

## GENERAL REFERENCE DATA

The general reference information provided on the following pages will familiarize you with the different viscosities of oil that are commonly handled in our industry. The “ISO Viscosity Grade Number Table” provides a list of common ISO grades and the viscosity ranges within each ISO grade.

The second chart is intended to give you an idea of some common fluid and material viscosities that will allow you to relate everyday materials to motor oils.

Generally, viscosity is a measure of a fluid's resistance to flow and can be measured in various different units such as centipoise (cPs), which is a measure of dynamic or absolute viscosity and

kinematic viscosity which is measured in units of centistoke (cSt) Kinematic viscosity is the ratio of absolute or dynamic viscosity to density and can be obtained by dividing the absolute viscosity of a fluid (cPs) by its density. An easy rule of thumb for typical oils, use a density of 0.90, therefore as an example if an ISO 100 oil (30 wt. engine oil) has an absolute viscosity of 267 cPs at 70° F, it would have a kinematic viscosity of 296.6 cSt.

Another common unit of measure for viscosity is Saybolt universal seconds (SUS or SSU), it is a measure of kinematic viscosity, it's the time that a volume of 60 cm<sup>3</sup> of oil takes to flow through a calibrated tube at a controlled temperature.

### ISO Viscosity Grade Number Table:

Viscosity range expressed in centistokes (cSt) at 40°C

ISO #	Mid-Point	Minimum	Maximum
2	2.2	1.98	2.42
3	3.2	2.88	3.52
5	4.6	4.14	5.06
7	6.8	6.12	7.48
10	10	9	11
15	15	13.5	16.5
22	22	19.8	24.2
32	32	28.8	35.2
46	46	41.4	50.6
68	68	61.2	74.8
100	100	90	110
150	150	135	165
220	220	198	242
320	320	288	352
460	460	414	506
680	680	612	748
1000	1000	900	1100
1500	1500	1350	1650

### Approximate Viscosities of Common Materials

(At Room Temperature-70°F) \*

Material	Viscosity in Centipoise
Water	1 cps
Milk	3 cps
SAE 10 Motor Oil	85-140 cps
SAE 20 Motor Oil	140-420 cps
SAE 30 Motor Oil	420-650 cps
SAE 40 Motor Oil	650-900 cps
Castrol Oil	1,000 cps
Karo Syrup	5,000 cps
Honey	10,000 cps
Chocolate	25,000 cps
Ketchup	50,000 cps
Mustard	70,000 cps
Sour Cream	100,000 cps
Peanut Butter	250,000 cps