

Brake Fluid

Brake Fluid LOTOS DOT-5.1

Characteristics:

LOTOS DOT-5.1 brake fluid is a modern, fully synthetic fluid designed to provide an increased level of safety.

The fluid is intended for hydraulic brake and clutch systems of all motor vehicles and motorcycles for which the manual recommends using brake fluid DOT-5.1. It is particularly recommended for high-power vehicles, working under extreme conditions, and sports cars. It is recommended to use LOTOS DOT-5.1 BRAKE FLUID for ABS, ESP, ASR and other systems.

LOTOS DOT-5.1 brake fluid is a mixture of polyglycols, borate ester, corrosion and oxidation inhibitors and other additives improving the fluid's operating properties.

Instructions for application:

The brake system should be filled with the fluid in accordance with the vehicle's operating and maintenance instructions. Car manufacturers recommend replacing each brake fluid every 2 years, or after every 40,000 kilometres of mileage.

Note!

Do not mix with silicone-based DOT-5 fluids.

Store the liquid in original, tightly closed packaging - protect against moisture. Due to the high hygroscopicity of brake fluids, leaving samples of liquid in open vessels may cause changes in their physicochemical properties. Protect car paint from contact with the brake fluid.

№.	Requirements	Unit	Value
			LOTOS Brake Fluid DOT-3
1.	Colour		From colourless to yellow
2.	Appearance		uniform, transparent liquid
3.	Boiling point, not lower than the boiling	°C	260
4.	Point of the liquid, not lower than	°C	180
5.	Kinematic viscosity, mm ² /s, at: 100°C, not less than -40°C, no more than	mm ² /s	1,5 900
6.	the pH of the solution		7.0-11,5
7.	Stability: -thermal stability, boiling temperature change, within limits - chemical stability, boiling temperature change, °C, within limits	°C	+/- (3 °C + 0.05 °C per every 1°C exceeding 225°C) +/- (3 °C + 0.05 °C per every 1°C exceeding 225°C)

8.	<p>Corrosion properties: -change in the weight of the plates,tinned</p> <p>Steel</p> <p>Aluminium</p> <p>Cast iron</p> <p>Brass</p> <p>Copper</p> <p>- visual inspection of the plates after the test</p>	- mg/cm ²	<p>from 0.2 to -0.2 from 0.2 to -0.2 from 0.1 to -0.1</p> <p>from 0.2 to -0.2 from 0.4 to -0.4 from 0.4 to -0.4</p> <p>corrosion pits and etching are not allowed, stains and discolouration may occur</p>
	- assessment of SBR rubber gaskets after corrosion test: increasing the diameter of the gasket base, mm, no more than change in hardness, IRHD destruction of rubber	-	<p>1,4 from 0 to -15 blisters, exfoliations and stickiness are not allowed</p>
	- fluid assessment after corrosion test: appearance	-	gelling and crystalline deposits are not allowed
	sediment content,% (V/V), no more than the pH of the solution	%(V/V),	<p>0.10</p> <p>7.0- 11,5</p>
9.	<p>Appearance and fluency at low temperatures: - after 144 h at -40°C: appearance of the liquid</p>		transparent liquid, no sediment deposits and delamination
	<p>air bubble flow time, s, no more than - after 6 hours at -50°C: appearance of the liquid</p>		<p>10</p> <p>transparent liquid, no sediment deposits and delamination</p>

	air bubble flow time, s, no more than after heating to (23 +/- 5)°C		35 appearance and smoothness unchanged with respect to the starting fluid
10	<p>Evaporative characteristics:</p> <ul style="list-style-type: none"> - loss of mass of fluid no more than - appearance of evaporation residues - residue solidification temperature, not higher 	<p>% (m/m),</p> <p>°C,</p>	<p>80</p> <p>crystalline and scratching deposits are not allowed</p> <p>-5</p>
11.	<p>Resistance to water:</p> <ul style="list-style-type: none"> - after 120 hours at -40°C: appearance of the liquid - air bubble flow time, s, no more than - after heating the liquid to room temperature - after 24 hours at 60°C: appearance of the liquid, sediment content, no more than 	<p>% (V/V),</p>	<p>no sediment, suspension or delamination is allowed, slight turbidity is allowed not reducing the clarity of contrast line model according to Annex B, which disappears after heating the liquid to room temperature</p> <p>10</p> <p>appearance and smoothness unchanged with respect to the starting fluid</p> <p>liquid without delamination 0.15</p>

12.	Miscibility with reference fluid - appearance of the fluid after 24 h at -40°C - -after 24 hours at 60°C: appearance of the liquid sediment content, no more than	% (V/V),	transparent liquid, no sediments, suspensions and delamination; liquid without delamination 0.05
13.	Oxidation resistance: -appearance of plates -mass change of an aluminium plate, -mass change of a cast iron plate,	mg/cm2 mg/cm2	outside the places of contact, with tin foil, pungent and etchings not visible with the unaided eye are not allowed; stains and change of colour and traces of resinous substances are allowed from 0,05 to -0,05 from 0.3 to -0.3
14.	Influence on SBR rubber gaskets: - at 70°C: increasing the diameter of the gasket base, mm change in hardness, IRHD rubber destruction - at 120°C: increasing the diameter of the gasket base, mm change in hardness, IRHD rubber destruction		from 0.15 to 1.40 from 0 to -10 blisters, exfoliations and stickiness are not allowed from 0.15 to 1.40 from 0 to -15 blisters, exfoliations and stickiness are not allowed

* according to the supplier's data

Classifications, specifications;

It corresponds to the requirements of standards: FMVSS 116/DOT-5.1/, SAE J 1703, SAE J 1704, ISO 4925, PN-C-40005 /DOT-5.1/, ZN-03/Og-Car/-63 /DOT-5.1/

✓ Miscible with other DOT-5.1 brake fluids that meet the requirements of the above mentioned standards

Storage conditions:

DOT-5.1 brake fluid should be stored in storage rooms at a temperature not exceeding 40°C. Packages should be placed vertically. The expiry date for use under the conditions of storage is 3 years.

Health, Occupational Health and Safety, Environment:

Safety information is included in the Materials Safety Data Sheet (MSDS characteristics). It contains detailed information on the potential hazards, precautions and First Aid measures, together with information on the impact on the environment and the disposal of used products. LOTOS Oil Sp. z o. o. and cooperating companies do not take responsibility for the consequences of improper product use or non-use of the precautions. Before using the product for purposes other than those listed, please consult your local LOTOS Oil Sp. z o. o. office.

Data contained in this document does not constitute an offer within the meaning of the Act of 23 April 1964 - Civil Code. LOTOS Oil Sp. z o. o. assumes no responsibility for any consequences of the use of the information contained herein, in particular when deciding on trade and investment. All data contained herein are typical of those obtained with normal production batch, they may vary slightly due to characteristics of the production process, as well as due to continuous product development. Data contained in this document may be subject to change. LOTOS Oil Sp. z o. o. is not responsible for the availability of the product.

Update: 30.05.2019