

ROUND TABLE

A question of food-grade lubricants

New Food hosted a roundtable with some of the industry's leading food-grade lubricant suppliers to hear some key facts about this essential product.

BETHAN GRYLLES, *New Food's* Editor, spoke to two experts from the food-grade lubricants (FGLs) sector to have an honest and insightful roundtable on this vital product. Here is what Orsi Dézsi, Director, Global Food Safety – Equipment & Chemical Evaluation NSF International, and Chris Dyson, a tribologist at ROCOL, had to say...

What are some of the most FAQ you receive about FGLs?

DYSON: It used to be questions surrounding NSF registration and the ISO 21469 certification, but nowadays people are far more aware of these requirements and expect them as minimum requirements. So now we're being asked about issues regarding customers' individual requirements, such as Kosher or Halal, or the presence of allergens or certain raw materials which are not permitted.

It has been important for us to take a 'front foot' approach. Being proactive has led to us getting Kosher and Halal certifications for our products, and to generate allergen lists based on standard lists, for example EU Regulation 1169/2011 Annex II and specific requirements that customers have.

We have also been receiving an increasing number of enquiries around vegan certification. In response to this demand, we have worked with the Vegan Society to register and certify most of our food-grade range of products to ensure that they are meeting those vegan standards.

This entailed looking at our suppliers, the materials that we use onsite, and the things that we use to make our lubricant and maintenance products. Obviously, the materials and ingredients used cannot be derived from animals and no animal testing is to be undertaken. Vegan products should also be processed and manufactured separately to non-vegan.

Does FGL mean it's a food ingredient?

DÉZSI: I think a better description of the term 'food-grade' is 'incidental food contact' and that's actually how we have defined it. We're looking to have minimal contact; FDR regulation title 21 CFR dictates that there can't be more than 10 parts per million. If there's a significant lubricant contamination in the food, even if it is a FGL, that's something that the food manufacturer would have to assess as a risk. There are certainly some lubricants that can also be food ingredients, but that is not the intent of the term 'food-grade'.

DYSON: The way that this issue is often presented to us is: "I've got this piece of equipment and it's manufacturing xyz; we're interested in this particular lubricant of yours, is this going to be suitable in my process?" And as Orsi was saying, there are two components to that question. We can comment that our lubricant is



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registered to NSF H1, which means it is suitable for incidental contact, or if it's H1 and 3H dual registered, so it can be used as a lubricant with incidental contact or as a release agent where there would be more direct contact with the food. But we can only comment that that's what our product is registered for; it is down to the end user to work through their HACCP plans and establish where contact might occur. We can obviously help and provide some guidance, but ultimately it comes down to the process.

What role do FGL manufacturers have in developing a food safety culture?

DYSON: It's not about supplying a tub of grease or a barrel of oil; we recognise that there is a food safety aspect too. We believe in developing partnerships with our customers in which we can draw on each other's expertise. For example, at ROCOL we offer regular training with our customers, engineers and operators

to help them understand lubrication best practice and some of the regulations. We also help them understand the fundamentals of lubricants. This kind of training allows users of FGLs to understand important matters, such as whether they are using the right amount of FGL.

We also work in the field with our customers, surveying their sites, making sure that they're using the right lubricants in the right applications, and providing guidance on optimisation. We also offer support on the food safety and compliance side of things; ie, introducing colour coding to lubrication equipment, re-organising oil stores and helping them develop a systematic approach. If customers are working under a system such as total productive maintenance (TPM), then we have ways, such as numerical identifiers on labels, lube shuttle cartridges where production identification is clearly visible, that enable us to plug our products into a TPM »



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framework to greatly reduce the possibility of using the wrong lubricant.

What trends are you seeing and how do you foresee FGLs developing in the future?

DÉZSI: I'm going to take a second just to talk about the role of FGLs. Over the last year and a half now, during this pandemic, we've seen a ramp up in food production, so facilities are adding additional shifts to keep up with the demand. We've witnessed large food manufacturers shift entire productions to making frozen pizza, for example, and

making it 24/7. That means they're using a lot more of these products, a lot more FGLs essentially, to keep their machines going. They're using more cleaners – they're using more of everything.

So, there has been a huge increase in FGL manufacturers trying to keep up with that demand. We're getting a lot of requests at NSF to register additional lubricants too.

Lubricant manufacturers are a really innovative group; they're always looking for ways to improve not just the performance of the product but also their own performance. Our current regulation is based on the US FDA 21 CFR. It's one of the few, if not only, regulations globally

that exists for lubricants. We expect to see more lubricant manufacturers going down that 'extra route' to actually submit creative and new ingredients and formulations to the FDA directly, and get food contact notifications to enable them to qualify their products. It's an industry that's constantly innovating and it's encouraging to see that they're always striving to improve and be better.

Existing manufacturers are really trying to keep up with demand and we're also seeing some new players enter the field.

DYSON: From a performance perspective, there seems to be an ever-increasing focus on uptime, reliability, efficiency and productivity; these are key drivers for many of our customers. That has an impact on us too because it means we are not formulating to hit the lowest price point, we're formulating products that will deliver the greatest performance, reliability and assurance to our customers and end users. That is driving the industry, as we see it in the UK and EU, towards higher performance and uptime, and that informs the products we develop.

There are so many different regulations, particularly for the UK and EU, that have an impact directly or indirectly on food processing or packaging production. This necessitates us keeping track of those regulations as they evolve, as they're implemented, and ensure that our products are compliant; but also that we communicate with our customers and to the market generally that our products are compliant. »

Useful to know

Insight from Dr Robert von der Aa, Head of Application Technology at ADDINOL Lube Oil GmbH

There were incidents in the past where accidental contact between foodstuff and machine lubricants caused large-scale product recalls. The registration for FGLs according to NSF is based on a very clear differentiation and in line with the positive components list of 21 CFR § 178.3570 of the US Food and Drug Administration (FDA). First of all, there are lubes according to NSF H1, which can be applied where incidental food contact may potentially occur. For NSF H2 lubricants contact with food is excluded but they nevertheless must be free of toxic ingredients. Lubricants according to NSF 3H are release agents for applications with direct and continuous contact between lubricant and food produce.

As aforementioned incidents occurred nevertheless and although lubricants were applied in line with registration, the trend clearly goes towards using H1 for all lube points. Today, these are state-of-the-art, painstakingly tailored to the technical requirements and the typical conditions in food production and there is no compromise on their performance. They might call up higher prices but, in the end, these pay off by guaranteeing a safe production both from the angle of machine operation and food safety. In addition, high quality products are highly economical because they can achieve longer drain intervals. On top of that, the switch to NSF H1 lubricants for all plants significantly reduces the risk of cross contamination or mix-up.

If there are no NSF H2 lubes on the shelf, one cannot accidentally pick the wrong product.



Robert von der Aa, PhD

Robert is Head of Application Technology at ADDINOL Lube Oil GmbH. He and his team of 10 support customers and partners all over the world in all questions on the choice and use of the right lubricant for the application at hand, providing technical advice, support, analyses service and trainings.



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A lot of development and improvement in standards is being driven from the end users themselves. Supermarkets will be auditing manufacturers; manufacturers will then be auditing us and others in their supply chain.

Finally, we're seeing a demand for

additional standards and assurance; requirements such as Kosher, Halal and vegan. There will probably be more of these to come, as supermarkets and food producers look for higher levels of assurance and look deeper into their supply chains. 



Chris Dyson

Chris is a tribologist who has worked in industrial lubricant R&D for 13 years. For 10 of those, he has worked at ROCOL, developing new formulations for food industry

lubricants, providing customer support, and ensuring compliance with the most up-to-date customer and regulatory requirements.



Orsi Dézsi

Orsi is the Director of Global Food Safety – Equipment & Chemical Evaluation at NSF. For the past 17 years, she has worked closely with the regulatory community, industry stakeholders and

clients to navigate the evolving global regulatory landscape in both equipment design and material regulations. Orsi's passion for NSF's mission of protecting and improving human health is what drives her to help clients find straightforward solutions in a complex regulatory environment.

You can watch the interview, featuring Orsi Dézsi and Chris Dyson here:

<https://vimeo.com/629139903>

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