THE DESIGN ENGINEER'S GUIDE TO SELECTING AN APPLIANCE GREASE

Lubricants engineered to improve the performance, reliability, and durability of household appliance components.

Nye® Lubricants
Member of the FUCHS Group

GREASE FOR APPLIANCE APPLICATIONS

LUBRICANTS DESIGNED TO ENABLE NEXT-GENERATION INNOVATIONS

Innovations in Household Appliances

Appliance manufacturers are challenged to deliver innovation and value to everyday household products. Some areas of innovation focus on customer experience, low water/energy usage, smaller size, personalization, and shorter cycle times. Value is often delivered in the design, function, quality, durability and reliability of a product. Appliance lubrication can enable innovation without sacrificing the value customers expect.

Vibration, moisture, corrosion, extreme temperatures and demanding load-carrying requirements are all common causes of component failure. Component failure creates serious problems for OEMs including poor customer experience, increased warranty costs, and safety concerns. A small amount of lubricant can create a barrier that protects components from the environment, wear, and ultimately, product failure.

Lubricants can also enable design innovations such as durable, light weight, gear box designs or drawers with improved usability and feel. Nye offers solutions for low and high-temperature applications for lifetime lubrication.

Nye Lubricants has an extensive line of OEM-trusted synthetic lubricants that were designed with the challenges of an appliance engineer in mind. Nye partners with engineers to solve your challenges that might include: material compatibility, low PFOA, low VOCs, and low toxicity/NSF certified greases.

Electrical Components

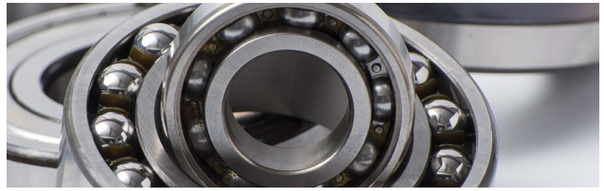
Grease for sliding electric switch contacts must have excellent film strength, low and high temperature capability and stay-in-place capability. For the smooth operation of switches, a damping grease is recommended to reduce noise and minimize wear. For connectors, synthetic hydrocarbons provide excellent film strength, broad temperature serviceability, and protection against corrosion.

Slides & Rails

Slides and rails do not operate at high enough speeds or loads for a lubricant to form a fluid film that will separate surfaces. Therefore it is important to select a grease that stays in place and does not rely on film formation to prevent wear.

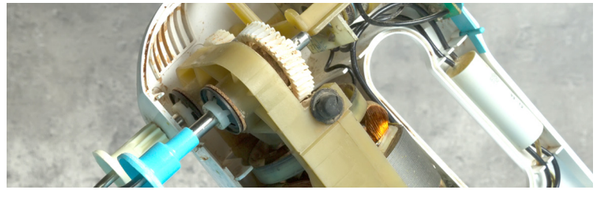
Bearings

Nye recommends impregnating oils for sintered bearings and grease for rolling element bearings. Oils provide the lubricating film that reduces friction and wear. Greases create a seal to protect bearings from contaminants and moisture.



Gears

Modern appliance designs require more power transfer with minimal noise and heat generation. Lubricants minimize the friction that creates heat while dampening noise and vibration.



Proven Performance

Washing machines and other appliances that operate at high loads often require additional protection from friction to prevent wear. A leading appliance manufacturer noticed that the lubricant used in their gear assembly was leaking into the interior of their top-loading washing machine.

Leakage can often lead to product recalls, so the manufacturer decided to take a proactive approach. This manufacturer approached Nye to see if we could replace the existing competitor's lubricant with a stay-in-place, water-resistant grease that would protect the gears without leaking into the drum.

After consulting with our engineers, the appliance manufacturer decided to test an EP fortified PAO/ester blend grease. This clay thickened, medium viscosity, grease has excellent water resistance and is ideal for high-load applications such as washing machines. After successfully passing validation testing, the grease was selected to lubricate the washing machine's gear assembly.

The advantages of lubricating appliance components.

- Extend operational life of components
- Seal & protect from environmental elements
- Reduce friction & wear
- Improve durability & reliability of mechanisms
- Increase load-carrying capabilities
- Control motion

Kitchen

Cleaning

Laundry

Household

For Electrical Components	Temperature Range	Base Oil	Thickener	Kinematic Viscosity ASTM D-445 (cSt)		NLGI Grade ASTM D217	Oil Separation ASTM D6184 (24 h, 100 °C)
				100 °C	40 °C		
NyoGel® 760G	-40 to 135 °C	PAO	Silica	39.4	400	2	1.5%
Rheolube® 362HT	-54 to 125 °C	PAO	Lithium Soap	6	33	2	2.9%
NyoGel® 774VLF	-50 to 120 °C	PAO	Silica	111	903	2	2.3%

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				100 °C	40 °C		
Uniflor™ 8512	-50 to 225 °C	PFPE	PTFE	15.8	65	2	6.8%
Synthetic Oil 623B	-40 to 150 °C	Ester	—	8.7	54	N/A	N/A

For Gears	Temperature Range	Base Oil	Thickener	Kinematic Viscosity ASTM D-445 (cSt)		NLGI Grade ASTM D217	Oil Separation ASTM D6184 (24 h, 100 °C)
				100 °C	40 °C		
Rheolube® 362HB	-40 to 125 °C	PAO	Lithium Soap	5.7	32.6	2	2.2%
Rheolube® 380-G1	-50 to 130 °C	PAO / Ester	Lithium Soap	6.5	36.9	1	18.6%
Uniflor™ 8512R	-50 to 225 °C	PFPE	PTFE	16.5	67	2	6.3%

For Slides & Rails	Temperature Range	Base Oil	Thickener	Kinematic Viscosity ASTM D-445 (cSt)		NLGI Grade ASTM D217	Oil Separation ASTM D6184 (24 h, 100 °C)
				100 °C	40 °C		
Uniflor™ 8172	-45 to 225 °C	PFPE	PTFE	18	167	2	3.8%
Fluorocarbon Gel 880	-40 to 200 °C	Dimethyl Silicone	PTFE	7349	18407	2	0%
Rheolube® 363F	-50 to 125 °C	PAO	Lithium Soap	8.6	51.7	2	8.43%

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ISO 9001:2015
IATF 16949:2016
ISO 14001:2015
ISO 13485: 2016
AS 9001D