

NSF/H1 Registered Food Machinery Lubricants: Understanding the Basics.

by

Ellie Girard

***Original Equipment Manufacturer Analyst
& Government Agency Liaison***

Lubriplate Lubricants Company

Newark, NJ - Toledo, OH



H1 REGISTERED



Certified Kosher Pareve



HALAL



ISO 21469 Certified

Presentation Overview

- ***What is the regulatory history of food machinery lubricants?***
- ***What are the NSF Product Category Codes for lubricants and which one(s) should my facility be using?***
- ***What is ISO 21469 certification?***
- ***What are the features & benefits of NSF/H1 registered lubricants?***
- ***What services should I expect from my lubricant supplier?***



Regulation of Food Machinery Grade Lubricants

United States Department of Agriculture (USDA)

- Approved incidental food-contact lubricants used in meat and poultry facilities
- Relied on FDA – Title 21 Code of Federal Regulations
- USDA evaluated product formulations and reviewed labels, but seldom conducted testing
- USDA would issue a letter of authorization, which became industry-accepted

NSF International

- 1998 - the USDA authorization program came to a halt due to a lack of resources and the development of Hazard Analysis Critical Control Point (HACCP) programs
- 1999 - NSF International took over the registration program

What Is NSF International?

- ***An independent accredited organization***
- ***Develops standards and certification programs that help protect the world's food, water, consumer products and environment***
- ***Provides auditing, education and risk management solutions for public health and the environment***



Source: <http://www.nsf.org>



H1 REGISTERED



Certified Kosher Pareve



HALAL



ISO 21469 Certified

NSF Nonfood Compounds Program

- ***NSF offers product registration for nonfood compound products like lubricants.***
- ***Products that bear the NSF mark have undergone a stringent review process and are compliant with food safety regulations.***
- ***Registered products are included in the NSF White Book***



Source: <http://www.nsf.org>



H1 REGISTERED



Certified Kosher Pareve



HALAL



ISO 21469 Certified

NSF Nonfood Compounds Program

The NSF Nonfood Compounds registration program is based on the USDA standard and FDA - Title 21 Code of Federal Regulations which affect lubricants for machinery with incidental food contact



FDA 21 CFR Codes	Description
21.CFR 178-3570	Ingredients used to manufacture H1 lubricants must comply with this code
21.CFR 178-3620	Technical White Mineral Oil as a component of non-food articles intended for use in contact with food
21.CFR 172-878	USP White Mineral Oil for direct contact with food
21.CFR 172-882	Synthetic isoparaffinic hydrocarbons (i.e.: PAO base stocks)
21.CFR 182 with 9 subheadings	Substances general recognized as safe (i.e.: zinc oxide and Vitamin (i.e.: zinc oxide and Vitamin E))

NSF Nonfood Compounds Categories: Lubricant Specific

NSF Category Code	Registration Description
H1*	General incidental contact
H2*	General no contact
H3*	Soluble Oils
3H*	Release Agents
HX-1	Ingredients for use in H1 lubricants
HX-2	Ingredients for use in H2 lubricants
HX-3	Ingredients for use in H3 lubricants
HT1	Heat transfer fluids - incidental food contact
HT2	Heat transfer fluids - no food contact
HTX-1	Ingredients for use in HT1 heat transfer fluids
HTX-2	Ingredients for use in HT2 heat transfer fluids

***Most commonly seen within the industry**

Selecting The Correct Lubricant

H1 LUBRICANTS

- Should be used in food processing environments where there is any possibility of incidental food contact
- May only be composed of one or more approved base stocks, additives and thickeners listed in 21 CFR 178.3570

H2 LUBRICANTS

- Should be used where there is absolutely NO POSSIBILITY that the lubricant or lubricated surface will contact food
- H2 lubricants do not have a defined list of acceptable ingredients

H3 LUBRICANTS

- Soluble or edible oils
- Should be used to clean and prevent rust on hooks, trolleys and similar equipment

ISO 21469 Product Certification

- ***The ISO 21469 standard is specifically for lubricants used in food, pharmaceutical, cosmetic and animal feed manufacturing.***
- ***Standard specifies the hygiene requirements for the formulation, manufacture, use and handling of lubricants, which may come into contact with products during processing***

Source: <http://www.nsf.org>



H1/Food Grade Lubricants

Feature

100% use of H1/Food Grade Lubricants is possible and should be desirable.

Benefit

- ***Improves consumer safety***
- ***Eliminates lubricants and lubrication as a potential chemical hazard in FDA and USDA mandated and monitored HACCP & HARPC programs.***
- ***Produces lubricant inventory consolidation.***
- ***Eliminates lubricant misapplication.***



H1 / Food Grade Lubricants

Feature

**Availability of
100% Synthetic
H1 / Food Grade
Lubricants.**

Benefit

- **>4 times the oxidation stability and cold temperature performance than the semi-synthetics which comprise most of the market.**
- **Prolongs lubricant life and reduces disposal issues.**
- **Excellent EP and AW characteristics. 14 Stage FZG Test pass.**



H1 REGISTERED



Certified Kosher Pareve



HALAL



ISO 21469 Certified

100% Synthetic H1/Food Grade Lubricant Fluid Base Stocks & Grease Thickeners

Fluid Base Stocks

- **Polyalphaolefin (PAO)**
- **Polyalkylene Glycol (PAG)**
- **Polyolester (POE)**
- **Polyglycolester (PGE)**
- **Perfluoropolyether (PFPE)**

Grease Thickeners

- **Calcium Sulfonate**
- **Aluminum Complex**
- **PTFE**



H1 / Food Grade Lubricants

Feature

PFPE-based grease provides high temperature capability

Benefit

- ***Up to 550°F / 288°C***
- ***Chemically inert***
- ***Anti-rust and anti-corrosion inhibitors***
- ***Long service life***



H1 REGISTERED



Certified Kosher Pareve



HALAL



ISO 21469 Certified

H1 / Food Grade Lubricants

Feature

***Factory Mutual
Approved, POE-based
hydraulic fluids
are designed
for demanding
food processing
applications***

Benefit

- ***Exceptionally High Flash Point for Superior Fire Protection***
- ***Outstanding Shear Stability***
- ***A High Viscosity Index which delivers high temperature application stability***
- ***Superior Anti-Wear Performance***
- ***Readily Biodegradable according to OECD 301F***



H1 / Food Grade Lubricants

Feature

POE-Based fluids are designed for bakery oven chains.

Benefit

- ***Protection against wear, rust, oxidation and corrosion.***
- ***Superior film strength***
- ***Reduced risk of oven fires***



H1 REGISTERED



Certified Kosher Pareve



HALAL



ISO 21469 Certified

H1/Food Grade Lubricants

Feature

The technology behind the advanced polyalkylene glycol (PAG) base stocks in some H1/Food Grade Lubricants contribute to a **green** workplace

Benefit

- ***Lower energy requirements***
- ***Superior thermal stability***
- ***Extended lube intervals***
- ***Less waste oil***
- ***Biodegradability***
- ***Gear Oils & Compressor Fluids***



H1/Food Grade Lubricants

Feature

***USP White Mineral Oil
for Petroleum-based
H1/Food Grade Oils
and Greases.***

Benefit

- ***Purest mineral oil available.***
- ***Best at preventing metal-to-metal contact.***
- ***Most oxidation stable.***
- ***Contains Vitamin E which is a natural anti-oxidant and microbe fighter.***



H1 REGISTERED



Certified Kosher Pareve



HALAL



ISO 21469 Certified

H1/Food Grade Lubricants

Feature

Use of H1/Food Grade Lubricants containing an anti-microbial additive can eliminate lubrication as a host for bacteria, listeria and mold in the food supply chain

Benefit

- Improves consumer safety***
- Safeguard the work environment***
- Makes the lubricant last longer***



Supplier Services

- **Training - distributor and user.**
- **Interactive Plant Surveys.**
- **Follow-up Oil Analysis.**
- **Local Representation - regional distribution for on-time delivery and varied packaging.**
- **Operational Surveys.**
- **Color Coded Lube Charts, Machinery Tags and Storage Container Tags.**
- **Lubricant Inventory Consolidation.**



Lubriplate

Lubricant Application Chart

Lubriplate Product	Application
FSD-0	Rollers
FSD-1	Spindle Gears, Lube 1 and Lube 2 Filter Lube 4 Lubster
FSD-30 AW	Rollers, 1000 Inboard Pump, Oil Shifter
FSD-300 AW	Rollers, Depolluters, Recycling
FSD-500 AW	Cylinders, Filters, Washers, Diverses
FSD-900 AW	Gear Reducers
SFOO ULTRA 68	Hydraulic Pump
SFOO ULTRA 220	Lube 2 Filter, Lubster, Kiste
SFOO ULTRA 300	Lube 1 Lubster, Blue Roller



NSF/H1 Registered Food Machinery Lubricants: Understanding the Basics.

by

Ellie Girard

***Original Equipment Manufacturer Analyst
& Government Agency Liaison***

Lubriplate Lubricants Company

Newark, NJ - Toledo, OH



H1 REGISTERED



Certified Kosher Pareve



HALAL



ISO 21469 Certified