



BIOSYNTHETIC
TECHNOLOGIES

Biosynthetic[®] Motor Oil

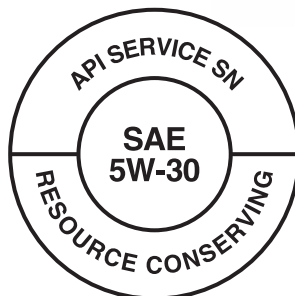
Delivering innovations for a sustainable future.

Biosynthetic Passenger Car Motor Oil is formulated using advanced additive technology and made from renewable base stocks to help protect your engine and the environment

PHYSICAL PROPERTIES

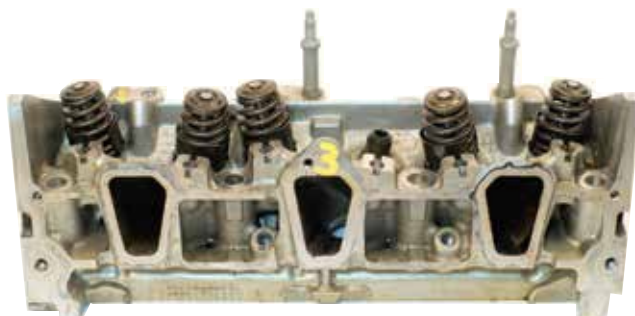
Property*	Unit	Method	5W-20	5W-30
TBN	mg KOH/g	D2896	8.3	8.9
Viscosity at 40°C	cSt	D445	42.19	54.16
Viscosity at 100°C	cSt	D445	8.0	9.68
HTHS Viscosity at 150°C	mPa-s	D4683	2.7	3.2
CCS at -30°C	mPa-s	D5293	4252	6370
MRV at -35°C	cP	D4684	17200	27800
MRV at -35°C	YS	D4684	NYS	NYS
NOACK		D5800	11	8

* Typical physical properties for the 5W-20 and 5W-30 engine oil

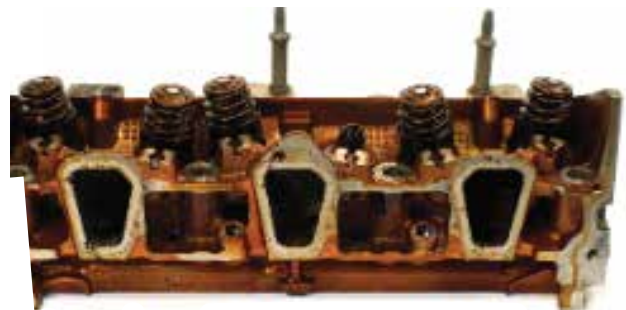


Engine Field Trial

Biosynthetic Motor Oil



Conventional Motor Oil



150,000 Mile taxi cab field trial, Las Vegas Nevada, USA. Chevy Impala 3.5 liter V6. Drain Interval 2 to 3 times recommended mileage.

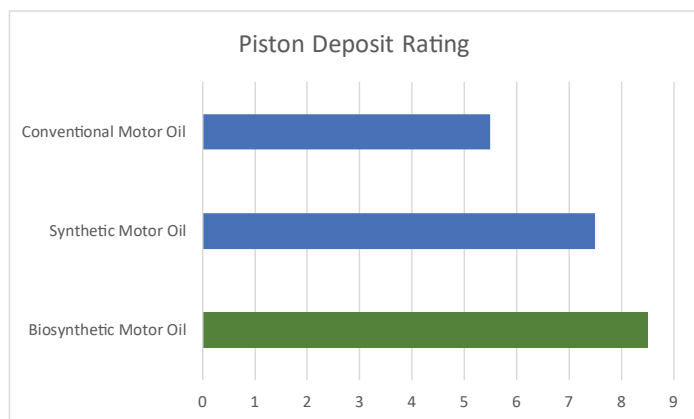
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Performance Specifications

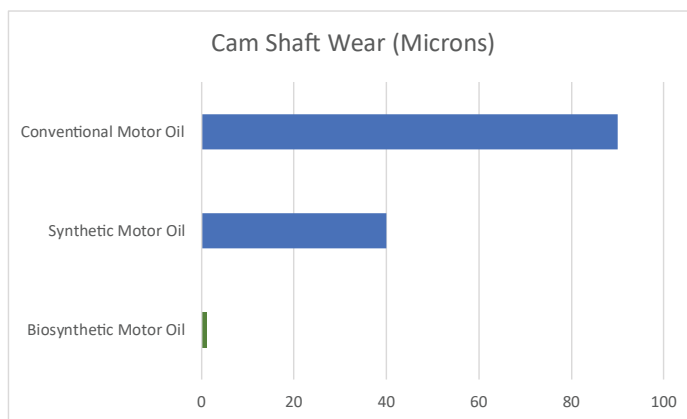


Engine Test Data 5W-30

Test	Unit	SN-RC / GF-5 Spec	BT Result
Sequence IIIG - Wear and Oil Thickening			
KV Increase at 40°C	%	150 max	56.5
Avg Weighted Piston Deposits	merits	4.0 min	8.46
Hot Stuck Rings	-	None	None
Avg Cam Plus Lift Wear	um	60 max	12.1
IIIGA	cP @ -30°C	<60000	24000
IIIGB	%	79 min	85.7
Sequence VG - Wear, Sludge, and Varnish			
Avg Engine Sludge	-	8.0 min	8.77
Avg Rocke Cover Sludge	-	8.3 min	9.5
Avg Engine Varnish	-	8.9 min	9.31
Avg Piston Skirt Varnish	-	7.5 min	8.34
Oil Screen Sludge	%	15%	1%
Oil Screen Debris	%	Rate	2%
Hot Stuck Compression Rings	-	0	0
Sequence IVA - Valvetrain Wear			
Avg Cam Wear 7 Position Avg	um	90 max	1.06
Sequence VIII - Bearing Corrosion and Shear Stability			
Bearing Weight Loss	mg	26 max	20.5
10 Hour Stripped KV @ 100°C	cSt	9.3 min	9.52
Sequence VID - Fuel Efficiency SAE 5W-30			
FEI Summary	%	1.9 min	3.3
FEI 1 After 16 Hours Aging	%	-	1.57%
FEI 2 After 100 Hours Aging	%	0.9 min	1.73%



Higher is Better



Lower is Better

Typical properties depicted on this document are average values only and do not constitute a specification. Minor variations that do not affect product performance are to be expected during normal manufacture, and at different blending locations. Product formulations are subject to change without notification.