UNDERSTANDING

Food & Beverage Lubricants

LUBRICATION ENGINEERS®

ASSET RELIABILITY SOLUTIONS™

Understanding Food & Beverage Lubricants

The term “food-grade lubricants” may sound like another name for food oils such as cooking spray, salad dressing, lard, or canola oil, but it actually refers to lubricants that are safe for use in food processing equipment. Food-grade lubricants are not meant to be eaten, but they must be formulated for safety if they could come into contact with food products anywhere in the production plant. According to the USDA, food is considered contaminated and must be discarded if it comes into contact with more than 10 parts per million food-grade lubricants.

The severe production demands of food and beverage applications also require food-grade lubricants to protect machinery and processes from potentially expensive damage. At Lubrication Engineers, we produce food-grade oil and grease to lubricate processing and other equipment in food and beverage facilities, as well as in plants manufacturing cosmetics and pharmaceuticals. Our food-grade greases and oils are NSF H1-registered to allow for incidental food contact. They're also certified Halal and Kosher Pareve for compatibility with nearly every type of food manufacturing application.

To understand how lubricants work and which are best to use for food and beverage manufacturing, it's important to learn about the different types of NSF H1 and USDA H2 lubricants available. This eBook will cover these compliance standards as well as the importance of food and beverage lubricants.

Deep Dive Into NSF H1 & USDA H2 Lubricants

Two recognized designations for lubricants used in the food and beverage industry are NSF H1 and USDA H2. Understanding the distinctions between these types of lubricants is important when considering which one is right for your manufacturing plant.

NSF H1 Lubricants

NSF H1 lubricants, commonly known as incidental contact food lubricants, are used in food production plants on equipment where the lubricant could inadvertently come into contact with food products. Generally, if the machinery operates above the production line and the lubricant can potentially drop into the food, an H1 lubricant is required.

The U.S. Food and Drug Administration requires H1 lubricants to comply with 21 CFR 178.3570, a regulation that establishes guidelines for lubricating oils and greases used in food processing and handling applications, more specifically when contact with food items is a risk. All raw materials in H1 lubricants must comply with FDA CFR Title 21.

The National Sanitation Foundation approves and registers H1 lubricants for use in or near food processing areas. Lubricants must comply with this organization's Nonfood Compound H1 incidental food contact regulations.

In food and beverage manufacturing facilities, NSF H1 lubricants help prevent contamination while enabling operations to run smoothly. Examples of equipment that use NSF H1 lubricants are conveyor belts, pumps, and mixers, as well as other equipment that performs operations like blending, canning, cooking, peeling, slicing, bottling, cutting, and brewing.

USDA H2 Lubricants

Like NSF H1 lubricants, USDA H2 lubricants appear in many food and beverage applications. Note that they're not intended for incidental contact with food items. H2 lubricants are for equipment that indirectly supports food and beverage processing, such as forklifts. In general, if machinery is below the processing area or there is no chance of direct food contact, H2 lubricants are acceptable. In recent years, H2 lubricants have become less popular in food processing industries and many facilities have discontinued their use.

Despite the fact that H2 lubricants are not in direct contact with food products, they are forbidden to contain potential contaminants such as mutagens, carcinogens, mineral acids, or teratogens. In addition, heavy metal ingredients such as arsenic, lead, antimony, mercury, cadmium, or selenium cannot be used in H2 lubricants.

When deciding which types of food-grade lubricants are required for your business, you must first determine where the lubricant will be used. If there is a risk of close contact with food products, opt for H1 lubricants. If there is no chance of direct contact with food, but the equipment will operate in a food processing facility, H2 lubricants are the right choice. Most food and beverage plants will have a mix of equipment and need both types of lubricants.

Why Food and Beverage Lubricants Are Important

According to NSF, more than half of all product recalls between 2008 and 2017 were blamed on biotoxins and chemical contamination. Just one product recall can cost a food and beverage manufacturer around $10 million.

When using traditional oils and greases to lubricate food processing equipment, leaks and incidental food contact could cause contamination. However, using food-grade lubricants eliminates this risk, because leaks, over-lubrication, and spills would not compromise the safety of food products. Food-grade lubricants safeguard the integrity of food products and reduce the risk of product recalls.

The strict material requirements and performance expectations of food-grade lubricants differentiate them from other types of industrial lubricants.

In addition to being safe and free of contaminants, most food-grade lubricants must meet the requirements listed on the right.

Food-grade lubricants need to meet all of these requirements and function like other oil products, meaning they must sufficiently improve and maintain machine efficiency while decreasing friction, wear, oxidation, and corrosion. They should also dissipate the heat that food and beverage processes generate.

All these elements make food-grade lubricants essential to maintaining consistently safe and efficient food and beverage operations. Other applications that rely on food-grade lubricants to prevent product contamination include pharmaceutical and cosmetics manufacturing. Because consumers either ingest or apply these products to their bodies, these production facilities must also meet the highest standards for lubricating specific equipment and safeguarding product integrity.

REQUIREMENTS

- **Odorless and tasteless**
- **Resistant to plastic and other packaging materials**
- **Tolerant to exposure to food products, steam, water, and chemicals**
- **Able to dissolve sugars**

Food-Grade Lubricants from Lubrication Engineers

A common misconception is that food-grade lubricants do not perform as well as non-food-grade lubricants. Our food-grade lubricants can compete with other commercial lubricants because they meet the service needs of the machine while being safe for incidental consumption by animals and humans. The quality of our formulation and our customer service help us exceed other lubricant producers on the market.

To maintain the safety and efficiency of food and beverage processing operations, it's important to use top-quality food-grade H1 lubricants. At Lubrication Engineers, we carry a wide selection of food-grade oils and greases to meet your application's unique requirements. We can supply lubricants for your entire facility so there's no need to search for other lubricant suppliers.

Our knowledgeable team has experience selecting solutions for many types of operating conditions and machines. We're here to help find what you're looking for based on variables at your facility and with your equipment, including load, environment, temperature and speed. Some of our food machinery lubricants feature USP-grade, additive-free white mineral oils, while others include our unique Quinplex additive, which enhances the wear reduction, impact resistance, and oil film strength of food machinery lubricants. Using Quinplex products, your application will benefit from increased corrosion resistance, water resistance, mechanical stability, and tackiness.

We conduct investigations into various lubricant samples we receive from customers. Our laboratory technicians analyze them to determine where the problem lies: in the machine, the lubricant, or storage contamination.
Our findings often reveal issues our customers never knew existed.

Customers use our lubricants across a wide range of applications in food and beverage facilities. Some common applications include bottle washers, conveyors, blenders, slides, cams, gearboxes, bottling machines, canning machines, cookers, valves, packaging equipment, hydraulics, and bushings.

To guarantee quality across all our product offerings, we stay up-to-date on all relevant industry certifications. Our certifications include:

ISO 9001:2015 Certification

ILMA Certification

H1 Allergen Certification

Halal Certification

Kosher Certification

Religious certifications result from a unique type of inspection, where a representative from a given religious group—usually a rabbi or a halal auditor—visits the facility, examines how it is run, inspects ingredients within products, checks for proper segregation between ingredients or handling equipment that are considered unclean, and performs religious rituals on all relevant equipment. Thus, these products are subject to the same level of inspection required by ISO 21469.

These qualifications, in addition to our high level of service, make our products suitable for nearly any food and beverage application. For more information about our food-grade lubricants and other solutions, contact us today.

About Us

A trusted lubrication reliability partner to companies in a variety of industries, we protect our customers' profits through longer equipment life, extended service intervals, reduced energy use, fewer repairs, and less inventory. We do this with technical expertise, reliability products and services, enchanced lubricants that exceed the performance of ordinary oils and greases, and trained consultants and distributors. Our manufacturing facility is in Wichita, KS, and we distribute products around the globe from our warehouses in KS, TN and CA.

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We operate under an

ISO 9001 Certified Quality System