FOOD GRADE LUBRICANTS

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Food grade lubricants, more than meets the eye

Sarah Krol, Global Managing Director of NSF International, reviews the role that food grade lubricants play in delivering food safety principals.

Food grade or incidental contact lubricants are precisely formulated to comply with strict regulatory limitations. This means that base oils, thickeners and performance additives are measured and controlled to a fraction of a percent in overall formulations. Why is this so critical? Because on occasion even with extreme care and due diligence, transfer of trace amounts of lubricant to a food contact surface, food packaging or the food itself may occur. Under this scenario, a processor has to make difficult decisions about the safety of its product and whether to deem it unfit for distribution. Rarely are the available options desirable – product disposal, destruction or, in the worst case, recall. Using food grade lubricants offers processors much better odds of avoiding such costly mistakes.

No ordinary lubricant
Food grade lubricants are often mentioned in conjunction with implementing robust HACCP (Hazard analysis and critical control point) plans in food processing operations. The well-recognised benefit of using food grade or incidental contact lubricants is the effect of limiting the introduction of potentially hazardous chemical agents that could adulterate the food product and cause harm to human health if ingested. Most processors understand that food grade lubricants are a logical and practical solution to addressing critical control points, or points in their operations where contact of the food and lubricant is possible due to exposed lubrication points or proximity of the machinery to the food production line.

What is less obvious, but equally important, is to recognise that food grade lubricants are helping the food industry address some of its most current and pressing food safety concerns. Today’s food processors are focused on many issues affecting consumers worldwide including: allergen control, microbial contamination, traceability, smart packaging compatibility and work force management. The global lubricant industry has advanced the chemistry of lubricant formulation significantly over the past ten to fifteen years, bringing performance to new levels.

Allergen control
An increasingly important factor in protecting consumers’ health and safety is allergen control. According to the United States Department of Agriculture (USDA), a 2014 summary of food recalls for agricultural products cited more than 40 individual product recalls due to undeclared allergens. In fact, meat and poultry products were recalled due to allergen issues more often than any other reason cited, including contamination or processing defects. The USDA also reports a consistent trend of increasing recalls year-over-year due to allergen mislabeling or contamination, with the highest number yet predicted for 2015.

One challenge for global food manufacturers is that international requirements for allergen labeling and control are inconsistent – covering a wide-ranging array of allergenic substances from the commonly recognised eggs and soy, to sulphites, sesame and even bee pollen. The good news is that food grade lubricants (whether H1 Registered or ISO 21469 Certified) place an emphasis on careful ingredient traceability.
and control. This means a food grade lubricant supplier should be able to confirm the presence or absence of the most common allergenic substances, eliminating the lubricant as a potential source of allergen contamination.

**Training, education and technical support**

When choosing a lubricant supplier, it is important to consider the extended support that the supplier is able and willing to provide. Most reputable food grade lubricant manufacturers substantiate their product claims with workforce training, education and hands-on application support for the end-user. In fact, many application specialists who work with food grade lubricants are well-versed in HACCP and possess a broad understanding of food safety principles. It is critical that a food processor feels confident that the lubricant manufacturer understands the unique challenges of its processing environment and has an appreciation of both the technical requirements and the food safety risk management responsibilities a processor must balance. Workforce management will continue to be challenging as changing demographics make it difficult for some processors to recruit and retain skilled workers. Knowing that the lubricant manufacturer is willing and able to provide training regimes for food production staff is a significant benefit for food processors.

**Global markets and regulatory compliance**

Food safety regulations are constantly evolving and the U.S. Food Safety Modernization Act (FSMA) is no exception. While FSMA is a regulation enacted by the U.S. Food and Drug Administration, it will have global implications for food suppliers. According to the USDA’s Foreign Agricultural Service’s report on processed food imports, the European Union collectively exported more than $18 billion (USD) in processed food to the United States in 2014. Now that FSMA’s Preventive Controls for Human Food rule is final, with compliance dates for some businesses starting in September of 2016, covered facilities must establish and implement a food safety system that includes an analysis of hazards and risk-based preventive controls. Preventive controls are measures required to ensure that hazards will be minimised or prevented and can include process, food allergen and sanitation controls, as well as supply-chain controls and a recall plan. The FSMA rule on Foreign Supplier Verification Programs (FSVP) for importers of Food for Humans and Animals is now final and compliance dates for some businesses begin in 18 months. This means that importers must verify that food imported into the United States has been produced in a manner that meets applicable U.S. safety standards. In practice, this translates into increased scrutiny on hygiene and processing plant controls for food producers making products intended to ship to the U.S. market. For processors looking to improve their maintenance plan, using registered food grade lubricants is an excellent and straightforward option.

**Keeping harmful microbes at bay**

Some food grade lubricants on the market today incorporate special additives that help minimise the growth of microbial organisms. These anti-microbial properties may be useful under certain use conditions where machinery is in frequent contact with organic matter or exposed to steam and moisture or is difficult to clean. Anti-microbials within an overall lubricant formulation can help extend the life of the lubricant itself and may provide some protection against growth of organisms in and around lubricated parts and recesses in processing equipment. However, there are mixed perceptions around these particular lubricants. Food processors must perform due diligence and ask the right questions when considering lubricants with anti-microbial claims or properties. The first priority is to ensure that the lubricant manufacturer has secured the appropriate regulatory approvals for any preservative or anti-microbial claim. In many countries, including the U.S., anti-microbial or preservative claims must be backed by scientific data that support both the efficacy and the safety of the product. In the European Union, lubricants containing anti-microbial additives fall under the Biocidal Product Regulation (BPR, Regulation (EU) 528/2012) and are considered bio-treated products. To ensure the lubricant or anti-microbial ingredient has been thoroughly reviewed for safety and regulatory compliance, food processors should ask for verification of legal compliance for the appropriate geographical market. Lastly, food processors must be mindful that using a lubricant with anti-microbial properties is no substitute for robust inspection, cleaning and sanitisation practices – these are still mandatory for ensuring safe, hygienic conditions.
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**What every processor should know**
There are a few final critical recommendations for any food processor looking to switch to food grade lubricants or expand use within their current facility operations. Here are a few key points to keep front of mind:
- Most reputable suppliers have products backed by independent registrations, such as H1 Registration or ISO 21469 Certification by NSF International (www.nsfwhitebook.org).
- Be certain your supplier understands the unique nature of your operations.
- Work with a lubricant manufacturer who understands food safety principles and is knowledgeable about the risks and controls inherent in food production. Invest in a partnership, not just a product.

Sarah Krol is the Global Managing Director of NSF International’s Food Safety Product Certification Programs. She has over ten years of diversified quality assurance, regulatory and testing experience with emphasis in the food and consumer product sectors. In her current role she is responsible for ensuring accessibility of certification services around the globe to manufacturers across a variety of industries including nonfood compounds, food equipment, consumer products, and organic food.

**NSF International** is a global, independent organisation that writes standards and tests and certifies products for the food, water, health sciences and consumer goods industries to minimise adverse health effects and protect the environment (nsf.org).

Founded in 1944, NSF is committed to protecting human health and safety worldwide and is a Pan American Health Organization/World Health Organization (WHO) Collaborating Center on Food Safety, Water Quality and Indoor Environment.

The NSF Global Food Division provides expertise and accredited services across all supply chain sectors, from agriculture, produce, processing, distribution and dairy, to seafood, retail and restaurants. NSF is also the leading certifier of foodservice equipment, nonfood compounds and bottled water/beverages.

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