

## Engine Oil Tests Gold bullets indicate ISO/IEC 17025:2017 Accreditation

Method	Test Description	Sample Size
• ASTM D92	Flash Point and Fire Point, Cleveland Open Cup	250 mL
• ASTM D97	Pour Point	100 mL
ASTM D287	API Gravity of Crude Petroleum / Petroleum Products (Hydrometer)	250 mL
• ASTM D445	Kinematic Viscosity, 0°C and Above	125 mL
• ASTM D445	Kinematic Viscosity, 40°C or 100°C, New Oil	125 mL
• ASTM D445	Kinematic Viscosity, Below 0°C	125 mL
• ASTM D445	Kinematic Viscosity, Used or In-Service Oil	125 mL
• ASTM D664	Acid Number	50 mL
• ASTM D874	Sulfated Ash	50 g
• ASTM D892	Foaming, Sequence I - III (Specify Option A if Required)	1 L
• ASTM D892 & D6082	Foaming, Sequence I - IV (Specify Option A if Required)	1 L
ASTM D1177	Freeze Point	100 mL
ASTM D1298	Density / API Gravity, Hydrometer	350 mL
• ASTM D2270	Viscosity Index (Includes D445 at 40°C & 100°C)	125 mL
• ASTM D2896	Base Number	50 mL
ASTM D2982	Glycol-Base Antifreeze in Used Oils	20 mL
• ASTM D3524	Fuel Dilution, Diesel (Requires 250 mL of new oil and fuel)	10 mL
• ASTM D3525	Fuel Dilution, Gasoline	10 mL
• ASTM D3829	Mini-Rotary Viscosity (MRV), Single Temperature	200 mL
ASTM D4052	Specific Gravity (Includes API Gravity)	50 mL
ASTM D4287	High-Shear Viscosity Using a Cone/Plate Viscometer	10 mL
ASTM D4291	Glycol	5 mL
• ASTM D4629	Nitrogen by Chemiluminescence	30 mL
• ASTM D4683	High Temperature High Shear / TBS Viscosity, 150°C, New Oil	150 mL
• ASTM D4683	High Temperature High Shear / TBS Viscosity, 150°C, Used Oil	150 mL
ASTM D4683 Mod.	High Temperature High Shear / TBS Viscosity, Below 50°C	150 mL
ASTM D4683 Mod.	High Temperature High Shear / TBS Viscosity, Multi-Temperature, Multi-Shear	150 mL
ASTM D4683 Mod.	High Temperature High Shear / TBS Viscosity, Other Shear	150 mL
ASTM D4683 Mod.	High Temperature High Shear / TBS Viscosity, Other Temperature	150 mL
• ASTM D4684	TP-1 MRV Viscosity (Single Temperature)	100 mL
• ASTM D4739	Base Number	20 mL
ASTM D4742	Thin Film Oxidation Uptake Test (TFOUT) Gas Engine Oils	50 mL
• ASTM D4951	Elemental Analysis by Inductively Coupled Plasma, Wear Metals	10 mL
• ASTM D5133	Gelation Index	50 mL
• ASTM D5133	Scanning Brookfield Viscosity (-5°C to -40°C)	50 mL
• ASTM D5185	Elemental Analysis by Inductively Coupled Plasma (No S)	10 mL
• ASTM D5293	Cold Cranking Simulator (Single Temperature)	120 mL
ASTM D5293 Mod.	Cold Cranking Simulator (Temperature Scan)	120 mL
• ASTM D5453	Sulfur	10 mL
• ASTM D5453 & D5762	Sulfur and Nitrogen Package	20 mL
• ASTM D5762	Nitrogen	10 mL
• ASTM D5800	Noack Volatility	150 mL
ASTM D5800 Mod.	Noack Volatility, 150°C for 12 Hours	150 mL
• ASTM D6082	Foaming, Sequence IV (Specify Option A if Required)	1 L
• ASTM D6278	Kurt Orbahn Shear Stability, 30 Passes	1 L
• ASTM D6304	Water by Karl Fischer	100 mL
• ASTM D6335	Thermo-oxidation Engine Oil Simulation Test (TEOST® 33C)	250 mL
ASTM D6375	Noack Volatility by TGA	20 mL
• ASTM D6417	Simulated Distillation by Gas Chromatography	10 mL
ASTM D6425	Friction and Wear Properties of Extreme Pressure (EP) Using SRV	20 mL
ASTM D6443	Chlorine by XRF	30 mL



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Method	Test Description	Sample Size
ASTM D6557	Ball Rust Test	125 mL
● ASTM D6594	High Temperature Corrosion Bench Test at 135°C	300 mL
● ASTM D6616	High Temperature High Shear / TBS Viscosity, 100°C, New Oil	150 mL
● ASTM D6616	High Temperature High Shear / TBS Viscosity, 100°C, Other Shear	150 mL
● ASTM D6616	High Temperature High Shear / TBS Viscosity, 100°C, Used Oil	150 mL
ASTM D6794	Engine Oil Water Tolerance (EOWT)	1 L
ASTM D6795	Engine Oil Filterability (EOFT)	1 L
ASTM D6922	Homogeneity & Miscibility	300 mL
● ASTM D7097	Thermo-oxidation Engine Oil Simulation Test (TEOST MHT®-4)	50 mL
ASTM D7098	Thin Film Oxygen Uptake Test (TFOUT) Catalyst B	50 mL
● ASTM D7109	Kurt Orbahn Shear Stability - Includes 30 and 90 Passes	1 L
● ASTM D7216	GF-6 Elastomer Compatibility, ACM, Polyacrylate	1.2 L
● ASTM D7216	GF-6 Elastomer Compatibility, FKM, Fluoroelastomer	1.2 L
● ASTM D7216	GF-6 Elastomer Compatibility, HNBR, Nitrile	1.2 L
● ASTM D7216	GF-6 Elastomer Compatibility, MAC, Ethylene Acrylate	1.2 L
● ASTM D7216	GF-6 Elastomer Compatibility, VMQ, Silicone	1.2 L
● ASTM D7216	GM dexos1:2015 Elastomer Compatibility, ACM Polyacrylate	1.2 L
● ASTM D7216	GM dexos1:2015 Elastomer Compatibility, FKM, Fluoroelastomer	1.2 L
● ASTM D7216	GM dexos1:2015 Elastomer Compatibility, HNBR, Nitrile	1.2 L
● ASTM D7216	GM dexos1:2015 Elastomer Compatibility, VMQ, Silicone	1.2 L
● ASTM D7216	HDD Elastomer Compatibility, ACM, Polyacrylate	1.2 L
● ASTM D7216	HDD Elastomer Compatibility, FKM, Fluoroelastomer	1.2 L
● ASTM D7216	HDD Elastomer Compatibility, MAC, Vamac	1.2 L
● ASTM D7216	HDD Elastomer Compatibility, NBR, Nitrile	1.2 L
● ASTM D7216	HDD Elastomer Compatibility, VMQ, Silicone	1.2 L
● ASTM D8447	Thermo-oxidation Engine Oil Simulation Test (TEOST Turbo®)	250 mL
ASTM E1131	TGA Soot	5 mL
CEC L-036-90 Mod.	High Temperature High Shear Viscosity, 150°C, New Oil	150 mL
● CEC L-105	ACEA Low Temperature Pumpability	700 mL
● CEC L-109	Bio-Diesel Oxidation Bench Test, Single Run 168 Hours	1 L
● CEC L-109	Bio-Diesel Oxidation Bench Test, in Duplicate 168 Hours	1 L
● CEC L-109	Bio-Diesel Oxidation Bench Test, Single Run 216 Hours	1 L
● CEC L-109	Bio-Diesel Oxidation Bench Test, in Duplicate 216 Hours	1 L
SAVLAB CAP	Viscosity by Cone & Plate	20 mL
SAVLAB FEI	Fuel Efficiency Index (FEI)	300 mL
SAVLAB GES	GE Locomotive Specification (GE Package 1, B82-1 test)	300 mL
● SAVLAB LPYC	Density, Pycnometer	120 mL
SAVLAB PEI	Phosphorus Emissions Index (PEI) at 250°C, 1 Hour	250 mL
SAVLAB PEI 165	Phosphorus Emissions Index (PEI) at 165°C, 16 Hours	250 mL
SAVLAB PEI 165	Phosphorus Emissions Index (PEI) at 165°C, 32 Hours	250 mL
SAVLAB PEI 165	Phosphorus Emissions Index (PEI) at 165°C, 48 Hours	250 mL
SAVLAB PEI 165	Phosphorus Emissions Index (PEI) at 165°C, 64 Hours	250 mL
SAVLAB SEI	Sulfur Emissions Index, (SEI)	250 mL
SAVLAB SFACALC	Sulfated Ash, Calculated from ICP Results	10 mL
SAVLAB TBR	High Temperature Low Shear / TBR Viscosity, New Oil	150 mL
SAVLAB TBR	High Temperature Low Shear / TBR Viscosity, Other Shear	150 mL
SAVLAB TBR	High Temperature Low Shear / TBR Viscosity, Other Temperature	150 mL
SAVLAB TBR	High Temperature Low Shear / TBR Viscosity, Used Oil	150 mL
SAVLAB VLP	Viscosity Loss Profile (VLP), 20 Passes	1 L
SAVLAB VLP	Viscosity Loss Profile (VLP), 30 Passes	1 L
SAVLAB VLP	Viscosity Loss Profile (VLP), 40 Passes	1 L

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