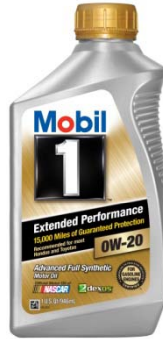


Multi Grade Oils- What does the "W" Mean?

Tip of the Week



Grades:

The [Society of Automotive Engineers \(SAE\)](#) has established a numerical code system for grading motor oils according to their [viscosity](#) characteristics. SAE viscosity gradings include the following, from low to high viscosity: 0, 5, 10, 15, 20, 25, 30, 40, 50 or 60. **The numbers 0, 5, 10, 15 and 25 are suffixed with the letter W, designating they are "winter" (not "weight") or cold-start viscosity, at lower temperature.** The document SAE J300 defines the viscometrics related to these grades. [Kinematic viscosity](#) is graded by measuring the time it takes for a standard amount of oil to flow through a standard orifice, at standard temperatures. The longer it takes, the higher the viscosity and thus higher SAE code.

The SAE has a separate viscosity rating system for gear, axle, and manual transmission oils, SAE J306, which should not be confused with engine oil viscosity. The higher numbers of a gear oil (e.g., 75W-140) do not mean that it has higher viscosity than an engine oil.

Single-grade

A single-grade engine oil, as defined by SAE J300, cannot use a polymeric [Viscosity Index Improver](#) (also referred to as Viscosity Modifier) additive. SAE J300 has established eleven viscosity grades, of which six are considered Winter-grades and given a W designation. The 11 viscosity grades are 0W, 5W, 10W, 15W, 20W, 25W, 30, 40, 50, and 60. These numbers are often referred to as the "weight" of a motor oil, and single-grade motor oils are often called "straight-weight" oils.

Multi-grade

The temperature range the oil is exposed to in most vehicles can be wide, ranging from cold temperatures in the winter before the vehicle is started up, to hot operating temperatures when the vehicle is fully warmed up in hot summer weather. A specific oil will have high viscosity when cold and a lower viscosity at the engine's operating temperature. The difference in viscosities for most single-grade oil is too large between the extremes of temperature. To bring the difference in viscosities closer together, special [polymer](#) additives called [viscosity index improvers](#), or VIIs are added to the oil. These additives are used to make the oil a *multi-grade* motor oil, though it is possible to have a multi-grade oil without the use of VIIs. The idea is to cause the multi-grade oil to have the viscosity of the base grade when cold and the viscosity of the second grade when hot. This enables one type of oil to be used all year. In fact, when multi-grades were initially developed, they were frequently described as *all-season oil*.

The SAE designation for multi-grade oils includes two viscosity grades; for example, *10W-30* designates a common multi-grade oil. The first number '10W' is the viscosity of the oil at cold temperature and the second number is the viscosity at 100 °C (212 °F). The two numbers used are individually defined by SAE J300 for [single-grade](#) oils.

For More information: Contact your Lard Oil Territory Manager or visit <http://www.lardoil.com/contact-us.aspx>