

Home > Products > Food Grade Lubricants Food Grade Lubricant Products Lubriplate's complete line of high-performance, NSF H1 registered food grade lubricants are designed to provide complete food processing and bottling plant lubrication capability.

While it is never desirable for lubricants to be allowed to contaminate raw materials, work-in-progress or finished product, the consequences of a lubricant-contaminated product are rarely more acute than in the food processing industry. As such, lubricants used in this industry have requirements, protocols and performance expectations that go well beyond typical industrial lubricants. This article will identify the basic differences between H1, H2 and H3 lubricants, their requirements and formulations, as well as proper lubricant selection, which is critical to food safety and machine reliability.

Costly Consequences While it is never desirable for lubricants to be allowed to contaminate produced goods, the consequences of lubricant contamination are rarely more acute than in the food industry. While few recalls occur due to lubricants, they can be costly when they do occur. Some case histories have been documented. In , a total of 4, pounds of turkey sausage was recalled by Jennie-O Foods because the product had been contaminated with grease. One year later, only 31 pounds were recalled. Consumers reported off-odor and off-flavor product. The investigations indicated that a can of Heinz Cheesy Parsnip and Potato Bake was contaminated with mineral oil lubricant, possibly from a machine in the manufacturing process or from the can manufacturing process. A mother complained that the food smelled of tar and alerted the environmental health officials. Food Standards Australia indicated that the lubricant may cause irritation if consumed. A total of 1, tons of milk powder manufactured between January 3 and June 28, , were contaminated by one-half to three-quarters of a liter of lubricating oil containing very fine iron particles. This was discovered when a customer in Thailand complained that the milk powder had a pale gray tint. This was traced back to a packaging plant, to a worn axle in a gearbox. This allowed oil to seep out through a ball joint and into the powdered milk. Prior to , approval and compliance of food-grade lubricants was the responsibility of the USDA. The USDA reviewed the formulations of maintenance and operating chemicals. This did not include lubricant testing; rather, the approval was based primarily on a review of the formulation ingredients of the lubricant. In essence, the manufacturer became responsible for reviewing and approving the chemical compositions of lubricants to decide whether they were safe as food-grade lubricants. Each component in the formulation is submitted to NSF by the lubricant manufacturer along with other supporting documentation. This is then reviewed to verify it is within the FDA list of permitted substances. NSF is not the only organization working this area. This group has been active in drafting an authorization program for food-grade lubricants and developed DIN V , Food-Grade Lubricants " Definitions and Requirements.

Challenges Facing Food-Grade Lubricants The food processing industry poses unique lubrication challenges. Large-scale food processing requires machinery such as pumps, mixers, tanks, hoses and pipes, chain drives, and conveyor belts. Machinery used in food processing facilities face many of the same tribological and lubrication challenges found in other non-food processing plants. Lubricants must offer similar protection of internal surfaces to control friction, wear, corrosion, heat and deposits. They must also offer good pumpability, oxidation stability, hydrolytic stability and thermal stability where the application requires. In addition, certain applications within the food and drug manufacturing facilities demand that lubricants resist degradation and impaired performance when in contact with food products, certain process chemicals, water including steam and bacteria. Unfortunately, many of the raw materials used to formulate lubricants that effectively address these challenges in conventional industrial applications are not permissible in food applications for safety reasons.

Food-Grade Categories and Definitions Food-grade lubricants are lubricants acceptable for use in meat, poultry and other food processing equipment, applications and plants. The lubricant types in food-grade applications are broken into categories based on the likelihood they will contact food. The approval and registration of a new lubricant into one of these categories depends on the ingredients used in the formulation. The three designations are described as follows: Lubricant formulations may only be composed of one or more approved basestocks, additives and thickeners if grease listed in 21

CFR H2 lubricants are lubricants used on equipment and machine parts in locations where there is no possibility that the lubricant or lubricated surface contacts food. Because there is not the risk of contacting food, H2 lubricants do not have a defined list of acceptable ingredients. They cannot, however, contain intentionally heavy metals such as antimony, arsenic, cadmium, lead, mercury or selenium. Also, the ingredients must not include substances that are carcinogens, mutagens, teratogens or mineral acids. Approved Lubricants As previously mentioned, the USDA approvals are based on the various FDA Codes in Title 21 that dictate approval for ingredients used in lubricants that may have incidental contact with food. These are mentioned in the following sections. CFR " Substances generally recognized as safe Some information from these standards is highlighted below. Acceptable Food-Grade Basestocks Depending on whether a food-grade lubricant is H1 or H2, the list of approved basestocks will vary. H2 lubricant basestock guidelines are less restrictive and, consequently, allow a broader variety of basestocks. Many products used in industrial non-food plants are also used in food plants for H2 applications. H1 lubricants are much more limited since they are designed to allow for accidental exposure with the processed foods. H1-approved lubricant basestocks can be either mineral or synthetic: Petroleum-based lubricants " Mineral oils used in H1 food-grade lubricants are either technical white mineral or USP-type white mineral oils. They are highly refined and are colorless, tasteless, odorless and non-staining. Technical white oils meet the regulations specified in 21 CFR USP mineral oils are the most highly refined of all white mineral oils. Compared to white mineral oils, they have significantly greater oxidation stability and greater range of operating temperatures. Another approved H1 synthetic basestock is polyalkylene glycols PAG. These lubricants are more increasingly used in high-temperature applications. Dimethylpolysiloxane silicones with a viscosity greater than centistokes cSt 7 is also permitted for H1 lubricants. Acceptable Food-Grade Additives and Thickeners Often, basestocks are not able to meet the severe demands required in food processing work environments. To improve the performance characteristics of base oils, additives are blended into the formulation. The types of antioxidants, corrosion inhibitors, anti-wear, extreme pressure additives and concentration are limited by 21 CFR Greases are lubricating oils that have a thickening agent added to the formulation. Among approved grease thickeners are aluminum stearate, aluminum complex, organo clay and polyurea. Aluminum complex is the most common H1 grease thickener. They can withstand high temperatures and are water resistant, which are important properties for food processing applications. A lubricant used on a conveyor system running over a food line must be an H1 category oil; however, a conveyor system running underneath a food line may not necessarily be safe to use an H2 oil. A number of lubricant suppliers offer to assist with the lubrication survey portion. Because H1 lubricants are limited by types of additives and in the past only used mineral oil basestocks, H1 lubricants in certain instances provided less protection and shorter lubricant life. Now that synthetics are used, some H1 lubricant performance can exceed non-food-grade lubricants. This is significant in allowing consolidation and avoiding accidental cross-contamination of H1 and H2 oils and contamination of H2 oils with food. H1 lubricants are still only approved for minimal, incidental contact. Also, the lubricant certification process does not include lubricant plant audits and sample testing to ensure formulation; it is strictly comparing the formulation to the approved list. Richard Pinchin, formerly with Shell International and a supporter of a more rigorous certification process, indicated at an NLGI meeting: Retrieved November at [http: NLGI Spokesman, 17,](http://www.nlgi.org)

Chapter 2 : The Basics of Food-grade Lubricants

Copies of Food Grade Approvals, Kosher Certificate & Testimonials can be downloaded from the INOX-mx6 SDS page. They can be emailed, faxed or posted directly to the recipient from Candan Industries P/L. Email info@www.nxgvision.com to request any other certifications like allergen and non haz Declaration.

Regardless of load, temperature, environment and speed, LE has a suitable food machinery lubricant solution for your facility. Our formulation of food grade greases and oils have been used in food manufacturing operations for years to provide dependable reliable operation. We have hundreds of testimonials showcasing how we have helped customers with their lubrication reliability, including critical applications and equipment. Learn more about Quinplex. In addition to being a food grade grease " NSF H1 registered for incidental food contact " it is also robust enough to withstand moisture, high temperatures, extreme pressures and other harsh conditions found at food manufacturing plants. It features an aluminum complex thickener base, providing extreme water resistance, excellent mechanical stability, reversibility and tackiness. Switching to H1 Quinplex Food Machinery Lubricant results in longer bearing life, fewer equipment repairs, less downtime and lower lubricant consumption. Also available in an aerosol. Blenders, bottle washers, cams, carbonators, conveyors, cookers, crowners, de-hairing machines, dividers, electric motors, extractors, feather pickers, filling machines, food carts, knives, labelers, mixers, molders, o-rings, packaging machines, proofers, saws, sifters, slicers, slides, and wrappers Available NLGI Grades: Bearings operating in or near heat-generating equipment are subject to temperatures that cause ordinary greases to melt and run, leaving critical bearing surfaces unprotected. It also resists oxidation and vaporization, and repels water. NSF H1 certified, it is a suitable lubricant for use in food processing and other sensitive environments. By ensuring longer lubrication intervals and fewer bearing failures, H1 Quinplex High Temperature Lubricant helps contribute to increased production and a healthier bottom line. High-temperature applications where an NSF H1 registered food grade product should be used, including pellet mills, kilns, exhaust fans, oven conveyors, and plastic blow molding machines. This premium combination imparts a very high dropping point, exceptional inherent extreme pressure EP characteristics, superior mechanical stability, low oil bleed, tackiness and water resistance - everything you need to protect and extend the life of your equipment. NSF H1 registered for incidental food contact, this grease is the right solution for a wide variety of food processing applications. It is especially effective when used on bearings operating in a warm, moist environment or in operations where a lot of water is needed to keep equipment cool. H1 Quinplex is robust enough to handle elevated temperatures and other harsh conditions found at food manufacturing plants, resulting in longer bearing life, fewer equipment repairs, less downtime and lower lubricant consumption. Works well in variety of food processing applications, including: It resists rust and corrosion, leaving a light lubricant film for further lubrication and corrosion prevention on metal surfaces. Any area where a penetrating and lubricating oil suitable for incidental food contact is required, including bottling and canning equipment, food processing machinery, slides, cams, chains and other machine surfaces Available container sizes for Single Can and case of 12 Food Grade Silicone Spray H1 Silicone Spray H1 Silicone Spray is a great H1 food grade silicone-based aerosol spray for use on machine parts and equipment in locations in which there is potential exposure of the lubricated part to food. Available in an aerosol can. Food processing equipment, food packaging equipment, lock mechanisms, rubber door and window seals, ironing and pressing equipment, cutting tables for smooth and even cutting, vending equipment, molding equipment, and dry cleaning equipment Available container sizes for It was formulated to withstand severe loading conditions and prevent rust and corrosion. Its anti-wear capability differentiates it from many other white oils on the market. It also offers great seal compatibility and excellent nonfoaming qualities. Equipment where incidental food contact may occur, including: It is also recommended for a variety of other critical applications in food and beverage manufacturing facilities. Formulated to withstand severe loading conditions, prevent rust and corrosion, and provide superior protection at a wide range of operating temperatures, H1 Quinplex White Gear Lubricant contains a carefully selected blend of pure mineral and synthetic base stocks. It offers anti-wear protection, differentiating it from many other white oils on the

market. In addition, it is approved for incidental food contact and contains no artificial dyes, making it a good choice for food manufacturing plants needing superior heat resistance. Oven chain efficiency is dependent upon a lubricant that can keep the chain operating freely and smoothly, fighting the ever present heat and moisture that can cause corrosion and eventually lead to premature failure of oven chain pins and bushings. Only the most robust lubricant formulations can perform in this application; it is not an area to cut corners. If the oven chain fails, output comes to a screeching halt. In addition to this high level of protection, equipment runs more cleanly and efficiently with Ovenworx H1 Syn Chain Lubricant, which lubricates without the need of solids. Lubricants with solids have to be stirred to keep the solids distributed within the carrier and prevent them from falling out of the suspension. Solids also can create housekeeping issues by building up over time, creating gum and gunk around the application area, especially when over-applied. It clings to equipment and provides reliable water-resistant protection from oxidation, rust and wear. Bearings, bushings, slides, chains, compressors including rotary screw air , vacuum pumps and hydraulics used in: It is a food and USP grade white mineral oil containing no additives. It is suggested for preventing rust after washdown operations. In addition to food manufacturing uses, it can be used for textile applications where a non-staining oil is required like spindle oil and needle oil applications. General lubrication applications where incidental food contact can occur. Can also be used for textile applications where nonstaining oil is required. It provides superior anti-wear performance that many white oils on the market do not offer.

Chapter 3 : Understanding Food-Grade Lubricants

H1 lubricants are food-grade lubricants used in food-processing environments where there is the possibility of incidental food contact. H2 lubricants are food-grade lubricants used on equipment and machine parts in locations where there is no possibility of contact. H3 lubricants are food-grade lubricants, typically edible oils, used to prevent rust on hooks, trolleys and similar equipment.

Open How does NSF handle white mineral oil registration? This authorization requires the manufacturer to 1 certify that the formulation of the original white oil and the rebranded product are identical; and 2 agree to notify NSF if the product formula changes or becomes unavailable. In following this practice, this authorization for rebranding of white oils has been handled in a manner identical to the way multi-ingredient formulations are handled. Through recent discussions with key personnel in the lubricants industry and in evaluating the benefit of applying this authorization practice for single ingredient white mineral oils, NSF has decided to streamline its review practice and will now evaluate white mineral oil CAS as a single ingredient, not a formulation subject to the authorization process. This means that the re-branding company may apply for registration independently, without the approval of the white mineral oil manufacturer. The re-branding company will be responsible for confirming the applicable regulatory references and ensuring all other NSF Registration requirements are met. We expect this to have a positive impact by reducing costs and timelines associated with the prior authorization process. This practice will go into effect immediately and does not have any impact on companies who wish to register white mineral oils as HX-1, as that option is still readily available nor will it impact any products currently registered with the authorization in place. Open How much will ISO certification cost? To receive a quote, please contact us at nonfood nsf. Certification costs are related to the services provided and include fees for facility audits, product testing, documentation review and project management services. NSF provides a realistic cost package that includes a complete explanation of the certification costs, in advance of the project initiation. Open Why are some companies choosing to certify products to ISO ? Similar to H1 registration, ISO is a voluntary standard. The NSF ISO Product Certification Program provides manufacturers with a point of distinction to use with their customers and provides assurance that the hygiene of every product has been independently verified by an NSF facility inspector and tested in our laboratories. ISO certification opens the door to new markets in other manufacturing industries including pharmaceuticals, cosmetics and animal feed. It also provides an internationally recognized benchmark for companies to measure their product quality. The NSF ISO certification assessment bridges the gap between traditional management systems registrations and H1 registration, and provides an excellent means of achieving continuous improvement objectives in your facility. NSF has been developing national consensus standards and certifying products for nearly 70 years. In fact, NSF has certified more than , products in more than countries around the world. We understand the third-party certification process and how to work with companies to achieve positive results. Open My production facility is currently ISO registered. What else is required for ISO certification? Demonstrating that your production facility has an effective quality management system is an excellent starting point. However, the ISO standard gives additional product requirements that must be verified, including lubricant composition ingredients , label content, risk assessment strategy, good manufacturing practices, effective process controls and information for end users. The NSF certification policies contain all of the detail related to the NSF certification process and will be sent along with your quote package. As you consider moving forward with ISO certification, an NSF representative is available to call or visit you, to walk you through the NSF certification process in greater detail. The NSF H1 registration program is a continuation of the former USDA authorization program for lubricants used in food processing, and covers two primary elements: ISO addresses hygiene requirements for lubricants used in a broad range of industries food, cosmetics, pharmaceuticals, tobacco, animal feed , and provides ingredient criteria in addition to 21CFR, guidance for risk assessment and product testing, criteria for labeling and requirements for good manufacturing practices. Open Does the ISO standard apply to all lubricants? ISO applies to all lubricants that could potentially contact food, cosmetics, pharmaceuticals, tobacco, animal-feed

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or related products such as packaging during processing. The standard includes H1 lubricants but is broader in scope, also covering lubricants used outside of food processing. ISO does not apply to lubricant additives HX-1 or to direct food contact lubricants.

Chapter 4 : Food Grade Lubricants | ROCOLÂ®

ment imposed food safety laws extend to food grade lubricants and other process- ing compounds," Breitner said in a presentation at the 19th International Tribol- ogy Colloquium at the Technische Akademie Esslingen, Germany, in January.

Standards of cleanliness and hygiene are as important on the shop room floor as in hospital operating rooms. But when it comes to production equipment, lubrication keeps the business of feeding and healing the nation on track. Lubricant leakages and maintenance are an inevitable part of all industries. Lubricants do not discriminate against the materials with which they come into contact. So the food-processing and pharmaceutical industries have additional challenges in selecting the right lubricants to do the job. This article looks at the previous, current and future standards relating to lubrication in this industry. What is a Food-Grade Lubricant Food-grade lubricants must perform the same technical functions as any other lubricant: Lubricants can be subjected to intense environmental contaminants. A corn-milling environment generates significant dust. Although not as hard as silica-based dust, it still presents a problem for filtration. A meat plant requires stringent steam cleaning at all times, so the risk of water contamination is high. Some plants experience as much as 15 percent by volume of water in their gear oils. Another aspect of lubrication contamination that poses a risk to food-grade lubricants is the growth of microorganisms such as bacteria, yeast and fungi. While these can be a risk in industrial environments, the opportunity for contamination in the food-production environment is even greater. The approval of a new lubricant and its registration in one of these categories depends on the list of the ingredients. H1 lubricants are food-grade lubricants used in food-processing environments where there is the possibility of incidental food contact. H2 lubricants are food-grade lubricants used on equipment and machine parts in locations where there is no possibility of contact. H3 lubricants are food-grade lubricants, typically edible oils, used to prevent rust on hooks, trolleys and similar equipment. Deciding whether there is a possibility of contact is tough, and many have erred on the side of safety with respect to selecting H1 over H2. The agency is considered an internationally renowned authority on consumer safety issues with regard to the food-processing industry. Its efforts essentially covered federally inspected meat and poultry facilities, but were rapidly adopted by other sectors such as fisheries and retail food operations. To gain USDA approval, lubricant manufacturers had to prove that all the ingredients in the formulation were allowable substances. This did not include lubricant testing; rather the approval was based primarily on a review of the formulation ingredients of the lubricant. However, since September 30, , the USDA has no longer been issuing registration of food-grade lubricants or reviewing federally inspected meat and poultry process facilities. In fact, many lubricant manufacturers still aspire to the USDA H1 and H2 categories and approval process, and supply certification from their boards of directors to guarantee that claim. This standard has since been approved at a higher DIN level. It may take up to three years from the date the application is accepted for an international standard to be released. NSF International, The Public Health and Safety CompanyTM, is an independent, nonprofit organization that has been committed to public health, safety and protection of the environment for more than 55 years. It is conceived and administered as a public service organization, serving as an independent and neutral body to resolve issues between regulatory bodies, business, industry and the public. NSF Draft Standard in Detail The purpose of the standard is to establish food safety evaluation criteria for food-grade lubricants used in food-processing, packaging, handling and storage. The scope does not cover evaluation of product performance or operational criteria inside food-processing facilities. However, it does specify definitions and requirements for food-grade lubricants in lubrication, heat transfer, load transmission and corrosion protection of machinery and equipment in food-manufacturing and processing facilities. Because the scope is food-grade lubricants, only H1 and H3 are covered in this draft standard. The requirements section of the draft standard covers labeling and formulation. All references to the company name on the labels must be in complete agreement with the disclosure information on formulation. Formulation Guidelines With respect to formulation requirements, the draft standard states the product shall not contain intentionally added heavy metals, and shall not contain

ingredients classified as carcinogens, mutagens or teratogens. A carcinogen is a substance that when ingested, may cause cancer. A mutagen is a substance which causes mutation. A teratogen is an agent which raises the incidence of congenital malformations. For certain types of lubricants, these shall be neutral in taste and odor, and in addition, should be selected according to the use such that the lubricant withstands temporal, chemical, biological, thermal or mechanical stresses without premature degradation or impact to its neutral state. The evaluation criteria cover three main aspects: In terms of the ingredients, any separate confirmation issued by the FDA or USDA should be provided and should not be mentioned in any list of nonallowable substances. What Does All This Mean? For the manufacturer and supplier, a new standard potentially exists by which their lubricants can be categorized and approved. Because the same categories and requirements exist within the USDA, although with some modifications, continuity of supply and safety can be assured. For the end-user, selection of lubricants per the original H1, H2 and H3 categories remain. Compliance and regulation are now potentially assured by the NSF draft standard. Consumers can be assured that the lubricant manufacturers and food and drugs industries are maintaining strict standards with regard to our health and safety.

Chapter 5 : Food grade lubricants – Mobil SHC Cibus Series | Mobil

H1 lubricants are food-grade lubricants used in food processing environments where there is some possibility of incidental food contact. Lubricant formulations may only be composed of one or more approved basestocks, additives and thickeners (if grease) listed in 21 CFR

With the increasing interest on the part of food manufacturers to apply sanitary equipment design principles to their processes, many food processing equipment manufacturers are now designing and constructing equipment with food safety goals in mind. One area that is gaining increased attention is the application of food-grade lubricants as a part of sanitary equipment design considerations. All food and beverage processing equipment needs lubrication and should have adequate design to minimize lubricant contamination during processing. However, in actuality, the potential of incidental food contact cannot be completely negated. As such, it is critical that food-grade lubricants are used on all types of processing equipment to ensure public health protection. At present, there are a number of types of registration categories of interest to food-grade lubricant manufacturers, food processors and regulators. An incidental food contact lubricant must be formulated using the ingredients listed under 21 CFR Section 178.1010. Based on this regulation, the USDA developed its own incidental contact lubricants category H1 and listed authorized H1 lubricants until 2010. To date, NSF has independently registered nearly 2,000 H1 lubricants. These include lubricants, hydraulic oils and greases used in equipment for cleaning, sanitizing, canning, bottling, blending, chilling, frying cutting, slicing and peeling, as well as pumps, mixers, tanks, hoses, chain drives and conveyor belts. The previous USDA program reviewed but did not publish the listing for partial products, such as base oils and additive packages for formulating food-grade lubricants. NSF introduced a new registration category HX-1 to provide a source where formulators of finished products can select independently registered food-grade lubricant components. The registration also provides ingredient suppliers with the benefit of establishing product confidence without disclosing confidential formulations. Any new ingredients intended for H1 lubricants that are not listed in 21 CFR must be evaluated separately through appropriate risk assessment procedures. In addition to being listed in 21 CFR, there are other options that will establish that an ingredient is appropriate for use as an H1 lubricant. For example, an ingredient could be a base oil or lubricant additive that is added to enhance equipment life or product performance. NSF provides a risk assessment service to establish ingredient compliance to 21 CFR. Expected timeline for risk assessment could vary from six months to four years, depending on the availability of data. The food industry has long expressed concerns regarding bacterial growth in lubricated parts of food processing equipment that may have incidental food contact. The potential of H1 lubricants containing biocides has been proposed. However, its practicality has been hindered by dual regulatory hurdles: Under the prior USDA program, all heat transfer fluids were listed under the P1 category miscellaneous covering diverse product types. Generally, USDA would provide a text in its authorization letter describing the approved end use. For example, the P1 letter for heat transfer fluids determined food contact allowance. Manufacturers of heat transfer fluids have recently expressed the need for developing a specific category code to determine food contact allowance, which will help end users identify them in listings and on labels. With advice from the USDA, the committee has recommended that NSF create new registration categories for incidental food contact heat transfer fluids HT-1 and nonfood contact heat transfer fluids HT-2. HT-1 formulations may comply with 21 CFR 178.1010. Lubricants used by consumers and the non-food industry may still impact human health. Independent registration of non food-grade lubricants provides credible verification that the products are formulated with public health protection in mind. H2 lubricants are not intended for use in places where there is possibility of food contact. H2 formulations are not required to meet the 21 CFR requirements and most substances generally used in industry would be acceptable. However, the formulation must conform to Section 5. Developments and Proposals On Oct. 1, 2010, however, the system does not verify whether the products are being blended according to the registered formulations nor does it ensure adequate quality control processes are in place. The NSF Steering Committee recommended that a subcommittee group be created to discuss the feasibility, potential options and features of such a certification scheme, a task which

is currently underway. All interested parties are encouraged to participate in the group. In addition, an ISO standard for incidental contact lubricants is currently under development. NSF has requested to be the standards development organization to administer the U. The work group process could last several years. The main objective in this ISO initiative driven mainly by international lubricants industries is international harmonization: The objective will be accomplished if all countries agree to accept the standard as a national standard. Historically, the international markets relied upon the U. In the meantime, NSF is actively developing collaborative relationships with international regulatory authorities to facilitate global marketing of food-grade lubricants. NSF has introduced new services such as the HT-1 incidental contact heat transfer fluids registration program and the HX-1 ingredient registration program in the last few years. Stake-holdersâ€™ food processors, lubricant manufacturers and regulatorsâ€™ are well placed to ensure public health protection through more effective application of food-grade lubricants used on all types of processing equipment.

Chapter 6 : Nonfood Compounds - NSF International

Food grade lubricants The food and beverage industry is a challenging market where production efficiencies need to improve while maintaining safety and cleanliness. Health concerns are rising concerning the usage of inappropriate lubricants in the manufacturing of various food-type products.

Chapter 7 : Advances in the Application of Food-grade Lubricants - Food Safety Magazine

LGFP 2 General purpose food grade grease SKF LGFP 2 is a clean, non-toxic bearing grease, which is based on medical white oil using an aluminium complex soap.

Chapter 8 : Food grade lubricant - Food grade grease - Food grade oil - CONDAT

CRC Food Grade Multipurpose Grease is a tenacious, NLGI 2 white grease providing superior lubrication and durability in food production and processing applications. It is designed for effective lubrication and protection of ball, roller and plain bearings that operate under high loads and temperatures, and require a long grease life.

Chapter 9 : Food Grade Oils and Greases | Lubrication Engineers

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