MAXOL Lubricants

TechnicalData

Maxol Universal Brake Fluid (Dot 4)

The product shall fully meet the requirements of the latest issue of the US FMVSS 116 DOT 4, DOT 3, SAE J 1703, SAE J 1704 and ISO 4925 (Classes 3 & 4) Specifications. The product shall also meet the following requirements :

Test	Units	Method	Specification
Equilibrium Reflux Boiling Point	°C.	FMVSS 116	230 Min.
Wet Equilibrium Boiling Point	°C.	FMVSS 116	155 Min.
Kinematic Viscosity at -40 °C.	cSt	ASTM D 445	1500 Max.

Maxol Universal Brake Fluid also conforms to many other international and manufacturers' standards. Details are available on request.

Important:
Always observe the manufacturers specifications when selecting products.
Maxol Lubricants reserve the right to change this product specification without notice.

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Test Required		Typical Results	Specification
Dry Equilibrium Reflux Boiling Point, °C		243	230 °C. Min.
Wet Equilibrium Reflux Boiling Point, °C		159	155 °C. Min.
Kinematic Viscosity	@ -40 °C, cSt	1296	1500 cSt Max.
	@ 100 °C, cSt	2.17	1.5 cSt Min.
pH		8.31	7 – 11.5
High Temperature Stability, °C		-2	+/- 3.0 °C. Max
Chemical Stability, °C		+1	+/- 3.0 °C. Max
Evaporation, %w/w		68	80% Max
Fluidity & Appearance	@ -40 °C	Pass, 3 seconds	No freezing, Bubble time 10 sec. Max
	@ -50 °C	Pass, 6 seconds	No freezing, Bubble time 35 sec. Max
Water Tolerance	@ -40 °C	Clear, 2 seconds	10 seconds Max
	@ +60 °C	Clear, No sediment	Sediment not to exceed 0.05% v/v
Compatibility	@ -40 °C	Clear, No stratification	No stratification
	@ +60 °C	Clear, No sediment	Sediment not to exceed 0.05% v/v
Colour, visual		Pale Amber	Water white to amber
Water Content, %		< 0.20	Not required
Density @ 20 °C, g/ml		1.04	Not required

Corrosion Resistance

Tinned Iron	Δ mg/cm^2	-0.01	0.2 Max
	Appearance	Good	No pitting or etching
Steel	Δ mg/cm^2	Nil	0.2 Max
	Appearance	Good	No pitting or etching
Aluminium	Δ mg/cm^2	+0.01	0.1 Max
	Appearance	Good	No pitting or etching
Cast Iron	Δ mg/cm^2	+0.02	0.2 Max
	Appearance	Good	No pitting or etching
Brass	Δ mg/cm^2	-0.04	0.4 Max
	Appearance	Good	No pitting or etching
Copper	Δ mg/cm^2	-0.08	0.4 Max
	Appearance	Good	No pitting or etching

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Zinc	Δ mg/cm^2	+0.07	0.4 Max
	Appearance	Good	No pitting or etching
Fluid Appearance		Pass	No crystallisation or gelling
Sediment %		< 0.05	< 0.1%
pH		7.98	7 – 11.5
Rubber Diameter Change mm		0.17	+1.40 Max
Hardness Change °IRHD		-1	-15 °IRHD Max
Appearance		Pass	No sloughing, blistering or disintegration

Oxidation Resistance

Cast Iron	Δ mg/cm^2	+0.03	0.3 Max
	Appearance	Pass	No pitting or roughening
Aluminium	Δ mg/cm^2	+0.01	0.05 Max
	Appearance	Pass	No pitting or roughening

Effect on Rubber

SBR @ 70 °C	Ø change, mm	+0.40	0.15 to 1.40
	Δ hardness, IRHD	-3	0 to -10
	Δ volume, %	+4.20	1 to 16
	Appearance	Good	No blistering, sloughing or disintegration
SBR @ 120 °C	Ø change, mm	+0.56	0.15 to 1.40
	Δ hardness, IRHD	-4	0 to -15
	Δ volume, %	+5.94	1 to 16
	Appearance	Good	No blistering, sloughing or disintegration
EPDM @ 70 °C (as required by SAEJ1703)	Δ hardness, IRHD	-1	0 to -10
	Δ volume, %	+1.50	0 to 10
	Appearance	Good	No blistering, sloughing or disintegration
EPDM @ 120 °C	Δ hardness, IRHD	-2	0 to -15
	Δ volume, %	+2.10	0 to 10
	Appearance	Good	No blistering, sloughing or disintegration

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Natural @ 70 °C (as required by ISO 4925)	Ø change, mm	+0.40	0.15 to 1.40
	Δ hardness, IRHD	-6	0 to -10
	Δ volume, %	+3.51	1 to 16
	Appearance	Good	No blistering, sloughing or disintegration

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