



<b>SURFACE VEHICLE STANDARD</b>	<b>J300®</b>	<b>APR2021</b>
	Issued	1911-06
	Revised	2021-04
Superseding J300 JAN2015		
Engine Oil Viscosity Classification		

## RATIONALE

This revision includes an additional acceptable method for determination of low shear rate kinematic viscosity at 100 °C, ASTM D7042. The inclusion of an additional method can enable engine oil producers to improve logistics and quality assurance.

The equivalence of ASTM D445 and bias-corrected ASTM D7042 in determination of kinematic viscosity at 100 °C for a wide variety of engine oil formulations within the viscosity range covered by the current SAE J300 Standard has been demonstrated in the ASTM Research Report RR:D02-1741 and the ASTM Research Report RR:D02-1931.

### 1. SCOPE

This SAE Standard defines the limits for a classification of engine lubricating oils in rheological terms only. Other oil characteristics are not considered or included.

### 2. REFERENCES

#### 2.1 Applicable Documents

[This is a preview - click here to buy the full publication](#)

The following publications, otherwise indicated, the latest issue of SAE publications shall apply.

#### 2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), [www.sae.org](http://www.sae.org).

SAE J1510 Lubricants for Two-Stroke-Cycle Gasoline Engines

SAE J1536 Two-Stroke-Cycle Engine Oil Fluidity/Miscibility Classification

Covitch, M., Brown, M., May, C., Selby, T. et al., "Extending SAE J300 to Viscosity Grades below SAE 20," SAE Int. J. Fuels Lubr. 3(2):1030-1040, 2010, <https://doi.org/10.4271/2010-01-2286>.

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[https://www.sae.org/standards/content/J300\\_202104](https://www.sae.org/standards/content/J300_202104)

### 2.1.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, [\\_\\_\\_\\_\\_](#)

ASTM D97	Standard Test Method for Pour Point of Petroleum Oils
ASTM D445	Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)
ASTM D2500	Standard Test Method for Cloud Point of Petroleum Oils
ASTM D3244	Standard Practice for Utilization of Test Data to Determine Conformance with Specifications
ASTM D3829	Standard Test Method for Predicting the Borderline Pumping Temperature of Engine Oil
ASTM D4683	Standard Test Method for Measuring Viscosity at High Temperature and High-Shear Rate by Tapered Bearing Simulator
ASTM D4684	Standard Test Method for Determination of Yield Stress and Apparent Viscosity of Engine Oils at Low Temperature
ASTM D4741	Standard Test Method for Measuring Viscosity at High Temperature and High-Shear Rate by Tapered-Plug Viscometer
ASTM D5133	Standard Test Method for Low Temperature, Low Shear Rate, Viscosity/Temperature Dependence of Lubricating Oils Using a Temperature Scanning Technique
ASTM D5293	<div style="border: 2px solid blue; padding: 5px; display: inline-block;">This is a preview - click here to buy the full publication</div> -30 and -5 °C Using the _____
ASTM D5481	Standard Test Method for Measuring Apparent Viscosity at High-Temperature and High-Shear Rate by Multicell Capillary Viscometer
ASTM D7042	Standard Test Method for Dynamic Viscosity and Density of Liquids by Stabinger Viscometer (and the Calculation of Kinematic Viscosity)

### 2.1.3 Other Publications

CEC L-36-90	The Measurement of Lubricant Dynamic Viscosity Under Conditions of High Shear
CRC Report No. 409	Evaluation of Laboratory Viscometers for Predicting Cranking Characteristics of Engine Oils at 0 °F and -20 °F, April 1968

### 2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

#### 2.2.1 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, [\\_\\_\\_\\_\\_](#)

ASTM DS 62	The Relationship Between High-Temperature Oil Rheology and Engine Operation - A Status Report
ASTM STP 1068	High-Temperature, High-Shear Oil Viscosity - Measurement and Relationship to Engine Operation
ASTM STP 1143	Low-Temperature Lubricant Rheology: Measurement and Relevance to Engine Operation