Petroleum Quality Institute of America

The Petroleum Quality Institute of America (PQIA) is an independent resource for information and insights on the quality and performance of lubricants in the marketplace. Our mission is to serve the consumer of lubricants by reporting on the quality and integrity of lubricants in themarketplace.

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Supporters

Amsoil Signature Series 5W-30

Amsoil Inc. Superior, WI

Purchased in: Parkway Auto & Tire, Phillipsburg, NJ
Date of purchase: 3-6-2012

The results of the tests conducted on this sample meet the requirements of an API SN and ILSAC GF-5, SAE 5W-30 Engine oil.

Whereas the manufacturer of this oil recommends it for use in API Service Categories SN and SM, ILSAC GF-5 and GF-4, and GM dexos1™ applications, the product is not labeled as licensed by the API or GM.

PETROLEUM QUALITY INSTITUTE OF AMERICA TEST PROGRAM The ranges and averages shown in the table below are for current specifications (API SN GF-5). Comparison of sample tested is shown at right.			
PHYSICAL TESTS	Standard/ranges-b	Average-e	*Test Results*
TBN, mg KOH/g, (ASTM D2896)	6.1 to 8.3	7.2	12.8
Viscosity @ 100ºC, cSt, (ASTM D445)	9.3 to 12.5	10.5	10.7
Viscosity @ 40ºC, cSt, ASTM D445	55.8 to 65.2	61.88	60.5
Viscosity Index (ASTM D2270)	156 to 169	160	171
Viscosity @ -30ºC mPa s (cP) (ASTM D5293)	6,600 Max	5,775	3,398
Volatility, mass % loss, 1 hr, @ 250ºC (ASTM D5800)	15 Max	14.2	7.6
ELEMENTAL ANALYSIS-c			
Additives			
Nitrogen µg/g (ASTM D-5762)	599 to 990	804.2	1,208
Calcium	1,570 to 2,460	2,051	3,619
Magnesium, ppm	6 to 46	12.3	19
Phosphorus, ppm	**600 to 800**	703	701
Zinc, ppm	766 to 868	791	809
Molybdenum, ppm	<1 to 269	60	153
Barium, ppm	<1	<1	<1
Boron, ppm	<1 to 237	79	236
Silicon, ppm-d	3 to 9	5	7
Potassium, ppm	9 to 17	11	<5
Manganese, ppm	<1	<1	<1
Titanium, ppm	<1 to 114	11	<1
Sulfur, ppm	**5,000 max**	2,785	3,559
Copper, ppm	<1	<1	<1
Sodium, ppm	5 to 454	172	5
Vanadium, ppm	<1	<1	<1
Silver, ppm	<1	<1	<1
Aluminum, ppm	<1 to 3	1	4
Chromium, ppm	<1	<1	<1
Iron, ppm	<1 to 1	1	1
Nickel, ppm	<1	<1	<1
Lead, ppm	<1	<1	<1
Antimony, ppm	<1	<1	<1

Tin, ppm	<1	<1	<1

a- Click here for product label.
b- Standards, shown in yellow are established by API, SAE and others. Ranges, shown in teal, represent the high and low data for the 13 major brands of API SN ILSAC GF-5 tested in September 2011.
c-Test Method for metal analysis is ASTM D5185.
d- Although silicon is used as an antifoam additive in lubricants, concentrations above 7ppm have been linked to contamination from abrasive material,
e- Average of the 13 major brands of API SN ILSAC GF-5 tested in September 2011.

Amsoil Signature Series Oil 5W-30

The American Petroleum Institute sets forth a number of laboratory and engine tests required to meet an API SN ILSAC GF-5 performance specification. Although laboratory tests alone cannot be used to establish if an engine oil meets API SN, they can be used to determine if it doesn't.

The following is a comparison of the test results for the sample of Amsoil Signature Series 5W-30 tested with the API SN ILSAC GF-5 requirements.

Viscometrics

The viscometrics meet the required targets for a 5W-30.

Viscosity @ 100ºC, cSt, (ASTM D445)
This text is replaced by the Flash movie.

Click here for more on chart and Viscosity@100ºC,cSt

Viscosity @ -30ºC mPa s (cP) (ASTM D5293)
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Click here for about chart and Viscosity @ -30ºC

Volatility

The volatility meets the requirements for an API SN ILSAC GF-5 designation.
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Click here for more on chart and Volatilty

Phosphorus

The phosphorus content meets the requirements for an API SN ILSAC GF-5 designation.
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Click here for more on chart and phosphorus

FRONT AND BACK LABELS FROM PRODUCT TESTED