

ILSAC GF-4

API SM With Energy Conserving Requirements as of March 2005

TEST TYPE	PURPOSE	PARAMETER	REQUIREMENT
IIIG	Oil Thickening	Kinematic viscosity increase @40°C	150%, max.
		Oil Consumption interpretability	4.65 L, max.
	Deposits - High Temp	Hot stuck rings	None
		Weighted piston deposits	3.5, min.
Wear - High Temp	Avg. cam & lifter wear	60 µm, max.	
IIIGA	Aged oil low-temperature viscosity	Apparent viscosity (MRV)	60,000 cP max (original grade or next highest), no yield stress allowable
		Yield stress	
IVA	Wear - Low Temp	Avg. cam wear	90 µm, max.
VG	Sludge - Low Temp	Avg. engine sludge	7.8, min.
		Rocker arm cover sludge	8.0, min.
		Oil screen sludge	20%, max.
	Varnish - Low Temp	Avg. engine varnish, 3pt.	8.9, min.
		Avg. piston skirt varnish	7.5, min.
		Hot stuck compression rings	None
	Wear - Low Temp	Avg. follower pin wear, cyl. 8	Rate and report
		Avg. ring gap increase, cyl. 1 & 8	Rate and report
	Additional	Cold stuck rings	Rate and report
		Oil screen debris	Rate and report
Oil ring clogging		Rate and report	
VIB	Fuel Economy	SAE Viscosity Grades	Improvement over BC 16-hr. aging 96-hr. aging
	Varnish	OW-20 and 5W-20	2.3 2.0
		OW-30 and 5W-30	1.8 1.5
		All Others	1.1 0.8
VIII	Bearing Corrosion	Bearing weight loss	26 mg., max.
	Shear Stability	10 hours stripped 100°C viscosity	Must remain in original grade

For more information, please contact:



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Bench Test Requirements as of March 2005

TEST TYPE	PURPOSE	REQUIREMENT		
Catalyst Compatibility	Phosphorus Content, ASTM D 4951	0.08% (mass) maximum		
	Sulfur Content, ASTM D 4951 or D 2622	0.5% (mass) maximum 0.7% (mass) maximum		
Wear	Phosphorus Content, ASTM D 4951	0.06% (mass) minimum		
Volatility	Evaporation Loss, ASTM D 5800	15% maximum, 1h at 250% (Note: Calculated conversions specified in D 5800 are allowed.)		
	Simulated Distillation, ASTM D 6417	10% maximum at 371°C		
High Temperature Deposits	TEOST MHT	Deposit Weight, mg 35 maximum		
Filterability	EOWTT, ASTM D 6794	with 0.6% H ₂ O 50% max flow reduction		
		with 1.0% H ₂ O 50% max flow reduction		
		with 2.0% H ₂ O 50% max flow reduction		
	EOFT, ASTM D 6795	with 3.0% H ₂ O 50% max flow reduction 50% maximum flow reduction		
Foaming Characteristics	ASTM D 892 (Option A)		Tendency	Stability*
		Sequence I	10 mL max	0 mL max
		Sequence II	50 mL max	0 mL max
		Sequence III	10 mL max	0 mL max
High Temperature Foaming Characteristics	ASTM D 6082 (Option A)		Tendency	Stability†
			100 mL maximum	0 mL maximum
Homogeneity and Miscibility	ASTM D 6922	Shall remain homogeneous and, when mixed with ASTM reference oils, shall remain miscible.		
Engine Rusting	Ball Rust Test, ASTM D 6557	Average gray value 100 minimum		

*After 10-minute settling period

†After 1-minute settling period

