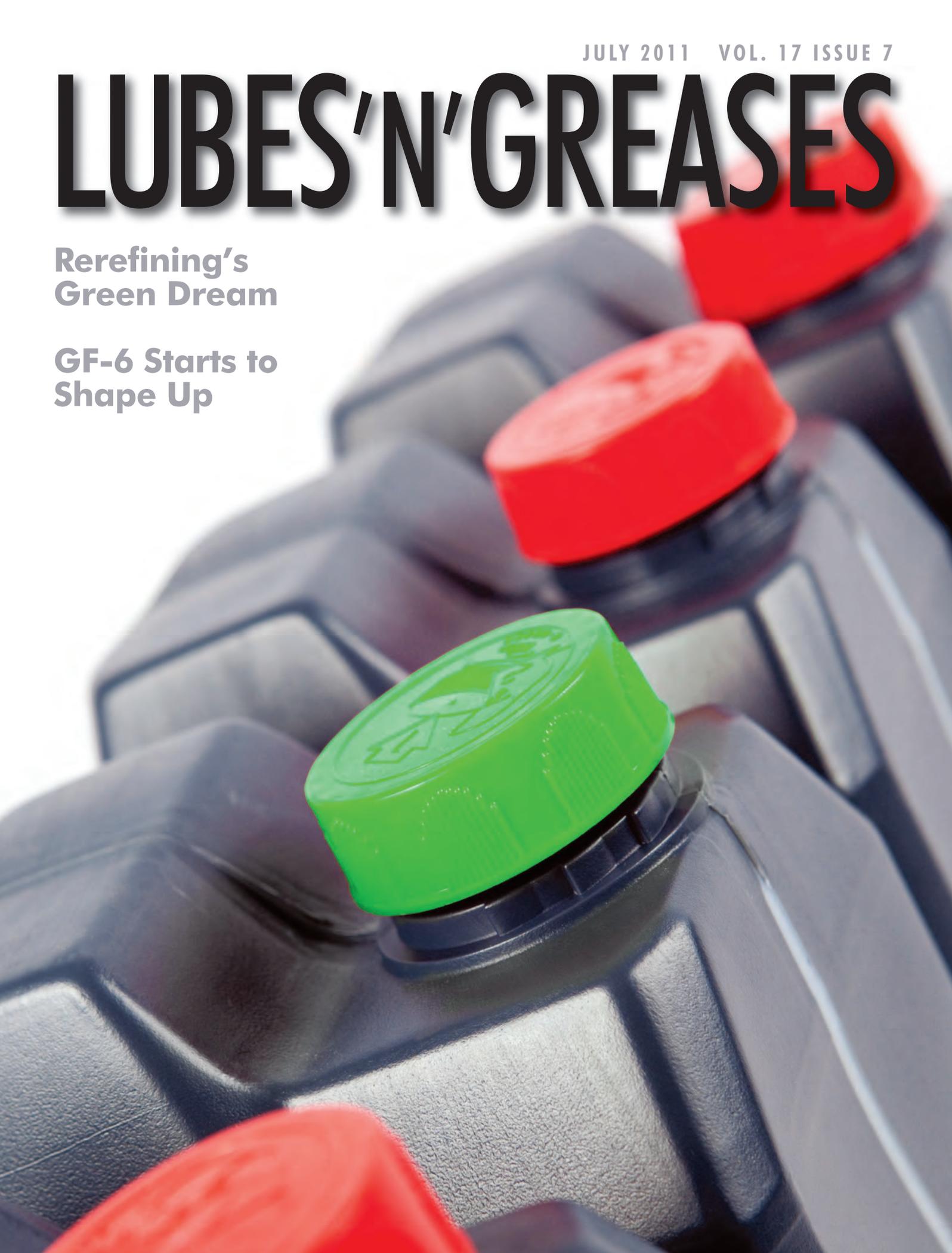


JULY 2011 VOL. 17 ISSUE 7

# LUBES'N'GREASES

**Rerefining's  
Green Dream**

**GF-6 Starts to  
Shape Up**



# Sweet-and-Sour Days for Food Grade Lubes

BY LISA TOCCI



V

ery few food companies in the world's developing markets use food grade lubricants in their processing and packaging facilities. Food grade lube users are a minority in more advanced regions, too. But that's changing due to the global emphasis on food safety, say a number of lubricant suppliers. Market forces as well are leading food processors to rethink their lubrication needs, one plant or company at a time.

And that, says Graham Gow of Axel Christiernsson, may be the biggest dilemma facing lubricant companies that want to invest in this market. While the upfront costs to formulate,

register, produce and market food grade lubes are substantial, participants risk seeing a slow, steady simmer rather than effervescent growth.

Gow, who is business development manager at the Gothenburg, Sweden-based grease manufacturer, explained that despite the growth of multinationals like Nestle and PepsiCo, the world's food industry remains highly fragmented and "scattershot." From farm to table, almost every link in the lube-buying chain must be courted, educated and supplied individually.

Axel makes food grade products for the private-label market at its Christol

Grease division in Niort, France. These are in strong demand, Gow said, especially among food manufacturers who want to demonstrate a commitment to global standards. "We have private-label customers in China who import our greases, and are adamant that they want the 'Made in France' label on the product. Food processors there see this as reassurance that the product is made to Euro standards and is authentic."

## Worth the Dough?

Like others, Axel Christiernsson has been wondering if food grade lubes merit more of its attention. The com-

pany does not sell grease directly to end users but only to private-label marketers, including many major oil brands. For a clearer picture, Axel commissioned a study of the market's mechanisms from David Whitby of Pathmaster Marketing in the U.K. Gow shared some of the study's key findings with *Lubes'n'Greases*, including:

- Food grade grease is a local market, not a global one. Food processors tend to buy from local lube companies.
- Western Europe and North America are the two biggest regions where food grade lubes are used. In Europe, the country leaders in order of size are the

U.K., Germany, France and Spain. Central and South America, Asia, the Middle East and Africa do not use them yet, but Asia will see the best growth, as its food processors target more export markets.

- Food processing companies want “lubrication and advice,” not just greases and lubricants.
- Most small and medium-size food processing companies today do not use food grade greases.
- Not only do most users source locally, but each plant’s production manager tends to make the lube purchasing decisions — an important finding, said Gow.

All this makes the food processing industry a hard slog for the majors, who tend to like high-volume lube markets, not a gantlet of thousands and thousands of picky consumers, said Gow. This has led many majors to exit the market, the latest example being Shell Lubricants, which on Oct. 1 sold its entire food grade business to Fuchs

Petrolub AG. ExxonMobil remains in the thick of things, and nimble independents such as Kluber Lubrication and its Summit Lubricants arm, Fuchs Lubritech, Royal Manufacturing, Lubriplate, Anderol and others are also faring well. Still, these smaller companies lack the instant recognition of a major global brand.

“Right now, we’re not sure what it all means for us,” Gow conceded. “There’s an opportunity there for the little guy to bloom, but many don’t know the technology. And our biggest customers, the majors, are not involved much in this market. We undertook the study because we bought Christol about five years ago, and we are nearly at capacity for that facility. So the question for us is, should we invest in food grade more?”

#### Raring to Go

As Axel mulls that over, Bill Mallory’s gut feeling is that food grade lubes merit a thumbs-up. President and owner of Tulsa, Okla.-based Royal

Manufacturing, he also sees increasing demand for lubricants that help assure food safety, especially in countries where food processors are trying to reach global markets with their edibles.

“There’s more awareness worldwide with problems with food contamination. The whole world is looking at protecting the food supply,” he said. “Users are responding to education, and that’s driving them to use food grade lubes as well.”

Earlier this year Royal’s R&D director for grease, Anoop Kumar, visited customers in Dubai, India and South America, “and we found in many places industry is moving to food grade. But not always,” he said. “I visited a sugar mill where they were using an asphaltic grease on the open gears that turn the crushers, and there was no way the grease wouldn’t contaminate the sugar. In cases like these, the food producer cannot export to the United States or to Europe, so they want to upgrade to sell their product.”



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"We're also seeing the food processing industry in Asia growing," Kumar continued. "Time was, all cooking was done at home; now the multinational food companies, especially those that are U.S. or European based, are making and packaging food in these markets."

To keep on top of the game, Royal Manufacturing is building a new plant to make food grade and biobased greases exclusively, in a building adjacent its main facility. While Tulsa now makes some food grade products in an isolated area of its plant and holds Halal approval (a must for Middle East customers, points out Mallory), this new plant also will have Kosher certification.

"I'm optimistic that the plant will open around the first of the year," Mallory told *Lubes'n'Greases* last month. "We also have a new laboratory to set up. This plant will have two kettles devoted to making food grade greases, and two more kettles for biobased greases. In some cases, the products could be both biobased and food grade."

Although Royal has another new grease plant in San Antonio, Texas, "we're building this one in Tulsa because both Anoop and [technical services director] Steve Humphreys are in Tulsa, and this product line will require a great deal of chemistry and technical support," Mallory added.

### Regulatory Thicket

The food grade market certainly demands plenty of technical support, as well as an ability to navigate regulatory thickets, indicated Wayne Mackwood, grease technology manager at Chemtura Canada, West Hill, Ontario. "Food production and safety is critical to the world's population and economy," he told the recent NLGI Annual Meeting in Palm Springs, Calif. "Food grade greases should be used in all stages of food production: agriculture, although some would debate that; raw processing; refined processing; and packaging." Use of food grade lubricants is growing, but there's still consid-

erable use of non-approved products, he said.

The most widely recognized global certification for food grade lubes is the U.S. Department of Agriculture's H1 category, he went on, and approved ingredients are found in such federal regulations as 21 CFR 178.3570, 21 CFR 182, 21 CFR 184 and others. "Ingredients can also be those that are Generally Regarded As Safe (GRAS), and some products can also receive letters of opinion from the Food and Drug Administration," Mackwood said. "Finally, the lubricant manufacturer can self-certify their products, too, and a few of them do."

Many sellers opt to register their H1 lubes with the NSF White Book, an online listing used by food safety inspectors, lubricant buyers and others who need to identify food grade lubricants. Products also can earn approval as Kosher ("suitable" for observant Jews) and Halal, meaning "permissible" for Muslim markets, Mackwood related.

## When faced with managing chemical risks, the choice is clear.

Did you know that NSF offers independent evaluation of lubricants, greases, cleaners and sanitizers specifically for the food and beverage industry? Only the NSF Mark provides you with the assurance that a product's safety has been independently verified by the leading experts in public health. Additionally, the NSF Mark is recognized and respected by authorities around the globe.

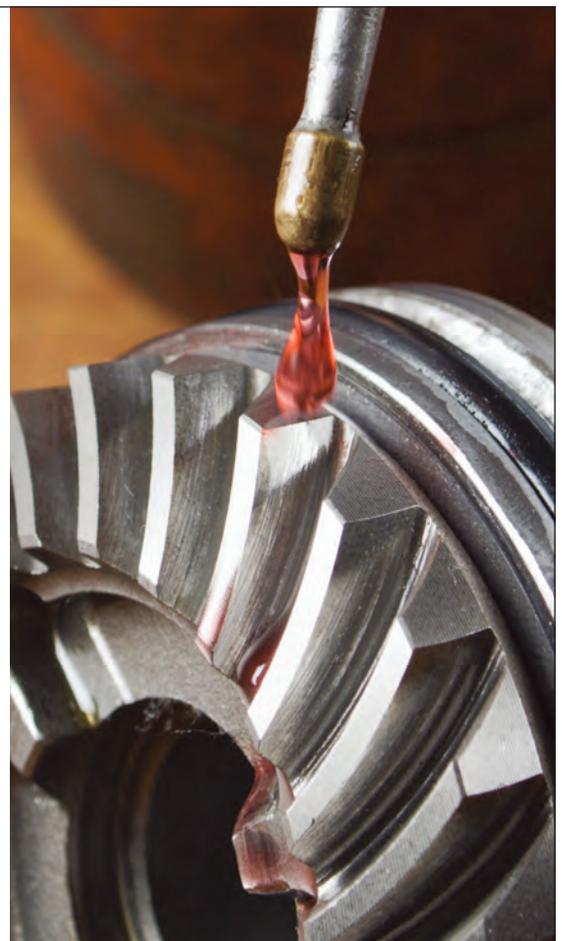
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Chemtura's leading entrant in the food grade field is calcium sulfonate complex grease, which was introduced in the 1980s and first adopted by the steel, pulp and paper, mining and off-road industries. CaSuX greases give exceptional performance where heat, water and high loads are present, Mackwood said; other pluses include



Photo: Bosch

corrosion protection, mechanical stability, high dropping point, good water resistance and low wear — all attributes that the food industry hungers for, too.

Ten years ago, Chemtura achieved NSF White Book listing for its CaSuX grease in H1 use and brought industrial-level performance to this market, said Mackwood. “So lack of performance really is no reason now for not using food grade products.” He sees growth

coming next “in the Far East, and India and China in particular because they need to move to approved products.” That’s one reason Chemtura is building a multipurpose facility in Nantong, China, to manufacture in the region with the highest growth rate. When complete, the plant will make petroleum additives, synthetic lubricants, other chemicals — and CaSuX greases.

### Incidental Isn't

The USDA defines the types of food grade lubricants that are acceptable for “incidental food contact,” but that doesn't mean the lubes are food-like. In fact, they should never come in contact with any food, but in case of accidental ingestion the lubes at least must not hurt consumers. “Food grade lubricants are designed to come in contact incidentally — but not intentionally,” Mackwood stressed. “They should be applied in a way that minimizes contact with the food, and the FDA limits the contact to 10 ppm.” Anything more requires the food be condemned.

This emphasis on safety limits the slate of ingredients that may be used in food grade lubricants, Mackwood pointed out. “For example, no lithium greases are allowed, even though it's the most widely used grease thickener type by far. Thickeners that are acceptable include anhydrous calcium, aluminum complex, some clay types, polyurea, calcium sulfonate complex and a few others.”

Acceptable lubricant base oils include white oils, polyalphaolefin, polyalkylene glycol, silicone, polyisobutene, alkylated naphthalene and some esters. (And except the white oils, all are pricy synthetics.) The additive menu is equally restrictive, he noted: No ZDDP is allowed, for example, and choices are few for extreme pressure, antiwear and corrosion inhibition.

### Bumper Crops

Over time, more chemistries have been introduced, though. “There are more and more additives on the approved list now, and we're learning how to use them,” commented Royal

Manufacturing's Mallory. “In times before you had to really hunt for components, and it still takes some effort now, but the additive companies like R.T. Vanderbilt, King, Ciba and others have brought out a lot more options now. That means we can make a more robust product now to do the job. The user is getting a better product.”

And if end users require one-on-one education, that's what they should get, Kumar added. “Sometimes, we go into a plant and the food processor is asking us to supply a biobased product, because they want to be environmentally responsible and they think that's how to do it. Then we see that they're using conventional lubricants in their food machinery, and we have to educate them and tell them, ‘Your issue is not the environment — you're contaminating the food itself.’ A lot of the time they don't even know there's an option, and we can teach them.”

While the food grade market may see a bumper crop of neophytes, Mallory says the technical demands will winnow out the unfit. “We've been in the food grade market for 10 years, so we're well ahead of the newcomers. We're investing and putting in the equipment to make what we need. The gimmick guys will go away. We're making a big commitment to this market, and we expect to see more private-label business as well.

“This is a small niche, and for the big players, the volumes are too small to manage. So they're coming and asking us to make the products for them. Face it, the food grade market is chump change to most majors. They want to have the products in their line, but can't make them efficiently.

“Companies that were slow in adopting food grade lubrication practices now realize what needs to be done,” Mallory said. “Ten years ago the products were there, but people got by using conventional lubricants; now they're more aware. That's good for us because it means new products are needed, and we like to work on new projects.” ■