

## Viscosity Classification of Engine Oil by Society of Automotive Engineers (SAE)

### Viscosity classification of engine oil:

SAE J300-2007 (i.e. the following table), viscosity classification by SAE, includes “W” and the other grades. Related to low temperature startup, the “W” grade focuses on the minimum pumping temperature of engine oil and the viscosity under 0°C. The other grades just indicate the viscosity at 100°C. Engine oils conforming to both “W” and other grades are called multi-grade oils. Since the classification just marks the upper limit in range of viscosity at low temperature, the engine oil of lower “W” grade shall accord with the viscosity requirement of any engine oil with higher “W” grade. That is, engine oil “10W” shall meet the viscosity requirements of that of “15W”, “20W” or “25W”.

### Viscosity grade of engine oil, SAE J300-2001

SAE viscosity grade	Kinematic viscosity at low temperature CP Max.	Boundary pumping viscosity CP Max.	100°C Kinematic viscosity		High temperature and high shear viscosity CP(150°C, 106s-1) Min.
			Min.	Max.	
0W	6250 (-35°C)	6000 (-40°C)	3.8	---	---
5W	6600 (-30°C)	6000 (-35°C)	3.8	---	---
10W	7000 (-25°C)	6000 (-30°C)	4.1	---	---
15W	7000 (-20°C)	6000 (-25°C)	5.6	---	---
20W	9500 (-15°C)	6000 (-20°C)	5.6	---	---
25W	13000 (-10°C)	6000 (-15°C)	9.3	---	---
20	---	---	5.6	<9.3	2.6
30	---	---	9.3	<12.5	2.9
40	---	---	12.5	<16.3	2.9 (1)
40	---	---	12.5	<16.3	3.7 (2)
50	---	---	16.3	<21.9	3.7
60	---	---	21.9	<26.1	3.7

- (1) SAE grade 0W-40, 5W-40 and 10W-40
- (2) SAE grade 15W-40, 20W-40, 25W-40 and 40