

Group I Still Valuable in Shifting Market

BY WILL BEVERINA

CHICAGO – API Group II base oil has overtaken Group I in terms of global production capacity and will likely continue to distance itself in coming years, but Group I oils still offer unique properties that will keep them relevant, an industry insider said at a conference here last week.

This year marked the first time that Group I was replaced as API grade with the largest share of global capacity. Analysts expect it will be further hurt by the looming IMO 2020 regulation, which will put low-sulfur byproducts of Group II production at a pricing advantage over their Group I counterparts.

“This all may lead you to the assumption that Group I base stocks are going away,” Tim Nadasdi, product development advisor for ExxonMobil Fuels and Lubricants Co., said Sept. 10 at the North American Industrial Lubricants Congress. “But I think that’s not the case. Group I is not going away.”

Group II and Group III oils are preferred over Group I in formulation of modern engine oils, due to their lower viscosities, better oxidative stability and lower volatility. But Group I base stocks have advantages in industrial applications, including greases, marine applications, metalworking and waxes.

Base oils impact thickener content in grease, and influence properties like water resistance, dropping point and tendency to harden. Using Group I base stocks can lower thickener content and give the grease desired structural properties that other base stocks can’t while also being cost effective. Nadasdi pointed out the most expensive component in grease is the thickener.

Analysts expect the shift to Group II oils

to be reinforced in the wake of the upcoming IMO 2020 regulations, which will lower the sulfur cap in marine fuel from 3.5 percent to 0.5 percent. High-sulfur byproducts of Group I base oil production that presently go into marine fuels will have to find another use, something refiners of that grade could struggle with. But that doesn’t necessarily mean refiners must abandon the industry, said Nadasdi. Even though the sulfur cap is significantly lowered, high-sulfur fuels can still be used in ships that have scrubbers on them, for example.

“I think the one message everyone needs to understand is that there will be no one-fuel future, there’s going to be a multi-fuel future when it comes to the marine industry,” he said. “In marine applications, you’re still going to have Group I base stocks be the main base stocks of the future.”

Water-based products account for 70 percent of metalworking fluids, and Group I oils provide an advantage over other grades in emulsibility and extreme pressure protection due to higher sulfur levels.

Group I plants have another advantage insofar that they produce wax, which Group II and III plants do not. In recent years, wax demand has slightly waned alongside Group I production. Though some supply has been made up through alternatives such as synthetic waxes, ExxonMobil projects a 20,000 barrel per day gap between demand and supply. “That’s a very large gap, so there’s going to be a large driver for Group I production just for waxes,” said Nadasdi.

As far as global trends for Group I market share, Nadasdi said he believes the decline will level off. “You need a

Photo courtesy of ExxonMobil



ExxonMobil’s base oil plant at its refinery in Baton Rouge, Louisiana, has 16,000 barrels per day of API Group I production capacity.

certain amount of Group I for certain applications,” he continued, including those applications where solvency, viscosity, shear stability and extreme pressure are important factors in the formulation.

Group II and Group III will continue to have their advantages as well, so lubricant formulators will need all three grades, especially considering the economics of trying to replace cheaper Group I oils in established formulations.

“If you’re a lube manufacturer with a broad slate of products, and you want to have the best performing products at the lowest cost for yourself, you’re going to need to have base stock suppliers that give you a reliable supply of all of those grades,” he concluded. ♠