



# CAT Products, Inc

## Technical Service Bulletin

Bulletin #: 00074

Manufacturer: All

Vehicle: All

Service: Gear Oils

### Understanding Gear Oil Weights

Once upon a time, choosing the right oil was easy: Engine oil was always 10w-40; transmission oil was Type F for Fords, Dexron for everything else. And there was just one gear oil for, well, everything.

Today? Not by a long shot. We have dozens of choices for every type of fluid in today's cars and trucks... including gear oil. But, as it turns out, choosing the right gear oil might be easier than you could have imagined.

### Understanding the Numbers

Before we discuss which oil is right for your shop, it's important to understand the weight designations. Most gear oils come with multigrade ratings, such as 80w-90 or 75w-140. But what do those numbers mean?

They're a designation of *viscosity*, or how thick the oil is. Generally speaking, the higher the number, the thicker, or more viscous, the oil. So 80-weight oil will be less viscous than 140-weight oil.

The reason for two numbers? That's for multigrade oils, which provide different protection based on temperature. The first number is the weight rating when the oil is cold; the second indicates the weight when the oil is hot.

So 80w-90 will provide the viscosity of 80-weight oil when it's cold, and will provide the protection of 90-weight oil after it warms up.

### Which Oil Should I Use?

Okay, so now we know what the numbers mean. But if you check the applications, you'll see there are a lot of different gear oils being used.

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That's okay — CAT Products offers four different grades of gear oil, to cover all those applications:

80w-90 organic	4452K
75w-90 synthetic	4453K
85w-140 organic	4454K
75w-140 synthetic	4455K

The trick is to choose an oil that meets the manufacturer's requirements. Generally, that means using an oil that's at or *below* the cold weight requirement, to prove that it provides adequate flow in cold temperatures.

And it should have a hot spec that's at or *above* the high temperature weight requirement, to make sure it remains viscous enough at high temperatures.

In most cases, 75w-140 will provide adequate flow at the lowest temperatures, while maintaining more than enough viscosity once it reaches normal operating temperature.

It even includes an additive package that makes the 75w-140 synthetic perfect for use with limited-slip differentials, without having to add a friction modifier.

However, in extreme cold temperatures, heavier gear oils can interfere with the shifts in a manual transmission. In that case, you'll want to stick to the lighter recommended grades.

In addition, some differentials and manual transmissions require engine oil or automatic transmission fluid instead of gear oil. Always check the manufacturer's recommendation before adding any fluid to the vehicle, to make sure you're using the recommended type and weight.

But whatever weight gear oil you're looking for, there's only one name you need to remember: CAT Products!