

Technical Data Sheet (TDS)

Shell Brake & Clutch Fluid DOT 4



Shell Brake & Clutch Fluid DOT 4 is a Glycol Ether Borate based hydraulic brake fluid, specifically formulated to exceed the requirements of the internationally recognised hydraulic brake fluid standards: FMVSS No 116 DOT4, SAE J1704, ISO4925 Class 4 and JIS K2233.

The material composition and performance will ensure the safe and reliable operation of vehicle braking systems, the key points being;

High Boiling Point – Exceeds the minimum ERBP and WERBP requirements, therefore minimising the risk of vapour lock under extreme conditions

Optimal Viscosity – our product is manufactured to ensure the system remains responsive in very cold conditions whilst preventing leakage and maintaining good lubricity at high operating temperatures

Corrosion Inhibition – fully protecting the complete range of metallic components within the braking system against corrosion damage and potential system failure.

Rubber Compatibility – promotes the correct rubber swell / hardness of all rubber components to maximise the working life of system seals, ensuring a safe system operation

Fluid Compatibility - can be safely mixed with other brake fluids meeting the DOT 3 and DOT 4 specification. It is not compatible with a Mineral Oil based fluid.

TYPICAL PROPERTIES

Typical Properties Parameter	Method	Shell Brake & Clutch	
		Fluid Dot4C	FMVSS116
Appearance	Visual	Amber liquid	Not Specified
Specific Gravity 15/15°C	ASTM D 4052	1,06	Not Specified
Equilibrium Reflux Boiling Point °C	SAE J1704	257	230 min
Wet Equilibrium Reflux Boiling Point °C	SAE 1704	157	155 min
-40°C Kinematic Viscosity, cSt	SAE 1704	1270	1800 max
100°C Kinematic Viscosity, cSt	SAE 1704	2,1	1,5 min
pH (50% vol.)	ASTM D 1121	8,4	7,0 - 11,5
Water Content	ASTM D 1123	0,10	Not Specified

Test	Typical Result	Specification
High Temperature Stability	-1°C	+/- 3°C Max
Fluidity & Appearance @ -40°C	Pass, 3 seconds	Max 10 seconds
Fluidity & Appearance @ -50°C	Pass, 7 seconds	Max 35 seconds
Water Tolerance @ -40°C	Clear, 3 seconds	Max 10 seconds
Water Tolerance @ +60°C	Clear, No sediment	Max 0.05%
Compatibility @ -40°C	Clear, No stratification	No stratification
Compatibility @ +60°C	Clear, No sediment	Max 0.05%

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CORROSION

Test	Typical Result	Specification
Tinned Iron	0.00 mg/cm ²	0.2 Max
Steel	0.00 mg/cm ²	0.2 Max
Aluminium	0.00 mg/cm ²	0.1 Max
Cast Iron	0.00 mg/cm ²	0.2 Max
Brass	0.05 mg/cm ²	0.4 Max
Copper	0.05 mg/cm ²	0.4 Max
Appearance of Test Strips	Pass	No Pitting, No Roughening, No Etching

EFFECT ON RUBBER

Test	Typical Result	Specification
SBR @ 70°C		
Base diameter increase	+0.35mm	+0.15 to 1.4mm
Hardness decrease, IRHD	-3	0 to -10
Hardness increase	None	None
Sloughing / blistering	None	None
SBR @ 120°C		
Base diameter increase	+0.50mm	+0.15 to 1.4mm
Hardness change, IRHD	-3	0 to -15
Volume swell, %	+3	+1 to +16
Sloughing	None	None
Disintegration	None	None
EPDM@70°C		
Hardness decrease, IRHD	-1	0 to -10
Volume swell, %	+1	0 to +10
Sloughing	None	None
Disintegration	None	None
EPDM@120°C		
Hardness decrease, IRHD	-2	0 to -15
Volume swell, %	+2	0 to +10
Sloughing	None	None
Disintegration	None	None

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Storage and Handling

Brake fluids can be stored in bulk in mild steel tanks and drums, and a suitable gauge high density polyethylene container. Please note, it is not recommended Brake Fluids are stored in any low density polyethylene containers. The use a desiccant unit in the tank vent is recommended to prevent the absorption of moisture during storage.

Brake fluids do not present a significant health hazard when used under normal conditions however in line with good industrial practice the used appropriate personal protective equipment is recommended. See the product SDS for details.

Attention must be paid to the avoidance of contamination of brake fluids. Water will dramatically lower the boiling point of the fluid reducing safety margins. Contamination with mineral oil based products can result in the degradation of the seals in the system and could lead to a potential system failure.

Hazards and Safety

As with all chemical products, awareness and control of any potential hazards is of high importance. Please consult the material safety data sheet which is available detailing the hazards associated with this product.

The content of this Technical Data Sheet has been prepared by taking into consideration the relevant international standards and the information contained in specifications of vehicle and equipment manufacturers. This Technical Data Sheet and the statements in content cannot be interpreted as a guarantee commitment in respect of product specifications or usage in any application.

It is the consumer's responsibility to use this product in accordance with its ordinary purpose and comply with the applicable laws and regulations. Kemetyl Kimya San. Tic. Ltd. Şti. shall not be held responsible for any claims or damages arising out of abnormal use, improper usage, use for the wrongful purposes or risks and consequences by the nature of product structure.

This Technical Data Sheet shall be valid on issue date. Right to amend information provided in content of this Technical Data Sheet without prior notice is reserved.