



# Brembo S.p.A.

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## BRAKE FLUID DOT 4

### *TECHNICAL SPECIFICATION*

**BRAKE FLUID DOT 4** is a high-performance brake fluid that meets the SAE J174, FMVSS § 571.116 DOT 4 and ISO 4925 Class 4 standards.

**BRAKE FLUID DOT 4** guarantees a high safety margin against the vapor lock phenomenon and offers maximum braking safety even in extreme operating conditions and low temperatures.

Thanks to the high anti-corrosive and oxidation resistance properties, it allows to maintain the chemical / physical characteristics of the fluid in the circuit in operation for a long time and to protect the components of the brake system, whether they are in rubber, metal and alloys or in elastomers, maintaining its integrity.

The product is compatible with all hydraulic braking systems except those that use a mineral or silicone fluid and can be mixed with DOT 3, 4 and 5.1 brake fluids.

<i>PROPERTY</i>	<i>UNITS</i>	<i>REQUIREMENT</i>	<i>SPECIF.</i>	<i>METHOD</i>
Appearance	-	-	Liquid homogenous	Visual
Colour	-	Colourless to amber	Colourless to amber	Visual
Equilibrium Reflux Boiling Point (ERBP)	°C	230 min	245 min	FMVSS 116 SAE J1704 ISO 4925
Wet Equilibrium Reflux Boiling Point (WERBP)	°C	155 min	157 min	FMVSS 116 SAE J1704 ISO 4925
Viscosity at -40 °C	mm <sup>2</sup> /s	1500 max	1500 max	FMVSS 116 SAE J1704 ISO 4925
Viscosity at 100 °C	mm <sup>2</sup> /s	1.5 min	1.5 min	FMVSS 116 SAE J1704

				ISO 4925	
pH	-	7-11.5	7-11.5	FMVSS 116 SAE J1704 ISO 4925	
Fluid Stability (High temperature)	°C	± 5	± 5	SAE J1704 ISO 4925	
Fluid Stability (Chemical)	°C	± 5	± 5	SAE J1704 ISO 4925	
Effect on SBR Rubber	70 °C	Increase of diameter, mm	0.15-1.4	0.15-1.4	FMVSS 116 SAE J1704 ISO 4925
		Hardness decrease (IRHD)	10 max	10 max	
		Disintegration	none	none	
	120 °C	Increase of diameter, mm	0.15-1.4	0.15-1.4	
		Hardness decrease (IRHD)	15 max	15 max	
		Disintegration	none	none	
Effect on EPDM Rubber	70 °C	Volume increase, %	0-10	0-10	SAE J1704 ISO 4925
		Hardness decrease (IRHD)	10 max	10 max	
		Disintegration	none	none	
	120 °C	Volume increase, %	0-10	0-10	
		Hardness decrease (IRHD)	15 max	15 max	
		Disintegration	none	none	
Fluidity and appearance at low temperatures	-40 °C	Appearance	As before test	As before test	FMVSS 116 SAE J1704
		Sludging, sedimentation crystallisation or stratification	none	none	
		Flow time, secs	10 max	10 max	
	-50 °C	Appearance	As before test	As before test	
		Sludging, sedimentation crystallisation or stratification	none	none	
		Flow time, secs	35 max	35 max	

Water tolerance	-40 °C	Appearance	As before test	As before test	FMVSS 116 SAE J1704
		Sludging, sedimentation crystallisation or stratification	none	none	
		Flow time, secs	10 max	10 max	
	60 °C	appearance	As before test	As before test	
		Stratification	none	none	
		Sediment, % v/v	0.15 max	0.15 max	
Wet corrosion	Wt. change (mg/cm <sup>2</sup> )	Tinned iron	± 0.2 max	± 0.2 max	FMVSS 116 SAE J1704
		Steel	± 0.2 max	± 0.2 max	
		Aluminum	± 0.1 max	± 0.1 max	
		Cast iron	± 0.2 max	± 0.2 max	
		Brass	± 0.4 max	± 0.4 max	
		Copper	± 0.4 max	± 0.4 max	
	Pitting or etching		none	none	
	pH (after test)		7-11.5	7-11.5	
	Gelling at 23 ± 5 °C		none	none	
	Deposit		No crystalline	No crystalline	
	Sediment, %v/v		0.1 max	0.1 max	
	SBR rubber	Increase of diameter, mm	1.4 max	1.4 max	
		Hardness decrease (IRHD)	15 max	15 max	
		Disintegration	none	none	
	EDPM Rubber	Volume increase, %	10 max	10 max	
		Hardness decrease (IRHD)	10 max	10 max	
Disintegration		none	none		
Dry corrosion	Wt. change (mg/cm <sup>2</sup> )	Tinned iron	± 0.2 max	± 0.2 max	SAE J1704
		Steel	± 0.2 max	± 0.2 max	
		Aluminum	± 0.1 max	± 0.1 max	
		Cast iron	± 0.2 max	± 0.2 max	
		Brass	± 0.4 max	± 0.4 max	
		Copper	± 0.4 max	± 0.4 max	
	Pitting or etching		none	none	
	pH (after test)		7-11.5	7-11.5	
	Gelling at 23 ± 5 °C		none	none	
	Deposit		No crystalline	No crystalline	
	Sediment, %		0.1 max	0.1 max	
SBR rubber	Disintegration	none	none		

	EPDM rubber	Disintegration	none	none	
Compatibility	-40 °C	Sludging sedimentation crystallisation or stratification	none	none	FMVSS 116 SAE J1704
		Stratification	none	none	
	60 °C	Sediment %v/v	0.05 max	0.05 max	
Resistance to oxidation		Pitting or etching (tin foil)	none	none	FMVSS 116 SAE J1704
		Gum deposit	Trace only	Trace only	
		Aluminum wt. change mg/cm <sup>2</sup>	0.05 max	0.05 max	
		Cast iron wt. change mg/cm <sup>2</sup>	0.3 max	0.3 max	

### Handling and Safety

- FOLLOW VEHICLE MANUFACTURER'S RECOMMENDATIONS WHEN ADDING BRAKE FLUID.
- KEEP BRAKE FLUID CLEAN AND DRY. Contamination of brake fluid with dirt, water or other materials may result in brake failure or costly repairs.
- STORE BRAKE FLUID ONLY IN ITS ORIGINAL CONTAINER. KEEP CONTAINER CLEAN AND TIGHTLY CLOSED TO PREVENT ABSORPTION OF MOISTURE.
- CAUTION: DO NOT REFILL CONTAINER AND DO NOT USE FOR OTHER LIQUIDS.
- Minor spills should be soaked up with, sand or absorbent granules.
- Any spills on painted surfaces should be removed as quickly as possible and washed off with water to avoid paint damage.
- Dispose of content / container in accordance with local regulations.
- The compliance with the performance requirements is guaranteed for at least 24 months, as long as the product is kept in its sealed original package and kept at maximum 23 °C and 50 % relative humidity.