2.3 Mineral oils

Figure 2.4 ISO 3448 ranges for 95 KVI oils with approximate SAE limits

Note 1: SAE 5, 10, 20, 75 and 80 W are classified by viscosities measured at −18°C (0°F) 95 KVI oils without pour point depressant normally have pour points of −10°C. The lines have therefore been extrapolated to indicate the SAE classes into which they would fall with pour points below −18°C.

Note 2: In addition to the minimum limits for kinematic viscosity at 100°C indicated in dynamic units, the SAE Winter Grades have maximum dynamic viscosities in mN/s/m² of 6000 at −5°C for 25 W, 4500 at −10°C for 20 W and 3500 at −15°C for 15 W as shown; SAE 10 W, 5 W and 0 W have maximum 3500 at −20°C, 3500 at −25°C and 3250 at −30°C respectively. There are also limits for the Borderline Pumping Temperature by ASTM D3293 ranging from −10°C to −35°C.

The Winter Grades of automotive gear lubricants are limited by the maximum temperature at which the viscosity is 15000 mN/s/m² ranging from −40°C for SAE 75 W to −12°C for 85 W in addition to the minimum kinematic viscosity limits at 100°C indicated in dynamic units in the figure.