



## IOM 2010 Database Report Structure

Field Name in Excel Workbook	Description	Field Type
REPORT NO	Primary Report and Sample Identification Number	Text
REPORT YEAR	Year Sample was collected and tested.	Text
BRAND NAME	Brand Name	Text
SUPPLIER	Supplier or Manufacturer as identified on label.	Text
SAE VIS GRADE	SAE Viscosity Grade as identified on product label.	Text
SERVICE CLASS	API Service Classification as claimed on label.	Text
OIL TYPE	Type of oil as determined by label information.	Text
ENERGY SAVING	"Energy Saving" in API Service Mark or Label claim if no "Donut"	Text
API MARK	API Certification Mark ('Donut')	Text
ILSAC MARK	ILSAC Certification Mark ('Starburst')	Text
CONTAINER ID	Can Identification Code	Text
CASE ID	Case Identification Code	Text
STATE OR PROVINCE	State or Province of Purchase	Text
COUNTRY	Country of Purchase	Text
FUEL EFFICIENCY INDEX	Viscosity-based Fuel Efficiency Index (SAVALAB V-FEI)	Numeric
ALUMINUM (AL) PPM	PPM of Aluminum by ICP (D 5185)	Numeric
ANTIMONY (SB) PPM	PPM of Antimony by ICP (D 5185)	Numeric
BARIUM (BA) PPM	PPM of Barium by ICP (D 5185)	Numeric
BORON (B) PPM	PPM of Boron by ICP (D 5185)	Numeric
CALCIUM (CA) PPM	PPM of Calcium by ICP (D 5185)	Numeric
CHROMIUM (CR) PPM	PPM of Chromium by ICP (D 5185)	Numeric
COPPER (CU) PPM	PPM of Copper by ICP (D 5185)	Numeric
IRON (FE) PPM	PPM of Iron by ICP (D 5185)	Numeric
LEAD (PB) PPM	PPM of Lead by ICP (D 5185)	Numeric
MAGNESIUM (MG) PPM	PPM of Magnesium by ICP (D 5185)	Numeric
MOLYBDENUM (MO) PPM	PPM of Molybdenum by ICP (D 5185)	Numeric
NICKEL (NI) PPM	PPM of Nickel by ICP (D 5185)	Numeric
PHOSPHORUS (P) PPM	PPM of Phosphorus by ICP (D 5185)	Numeric
SILICON (SI) PPM	PPM of Silicon by ICP (D 5185)	Numeric
SILVER (AG) PPM	PPM of Silver by ICP (D 5185)	Numeric
SODIUM (NA) PPM	PPM of Sodium by ICP (D 5185)	Numeric
TIN (SN) PPM	PPM of Tin by ICP (D 5185)	Numeric
TITANIUM (TI) PPM	<a href="#">PPM of Titanium by ICP (D 5185) New</a>	Numeric
ZINC (ZN) PPM	PPM of Zinc by ICP (D 5185)	Numeric
CALCULATED SULFATED ASH (%)	Percent Calculated Sulfated Ash	Numeric
NITROGEN (%)	Percent Nitrogen (D 5762)	Numeric
SULFUR (%)	Percent Sulfur (D 5453)	Numeric
SULFUR EMISSION INDEX	Sulfur Emission Index (SAVLAB SEI)	Numeric
BASE NUMBER (MG KOH/G)	Total Base Number (D 2896)	Numeric
TEOST 33C ROD (MG)	TEOST 33C Rod Deposit Weight (D 6335)	Numeric
TEOST 33C FILTER (MG)	TEOST 33C Filter Deposit Weight (D 6335)	Numeric
TEOST 33C TOTAL (MG)	TEOST 33C Total Deposit Weight (D 6335)	Numeric
TEOST MHT ROD (MG)	TEOST MHT Rod Deposit Weight (D 7097)	Numeric
TEOST MHT FILTER (MG)	TEOST MHT Filter Deposit Weight (D 7097)	Numeric
TEOST MHT TOTAL (MG)	TEOST MHT Total Deposit Weight (D 7097)	Numeric
TFOUT (MIN)	Minutes to Oxidation by TFOUT (D 4742), Test terminated at 500 minutes	Numeric
KINEMATIC VIS AT 40°C (CST)	Kinematic Viscosity at 40°C (D 445)	Numeric
KINEMATIC VIS AT 100°C (CST)	Kinematic Viscosity at 100°C (D 445)	Numeric
KV AT 100°C AFTER 20 PASS SHEAR (CST)	Degraded (FISST 20 Pass) Kinematic Viscosity at 100°C	Numeric

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VISCOSITY INDEX	Viscosity Index (D 2270)	Numeric
FLASHPOINT (°C)	Flashpoint Temperature (D 92)	Numeric
NOACK VOLATILITY (%)	Volatility by Noack (D 5800)	Numeric
PHOS VOLATILES (%)	Percent of Original Phosphorus Volatilized	Numeric
PHOS EMISSION INDEX	Phosphorus Emission Index (SAVLAB PEI)	Numeric
GC VOLATILITY AT 371°C (%)	Volatility at 371°C, Simulated Distillation by Gas Chromatography (D 6417)	Numeric
HTLS VIS AT 100°C (CP)	High Temperature Low Shear Viscosity at 100°C	Numeric
HTLS VIS AT 100°C AFTER SHEAR (CP)	Degraded (FISST 20 Pass) High Temp. Low Shear Viscosity at 100°C	Numeric
HTHS VIS AT 100°C (CP)	High Temperature High Shear Viscosity at 100°C (D 6616)	Numeric
HTHS VIS AT 100°C AFTER SHEAR (CP)	Degraded (FISST 20 Pass) High Temp. High Shear Viscosity at 100°C (D 6616)	Numeric
LOW SHEAR PERM VIS LOSS AT 100°C (%)	Percent of Low Shear Permanent Viscosity Loss at 100°C	Numeric
HIGH SHEAR PERM VIS LOSS AT 100°C (%)	Percent of High Shear Permanent Viscosity Loss at 100°C	Numeric
TEMP VIS LOSS AT 100°C (%)	Percent of Temporary Viscosity Loss at 100°C	Numeric
DEGRADED TEMP VIS LOSS AT 100°C (%)	Percent of Degraded Temporary Viscosity Loss at 100°C	Numeric
OVERALL VIS LOSS AT 100°C (%)	Percent of Overall Viscosity Loss at 100°C	Numeric
HTLS VIS AT 150°C (CP)	High Temperature Low Shear Viscosity at 150°C	Numeric
HTLS VIS AT 150°C AFTER SHEAR (CP)	Degraded (FISST 20 Pass) High Temp. Low Shear Viscosity at 150°C	Numeric
HTHS VIS AT 150°C (CP)	High Temperature High Shear Viscosity at 150°C (D 4683)	Numeric
HTHS VIS AT 150°C AFTER SHEAR (CP)	Degraded (FISST 20 Pass) High Temp. High Shear Viscosity at 150°C	Numeric
LOW SHEAR PERM VIS LOSS AT 150°C (%)	Percent of Low Shear Permanent Viscosity Loss at 150°C	Numeric
HIGH SHEAR PERM VIS LOSS AT 150°C (%)	Percent of High Shear Permanent Viscosity Loss at 150°C	Numeric
TEMP VIS LOSS AT 150°C (%)	Percent of Temporary Viscosity Loss at 150°C	Numeric
DEGRADED TEMP VIS LOSS AT 150°C (%)	Percent of Degraded Temporary Viscosity Loss at 150°C	Numeric
OVERALL VIS LOSS AT 150°C (%)	Percent of Overall Viscosity Loss at 150°C	Numeric
CCS VIS (CP)	Low-Temp. Viscosity by Cold Cranking Simulator at Specification Temp. (D 5293)	Numeric
CCS TEMP (°C)	SAE Grade Specification Temp. for Viscosity by Cold Cranking Simulator (D 5293)	Numeric
CCS VIS AT 0°C (CP)	Low-Temp. Viscosity by Cold Cranking Simulator at 0°C (D 5293)	Numeric
CCS VIS AT -5°C (CP)	Low-Temp. Viscosity by Cold Cranking Simulator at -5°C (D 5293)	Numeric
CCS VIS AT -10°C (CP)	Low-Temp. Viscosity by Cold Cranking Simulator at -10°C (D 5293)	Numeric
CCS VIS AT -15°C (CP)	Low-Temp. Viscosity by Cold Cranking Simulator at -15°C (D 5293)	Numeric
CCS VIS AT -20°C (CP)	Low-Temp. Viscosity by Cold Cranking Simulator at at -20°C (D 5293)	Numeric
CCS VIS AT -25°C (CP)	Low-Temp. Viscosity by Cold Cranking Simulator at -25°C (D 5293)	Numeric
CCS VIS AT -30°C (CP)	Low-Temp. Viscosity by Cold Cranking Simulator at -30°C (D 5293)	Numeric
CCS VIS AT -35°C (CP)	Low-Temp. Viscosity by Cold Cranking Simulator at -35°C (D 5293)	Numeric
VISCOELASTICITY TEMP (°C)	CCS Temperature at which viscoelasticity occurs if present (D 5293)	Numeric
TP1 VIS (CP)	Low-Temperature Pumping Viscosity by MRV-TP1 (D 4684)	Numeric
TP1 TEMP (°C)	SAE Grade Specification Temp. for Viscosity by MRV-TP1 (D 4684)	Numeric
TP1 YIELD STRESS (GRAMS)	TP1 Yield Stress if present (D 4684)	Numeric
SBT VIS (CP)	Low-Temp Viscosity by Scanning Brookfield Technique (D 5133)	Numeric
SBT TEMP (°C)	Temperature at which SBT Viscosity is determined (D 5133)	Numeric
SBT TEMP AT 60,000 CP (°C)	Temperature at which Viscosity reaches 60,000 cP by SBT (D 5133)	Numeric
SBT VIS AT -5°C (CP)	Low-Temperature Viscosity by SBT at -5°C (D 5133)	Numeric
SBT VIS AT -10°C (CP)	Low-Temperature Viscosity by SBT at -10°C (D 5133)	Numeric
SBT VIS AT -15°C (CP)	Low-Temperature Viscosity by SBT at -15°C (D 5133)	Numeric
SBT VIS AT -20°C (CP)	Low-Temperature Viscosity by SBT at -20°C (D 5133)	Numeric
SBT VIS AT -25°C (CP)	Low-Temperature Viscosity by SBT at -25°C (D 5133)	Numeric
SBT VIS AT -30°C (CP)	Low-Temperature Viscosity by SBT at -30°C (D 5133)	Numeric
SBT VIS AT -35°C (CP)	Low-Temperature Viscosity by SBT at -35°C (D 5133)	Numeric
SBT VIS AT -40°C (CP)	Low-Temperature Viscosity by SBT at -40°C (D 5133)	Numeric
SBT VIS AT -45°C (CP)	Low-Temperature Viscosity by SBT at -45°C (D 5133)	Numeric
SBT VIS AT -50°C (CP)	Low-Temperature Viscosity by SBT at -50°C (D 5133)	Numeric
GELATION INDEX	Gelation Index (D 5133)	Numeric
GELATION TEMP (°C)	Temperature at which Gelation Index is measured (D 5133)	Numeric
FOAM TENDENCY SEQ 1 (ML)	Foaming Tendency, Sequence I (D 892)	Numeric

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Field Name in Excel Workbook	Description	Field Type
FOAM TENDENCY SEQ 2 (ML)	Foaming Tendency, Sequence II (D 892)	Numeric
FOAM TENDENCY SEQ 3 (ML)	Foaming Tendency, Sequence III (D 892)	Numeric
FOAM TENDENCY SEQ 4 (ML)	Foaming Tendency, Sequence IV (D 6082)	Numeric
FOAM STABILITY SEQ 1 AT 10 MIN (ML)	Foam Stability, Sequence I, 10 minutes settling time (D 892)	Numeric
FOAM STABILITY SEQ 2 AT 10 MIN (ML)	Foaming Stability, Sequence II, 10 minutes settling time (D 892)	Numeric
FOAM STABILITY SEQ 3 AT 10 MIN (ML)	Foam Stability, Sequence III, 10 minutes settling time (D 892)	Numeric
FOAM STABILITY SEQ 4 AT 5 SEC (ML)	Foam Stability, Sequence IV, 5 seconds after air disconnect (D 6082)	Numeric
FOAM STABILITY SEQ 4 AT 1 MIN (ML)	Foam Stability, Sequence IV, 1 minute settling time (D 6082)	Numeric
FOAM STABILITY SEQ 4 AT 5 MIN (ML)	Foam Stability, Sequence IV, 5 minutes settling time (D 6082)	Numeric
FOAM STABILITY SEQ 4 AT 10 MIN (ML)	Foam Stability, Sequence IV, 10 minutes settling time (D 6082)	Numeric
FOAM SETTLING SEQ 1 (SEC)	Foam collapse time in seconds, Sequence I (D 892)	Numeric
FOAM SETTLING SEQ 2 (SEC)	Foam collapse time in seconds, Sequence II (D 892)	Numeric
FOAM SETTLING SEQ 3 (SEC)	Foam collapse time in seconds, Sequence III (D 892)	Numeric
FOAM SETTLING SEQ 4 (SEC)	Foam collapse time in seconds, Sequence IV (D 6082)	Numeric
COMMENTS	Comments and Rerun Data*	Text

\* If test results do not meet the specifications for the service categories and SAE grade associated with the sample, the sample is retested for confirmation and rerun results are reported.

† This symbol in Comments indicates that retesting confirms that the result does not meet the specification limits of the SAE grade and/or service category claims on the label, but it is within the range of reproducibility of the ASTM test method.

#### Units of Measurement:

C° = Celsius  
 CP = centipoises  
 CST = centistokes  
 MG = milligrams  
 ML = milliliters  
 % = percent  
 SEC = seconds  
 PPM = parts per million

#### Other Abbreviations in IOM Reports:

N/A = Not Applicable - Test is not applicable to sample SAE grade.  
 N/D = Not Determined - A reason will be provided in COMMENTS section if a result could not be determined. N/D will also appear for TEOST MHT with heavy-duty SAE grades and straight grades because IOM has not conducted TEOST MHT testing on these samples.