Biosynthetic® Formulations: Motor Oil

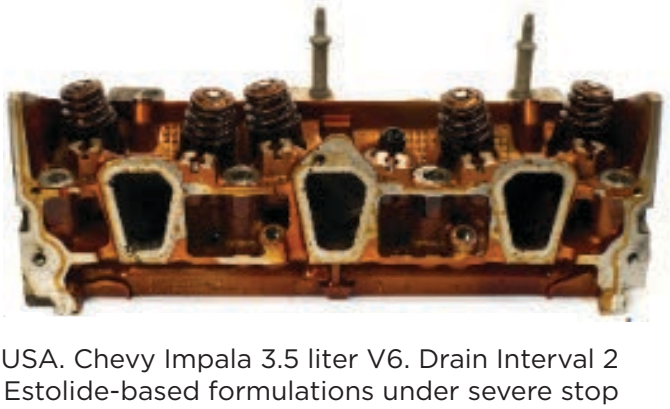
Delivering innovations for a sustainable future.

Biosynthetic Passenger Car Motor Oil is formulated using advanced additive technology and made from the renewable biosynthetic® base oils to help protect your engine and the environment. This formulation serves as a demonstration for what is possible when using biosynthetic base oils.

ENGINE FIELD TRIAL RESULTS

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 reccommended mileage. Engines run on Estolide-based formulations under severe stop and go conditions had far less varnish.

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

For more info contact us at **info@biosynthetic.com** or visit our website: **www.biosynthetic.com**
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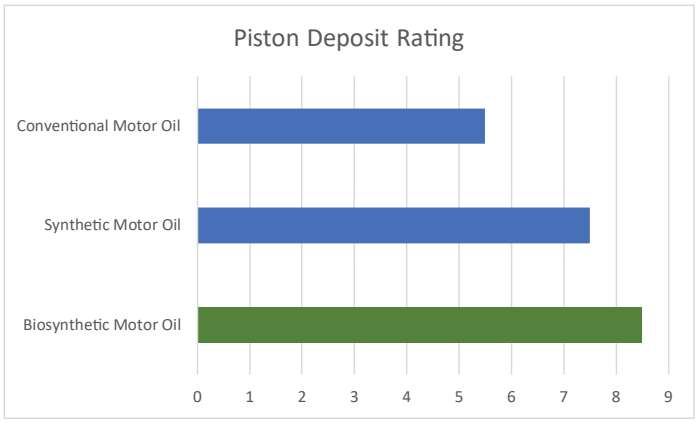
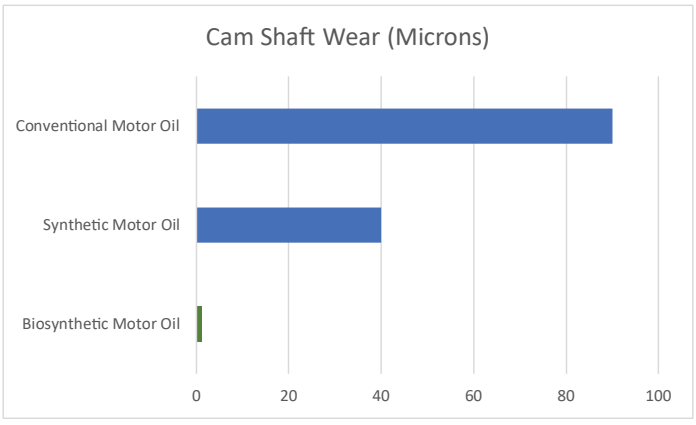
BIOSYNTHETIC®
TECHNOLOGIES

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.

BIOSYNTHETIC® TECHNOLOGIES