reliable, long-lasting, spare and service parts in high quality. Since hybrid-electric and battery-electric vehicles continue to use hydraulic braking systems, the brake fluid can be applied as in cars with combustion engines.

Service parts

- drive belt
- batteries
- brake components
- automotive bulbs
- filters
- wiper blades
- spark plugs/glow plugs



Technical spare parts

- gasoline and diesel injection systems
- vehicle electrics
- steering systems
- sensors
- starters and alternators

Bosch offers workshops an extensive portfolio of spare and service parts e.g. for mild hybrid electric vehicles (MHEV).

For modern vehicle repairs: spare parts, workshop equipment, services and support

- Continuously updated service offers for workshops
- Workshop equipment for vehicle diagnostics: air conditioning service, battery service, ADAS calibration, emissions analysis, vehicle-system analysis, ECU diagnosis and ESI[tronic] 2.0 online workshop software
- Suitable training courses for the repair business with modern drives
- Service parts and technical spare parts



FSA 050 for the diagnoses of battery-electric and hybrid-electric vehicles

Stand-alone measuring device for testing vehicles with battery-electric and hybrid-electric drives – an important and simple diagnostic module.

- handheld device with radio connection to the PC system
- insulation tests
- high-voltage tests
- use as stand-alone unit or as optional accessory for FSA 500/720/740



Brake fluids

Product range and Product details



	DOT 4	DOT 4 HP	ENV4	ENV6
	Bosch DOT 4 brake fluid is suitable for the majority of all current vehicles.*	Bosch DOT 4 HP is a further development of the Bosch DOT 4 brake fluid and is characterized by a higher dry and wet boiling point and a lower viscosity.*	Bosch ENV4 is an elite DOT 4 brake fluid. High safety in road traffic is achieved by a significantly higher dry and wet boiling point and low viscosity.*	Bosch ENV6 sets new standards for DOT 4 brake fluids. It can replace all previous standard brake fluids on glycol base* (applies to vehicle models from 1990) and reduces the complexity in the workshop.
Dry boiling point (°C)	≥ 230	≥ 260	≥ 265	≥ 270
Wet boiling point (°C)	≥ 155	≥ 170	≥ 175	≥ 180
Viscosity at -40 °C (mm ² /sec)	≤ 1500	≤ 700	≤ 700	≤ 700
DOT types	DOT 4	DOT 4, DOT 4 HP	DOT 4, DOT 4 HP	DOT 3, DOT 4, DOT 4 HP, DOT 5.1
Scope of application				
Compatibility ABS/ESP	ABS (1. Generation)	ABS + ESP	ABS + ESP	ABS + ESP
Performance	●●○○○	●●●○○	●●●●○	●●●●●
Container size (l)	0,5 / 1 / 5 / 20 / 60	0,5 / 1 / 5 / 20 / 60	0,5 / 1 / 5 / 20 / 60	0,5 / 1 / 5 / 20 / 60
Change interval **	2 Years or 40.000 km	2 Years or 40.000 km	2 Years or 40.000 km	3 Years or 60.000 km

Advantages at a glance

- Long brake system service life: due to high-quality corrosion protection
- High quality: legal standards are clearly exceeded
- Cold-resistant: due to its low viscosity at -40 °C
- fast and safe braking
- high vehicle stability even for reactive braking
- OE brake fluid of high quality
- suitable for all standard vehicles (DOT 3, DOT 4, DOT 5.1 with or without ABS/ESP®)
- new OE standard for some vehicle manufacturers and Bosch system development
- longer maintenance intervals can be achieved

* Not suitable for mineral oil or silicone based systems.

** Please always observe the manufacturer's information.

Brake fluids

Product range



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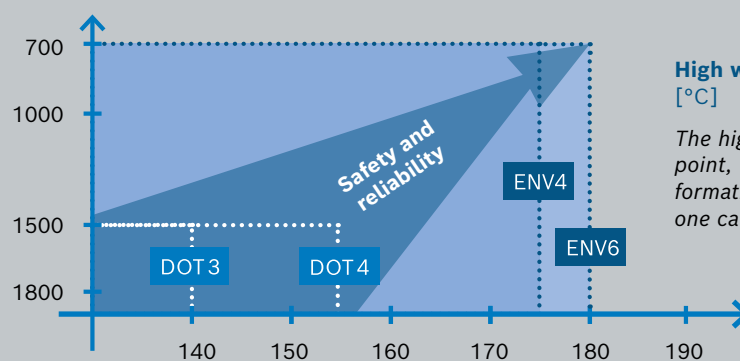
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Comparing the viscosity and wet boiling point of different brake fluids

Viscosity
[mm²/s]

The lower the viscosity, the shorter the reaction times of ESP®



High wet boiling point
[°C]

The higher the wet boiling point, the lower the risk of formation of vapor bubbles – one cause of brake failure.

DOT 4-Brake fluid

Product details

Bosch DOT 4 brake fluid is suitable for the majority of all current vehicles. As a standard brake fluid, it meets the current standards in proven Bosch quality and protects the brake system from corrosion.



Advantages at a glance

- **Long brake system service life:** due to high-quality corrosion protection
- **High reliability:** Extensive testing beyond the standard specifications
- **High quality:** due to high quality ingredients

KeySecure Code Authentication

The KeySecure QR-Code contributes to protection against product counterfeiting.

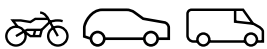
Scanning the code will lead you to an authentication page confirming that you have purchased an original Bosch product.



DOT 4 HP-Brake fluids

Product details

Bosch DOT 4 HP is a further development of the Bosch DOT 4 brake fluid and is characterized by a higher dry and wet boiling point and a lower viscosity. This provides additional protection against the formation of vapor bubbles in the fluid at high brake temperatures, which can lead to brake failure. ABS/ESP® systems operate more reliably at low temperatures due to the use of low-viscosity brake fluids. Special additives protect against corrosion in the ABS/ESP® system.



Advantages at a glance

- **High quality:** legal standards are clearly exceeded
- **Cold-resistant:** due to its very low viscosity at -40 ° C
- **Protects ABS/ESP®:** due to special lubricants
- **Long brake system service life:** due to high-quality corrosion protection

Quality tests

At the Bosch development center brake fluids are subjected to chemical tests. They are exposed to extreme strains both in terms of test routines regarding the system-pressure build-up at extreme temperatures and wear and noise tests.

The goal is to ensure the fluids are reliable and safe and perform well with ABS/ESP under extreme conditions.

ENV4-Brake fluids

Product details

Bosch ENV4 is an elite DOT 4 brake fluid. High safety in road traffic is achieved by a significantly higher dry and wet boiling point and low viscosity. Higher boiling points offer additional protection from the formation of vapor bubbles in the fluid at excessively high brake temperatures, which can cause brakes to fail in extreme cases.



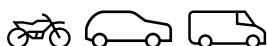
Advantages at a glance

- **Fast and safe braking:** meets and exceeds the worldwide brake fluid standards SAE J, ISO 4925, DOT 4 and DOT 4 HP
- **High vehicle stability even for reactive braking:** the high-quality and viscous fluid ensures optimum responsiveness of the ABS and ESP® systems
- **Reliable quality:** the original equipment brake fluid is based on more than 100 years of Bosch experience in the development of brake systems
- **Long shelf life (well closed at least 5 years):** the tinplate packaging additionally protects the brake fluid from water absorption

ENV6-Brake fluids

Product details

Highly dynamic brake fluid for tough conditions – with low viscosity and a high wet boiling point, ENV6 already complies with the requirements of future brake systems.



Advantages at a glance

- **One for all:** ideally suited for all common vehicles (DOT 3, 4, 5.1 with or without ABS/ESP®)
- **Fast and safe braking:** surpasses all mentioned brake fluid standards
- **Performance at the highest level:** ENV6 is the new standard at Bosch for current and future developments of new brake technologies
- **High vehicle stability even with reactive braking:** the high-quality and viscous fluid ensures optimum responsiveness of the ABS and ESP® systems
- **Longer service intervals:** can be achieved with the higher specifications (a brake fluid tester in your workshop helps to check the boiling points)
- **Long shelf life (well closed at least 5 years):** the tinplate packaging additionally protects the brake fluid from water absorption
- **Protects ABS and ESP® from wear and corrosion:** due to the refined inhibitor components that also ensure good system lubrication

Brake fluids

Replacement at the workshop

Preparations for the replacement of brake fluids

Correct preparation helps saving time. This applies to the replacement of a vehicle's brake fluid as well:

- Use the automotive lift or a workshop pit.
- Prepare your tools: Bleeding bottle, filled overpressure equipment, syringe to extract brake fluid and a receptacle to fill in the used brake fluid.
- Open and ring wrenches featuring the right sizes should be at hand.

Attention! Only trained professionals should maintain braking systems and replace brake fluids. In this regard, please note the respective vehicle manufacturer's specifications.

How to proceed when replacing brake fluids

Connecting the overpressure equipment

- Select the suiting brake fluid according to the manufacturer specifications.
- Extract as much brake fluid as possible from the reservoir.
- Connect the overpressure equipment using the matching vehicle-specific adapter for the expansion tank and fill in at least 3 litres of brake fluid.
- Adjust the pressure as specified by the manufacturer to 0.5–2 bar (7.25–29 psi).
- The device will now build up the pressure. Check the expansion tank for any leakages.



Bleeding the braking system

- Start brake bleeding at the wheel located the closest to the brake master cylinder. Depending on the individual application, the brake master cylinder can be placed at different locations. The Bosch KTS system will provide you with detailed information on this topic.



Brake fluids

Replacement at the workshop

New brake fluid flows in – free of bubbles and yellow

- Hook in the bleeding bottle at an axle part (not at the brake hose) and plug the transparent plastic hose onto the bleed screw.
- Having turned the bleed screw by half a turn, let the liquid (approx. 250 ml) flow until the brake fluid comes out free of bubbles and yellow.



Checking the brake-fluid level at the expansion tank

- Proceed accordingly at all axles. Depending on the manufacturer, this procedure might vary. Checking the brake-fluid level at the expansion tank. For this reason, Bosch recommends to have a look at the Bosch KTS system. Attention! Having completed this procedure on one axle, the bleed screw is to be tightened again! Always drain about the same amount of fluid on each one of the brakes and tighten the respective bleed screw after each bleeding.
- Information: The bleeding device automatically pumps fresh brake fluid into the brake hoses.
- Turn off the bleeding device and disconnect it from the expansion tank.
- Check and correct the level of brake fluid until it reaches the “MAX” level at the expansion tank.



Workshop tip

Brake fluid tester BFT 100

The tester is based on the boiling point method and compares the brakefluid with the minimum DOT values stored in the appliance.

The brake fluid tester is also suitable for hybrid-electric and battery-electric vehicles.



Workshop tip

- Always wear protective gloves and safety glasses and stick to the safety instructions!
- In case any brake fluid drops onto the vehicle paint, wash it off with a lot of water!
- Always dispose of brake fluid at specialized waste-management facilities!



Advantages of ESI[tronic] 2.0 Online

- Easy operation
- One standardized system across all brands
- Comprehensive market coverage
- Modular structure

Know-how for professionals: ESI[tronic] 2.0 Online and test equipment



Everything about control unit diagnosis from a single source

Complex and connected vehicle systems demand increasingly well qualified diagnoses and comprehensive repair know-how from today's workshops – for engine management, mechanical and electronic components have converged in recent years. Bosch therefore offers workshops extensive knowledge and a complete range of test equipment from a single source. Modern, high-performance diagnostic equipment, technical trainings, and a hotline support workshops in all repairs on electronic systems.

ESI[tronic] 2.0 Online for diagnostics and servicing

ESI stands for "Electronic Service Information" and is the name of the software for servicing tasks. This includes:

- Professional ECU diagnosis
- Guided troubleshooting right on the system
- Experience-based repair – known fixes
Find the matching solution for your problem within seconds
- OEM-quality maintenance schedules and plans
- Interactive circuit diagrams
- Access to protected vehicle data (Secure Diagnostic Access)

Tailor-made for workshops

ESI[tronic] 2.0 Online is completely geared to the needs of workshops. Comprehensive market coverage and constant updates are provided as a matter of course. Easy operation, quick access, and a standardized system across all brands make ESI[tronic] 2.0 Online a user-friendly information tool.

Thanks to the modular package options, workshops can expand their diagnostic software requirements – with additional options – as needed.

A complete range of diagnostic and test equipment

- ECU diagnosis
- Battery service BAT
- Air conditioning service ACS
- Emission analysis BEA
- Vehicle system analysis FSA
- Driver Assistance Systems Calibration
- Diesel component testing EPS
- Technical hotline and trainings

What drives you, drives us

Bosch technologies are used in most vehicles worldwide. People, and assuring their mobility, is what we are focused on.

Therefore, we have dedicated over 130 years of pioneering spirit and expertise in research and manufacturing to achieving this.

We provide the aftermarket and workshops worldwide with modern diagnostic and workshop equipment and a wide range of spare parts for passenger cars and commercial vehicles:

- Solutions for efficient and effective vehicle repairs
- Innovative workshop equipment and software
- One of the world's most comprehensive ranges of new and exchange parts
- Large network of wholesale customers, for quick and reliable parts supply
- Competent technical support
- Comprehensive educational and training offers
- Targeted sales and marketing support

Find out more at:
boschaftermarket.com

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