

**LUBE**

# TECHNI-GRAM



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## PARAFFINIC BASE STOCKS

*The following is a continuation of highlights from previously printed articles comparing Paraffinic versus Napthenic base stocks:*

Previously, we have discussed the chemistry of petroleum. A great deal of emphasis was put on the difference between Paraffinic and Napthenic base stock and the fact that Paraffinic oils are superior to Napthenic in several important categories: viscosity index, oxidation resistance and the flash point.

In this article, we will discuss the specific benefits of Paraffinic base oils.

Paraffinic oils are classified into three categories, based on their viscosity indexes. These three are High Viscosity Index (HVI), Medium Viscosity Index (MVI) and Low Viscosity Index (LVI). The rate at which an oil changes viscosity with a rise or drop in temperature is designated by a comparative number called Viscosity Index (VI). A low viscosity index signifies a relatively large change in viscosity with temperature, while a high viscosity index shows a relatively small change in viscosity with temperature. A VI of 100 indicates that an oil with this value would have much less tendency to “thin out” at higher temperatures or “thicken up” at lower temperatures than oils having a VI of 0.

*The High Viscosity Index is characterized by having a viscosity index of 95 or higher, and depending on the weight, a high flash point of 400-600°F.*

*The Medium Viscosity Index is characterized by having a medium viscosity index ranging from 60 to 70, and depending on the weight, a flash point of 300-500°F.*

*The Low Viscosity Index is characterized by having a viscosity index ranging from 40 to 50, and depending on the weight, a flash point of 300-450°F.*

Performance wise, the High Viscosity Index oils offer the best cold start, high temperature performance, as well as much better stability and oxidation resistance.



*... to keep it running*

Price wise, the High Viscosity Index oils are most expensive. The per gallon cost runs about 25% higher than Medium Viscosity Index oils and about 40% higher than the Low Viscosity Index oils.

Over the years, Southwestern has been contacted by numerous refiners offering paraffinic base stocks. One refiner offered their “High VI” oil which had a viscosity index of 85. They offered this oil at a 30% decrease of what we pay for our standard 95+ High Viscosity Index oil. Offers such as this can be very attractive and the temptation to cut down the cost of our raw material and, consequently, our selling price was great...especially in times of trying to control prices. However, the performance we could expect from products formulated with this base stock would be substantially lower than our standard formula. SWEPCO’s cost effectiveness would suffer.

Our commitment to quality products and to continuously use the best raw materials prevent us from taking a step such as this one. Our commitment to quality will always take precedent as quality means economy. In every industry there is a name for *QUALITY*, in lubrication, it’s SWEPCO!

	VI	FLASH POINT
High Viscosity Index	95+	400° - 600°F
Medium Viscosity Index	60 - 70	300° - 500°F
Low Viscosity Index	40 - 50	300° - 450°F