

LUBE

TECHNI-GRAM



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VISCOSITY INDEX...NATURAL VERSUS ARTIFICIAL

The following is the third and final in the series of highlights from previously printed articles comparing paraffinic and naphthenic base stocks:

In previous Techni-grams, we have discussed the differences between paraffinic and naphthenic base oils. We have pointed out that paraffinic base oils are superior to naphthenic in several important performance properties: viscosity index, oxidation resistance, flash point etc. We have also discussed the meaning of viscosity index. It was pointed out that a paraffinic oil with a high viscosity index in the range of 95-100 out performs all lower viscosity index paraffinic oils as well as all naphthenic oils.

Today, modern science and technology have added a new twist to the term viscosity index which can cause confusion to customers. When we at Southwestern talk about high viscosity index paraffinic base stock used in the SWEPCO formulation, we mean a natural high viscosity index and not an artificial high viscosity index.

Artificial high viscosity index can be achieved by adding viscosity index improvers to low or medium viscosity index oils.

When this is done, one should keep in mind that only the viscosity index is altered...not the oxidation resistance, thermal stability or flash point. Also, increasing the viscosity index of a lower quality base stock oil does not change the basic chemical structure of the oil; it will remain naphthenic or a mix of naphthenic and paraffinic regardless of its increased viscosity index.

Furthermore, the question of stability under normal operating conditions should be raised. How stable is the viscosity index improver? How long will the oil remain within a high viscosity index range?

We can find products offered to the market claiming to be high viscosity index paraffinic oils, but they fail to mention the fact that the high viscosity index is achieved through artificial means. At SWEPCO, when we talk about high viscosity index paraffinic oil, we mean a natural 95-100 viscosity index paraffinic oil. Any oil with similar or higher viscosity index achieved through artificial means is a lower performance oil.



... to keep it running

A lot of manufacturers use “low” high viscosity index paraffinic oil, something like 80-90 viscosity index and then artificially raise it to 95-100 index and claim to be using the same base stock as SWEPCO. This is a false pretense. The fact remains that SWEPCO oil offers better oxidation resistance and stability. There is no worry about degradation or shearing of the viscosity index improver because our oil is natural and stable.

Of course, any time a multi-grade oil is manufactured, viscosity index improvers, which are high-molecular weight polymers, must be used. These high-molecular weight polymers are added to lighter-viscosity base oils to improve the viscosity-temperature properties and raise the viscosity of the base oil. While V.I. improvers are used to make multi-grade automotive and industrial lubricants, it is important to recognize that these polymers are additives and they will deplete with usage. The key to extending the life of a multi-graded lubricant, and to providing superior performance and protection in areas such as oxidation resistance and stability, lies in starting with a natural high viscosity index base oil and not an artificial high viscosity index base oil. As we have stated time and time again, you simply cannot build a superior product by starting out with an inferior base oil!

In summary, SWEPCO’s commitment to quality prevents us from relying on artificial means to achieve good numbers. Our numbers reflect performance and quality and not mere lab test. The value-added economy of our products is achieved through long term superior performance and not by the unit cost. It is true economy and value.