



Specifications and Test Results

Product: GRM RR363 – Hydraulic System Fluid
 Rev No: 1
 Date: December 2018

This product is suitable for use in the hydraulic systems of Rolls Royce and Bentley vehicles specifying RR363 type fluid.

Product shall fully meet the requirements of the latest issue of the US FMVSS 116 DOT 3, SAE J 1703 and ISO 4925 (Class 3) Specifications. Product also meets the following requirements:

Test	Units	Method	Specification
Equilibrium Reflux Boiling Point	°C	FMVSS 116	230 Min.
Kinematic Viscosity at -40 °C.	cSt	ASTM D 445	1500 Max.
Color	Abs	Spectrophotometric (455nm / 1cm cell)	0.380 Max.

Tests Performed	Results	Specification
Dry Equilibrium Reflux Boiling Point, °C	250	230 °C. Min.
Wet Equilibrium Reflux Boiling Point, °C	149	140 °C. Min.
Kinematic Viscosity @ -40 °C, cSt	1425	1500 cSt Max.
@ 100 °C, cSt	2.3	1.5 cSt Min.
pH	9.47	7 – 11.5
High Temperature Stability, °C	-2.0	+/- 3.0 °C Max.
Chemical Stability, °C	1	+/- 3.0 °C Max.
Evaporation, %w/w	64	80% Max.
Fluidity & Appearance @ -40 °C	Pass, 6 seconds	No freezing, Bubble time 10 sec. Max.
@ -50 °C	Pass, 16 seconds	No freezing, Bubble time 35 sec. Max.
Water Tolerance @ -40 °C	Clear, 6 seconds	10 sec. 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
Color, visual		Pale Amber	Water white to amber
Water Content, %		<0.20	Not required
Density @ 20 °C, g/ml		1.041	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	-0.008	0.2 Max
	Appearance	Good	No pitting or etching
Aluminum	Δ mg/cm ²	-0.013	0.1 Max.
	Appearance	Good	No pitting or etching
Cast Iron	Δ mg/cm ²	+0.004	0.2 Max
	Appearance	Good	No pitting or etching
Brass	Δ mg/cm ²	-0.07	0.4 Max
	Appearance	Good	No pitting or etching
Copper	Δ mg/cm ²	-0.06	0.4 Max
	Appearance	Good	No pitting or etching
Zinc	Δ mg/cm ²	+0.04	0.4 Max.
	Appearance	Good	No pitting or etching
Fluid Appearance		Pass	No crystallization or gelling
Sediment %		<0.05	<0.1%
pH		8.60	7 – 11.5
Rubber Diameter Change mm		+0.24	+1.40 Max
Hardness Change °IRHD		-1	-15 °IRHD Max
Appearance		Pass	No sloughing, blistering or disintegration

Oxidation Resistance			
Cast Iron	\emptyset mg/cm ²	+0.02	0.3 Max
	Appearance	Pass	No pitting or roughening
Aluminum	Δ mg/cm ²	-0.01	0.05 Max.
	Appearance	Pass	No pitting or roughening

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Effect on Rubber			
SBR @ 70 °C	∅ Change, mm	+0.32	0.15 to 1.40
	Δ hardness, IRHD	-4	0 to -10
	Δ volume, %	+3.49	1 to 16
	Appearance	Good	No blistering, sloughing or disintegration
SBR @ 120 °C	∅ Change, mm	+0.86	0.15 to 1.40
	Δ hardness, IRHD	-11	0 to -15
	Δ volume, %	+10.90	1 to 16
	Appearance	Good	No blistering, sloughing or disintegration
EPDM @ 120 °C (as req. by SAE J1703)	Δ hardness, IRHD	-4	0 to -10
	Δ volume, %	+0.38	0 to 10
	Appearance	Good	No blistering, sloughing or disintegration