



ADVANCED MOTION CONTROL GREASE NYOGEL® 975F

Synthetic hydrocarbon-based lubricant offering consistent performance over a wide range of temperatures.



NYOGEL® 975F

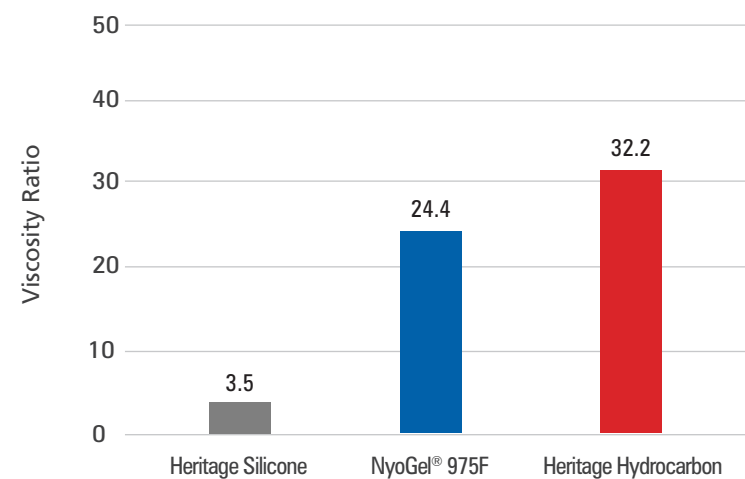
THE NEXT-GENERATION OF MOTION CONTROL

Reliable Motion Control Without Silicone

Typical uses of grease include controlling motion, providing a quality feel, and reducing noise and vibration in addition to the fundamental reduction of friction and wear. As vehicles shift toward fully electric designs, eliminating unwanted noise and vibration will require more attention. One critical consideration for the automotive industry is performance over a wide temperature range from -40 to 120 °C. Silicone lubricants meet the typical automotive standards; however, silicone migration is a concern. The technical challenge is to formulate alternatives to silicone-based lubricants with comparable properties. In applications where migration is not an issue, we offer a line of high-performance silicone motion control lubricants.

Nye has developed a new technology that approaches the temperature performance of a silicone-based lubricant. NyoGel® 975F is the first in a series of synthetic hydrocarbon-based lubricants that will provide consistent performance over the automotive interior temperature range of -40 to 120 °C. This new silicone-free grease also provides advanced wear protection that outperforms heritage silicone and hydrocarbon lubricants used in automotive interior applications. NyoGel® 975F meets these needs and fulfills our customers' requirements for sensitive and demanding applications.

Consistency Over Wide Temperature Range

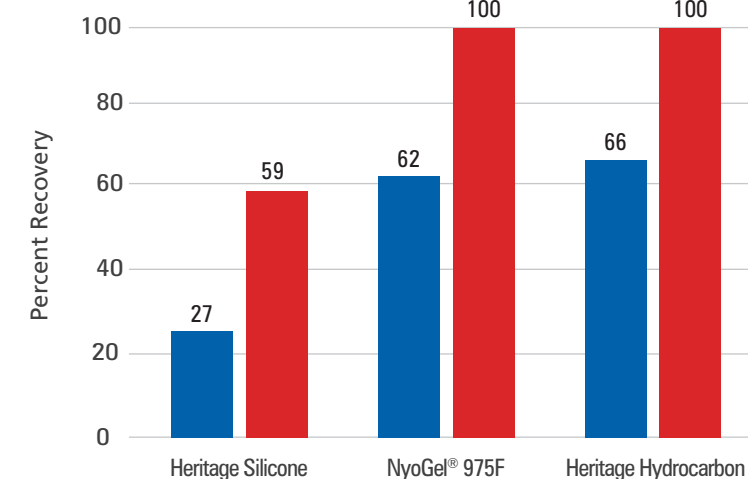


Test Conditions: -40 to 120 °C at 100% Strain. A lower value is better.



The viscosity ratio (VR) shows the grease's viscous consistency from -40 to 120 °C; a VR of 1 would be ideal. A hand-operated component, such as a shifter or sun visor, must provide the same actuation force regardless of temperature to give the user the same quality feel. At the wide operating temperatures observed in the automotive industry, NyoGel® 975F outperforms an industry embraced hydrocarbon lubricant. Note, we can measure the shear response at different strains to simulate a customer's application. For example, the strain ratio can demonstrate how grease will behave in a dial; rotating a dial should feel the same, regardless of the turning speed.

Consistency Over Repeated Motion



Test Conditions: 25 °C. A higher value is better.

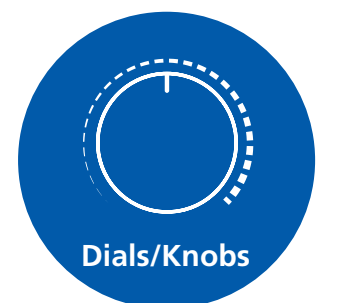
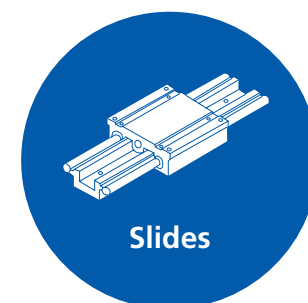


Nye's chemists have developed a custom flow test that measures the recovery of the grease's structure after repeated use. A 100% recovery is ideal. Our test method can be modified to model the frequency of a component's usage. This test method provides two parameters that describe the structure recovery. The elastic modulus (solid-like properties) measures thickener interactions. The viscous modulus (liquid-like properties) measures the base oil. Observing how a grease recovers over time is essential to a customer's design so that each actuation feels the same. As shown in the graph above, NyoGel® 975F performs significantly better than the heritage silicone.

Spotlight: Automotive Interiors

Interior automotive components face a unique set of lubrication challenges. Center consoles, storage compartments, and seat tracks are just a few areas where users expect smooth, noise-free operation. Lubrication is often a cost-effective solution for engineers looking to reduce noise and impart a smooth, quality feel within their design. Lubricants for interior components should exhibit excellent plastic and elastomer compatibility and provide the same tactility over a wide temperature range.

For example, an original equipment manufacturer (OEM) in the automotive industry approached Nye to reduce noise in their new lumbar assembly. The manufacturer reduced the noise, vibration, and harshness emitted via their design by applying a small amount of grease within the lumbar actuator. Nye was able to help another supplier find a plastic-compatible grease that prevented wear, reduced noise, and conveyed a quality feel within their switch design. These examples illustrate how Nye can improve perceived quality without adding another mechanical component—saving time and resources for suppliers and OEMs.






TYPICAL PROPERTIES

Lubricant Properties	Conditions	NyeGel® 975F	Test Method
Base Oil	–	Hydrocarbon	–
Temperature Range	–	-40 to 125 °C	–
Kinematic Viscosity	40 °C	862 cSt	ASTM D445
	100 °C	95 cSt	ASTM D445
Flash Point	–	250 °C	ASTM D92
Pour Point	–	-29 °C	ASTM D97
Color, Appearance	–	Light tan, Smooth	–
Worked Penetration (P60)	25 °C	315	ASTM D217
Density	25 °C	0.88 g/ml	CTM*
Dropping Point	–	288 °C	ASTM D2265
Oil Separation	24 h, 100 °C	4.0%	ASTM D6184
Evaporation	24 h, 100 °C	0.08%	CTM*
Copper Corrosion	24 h, 150 °C	1a	ASTM D4048
Oxidative Stability (PDSC)	150 °C	No exotherm	ASTM D5483
4 Ball Wear	40 kg load, 1200 RPM, 60 min, 75 °C	0.60 mm	ASTM D2266
MTM Wear Rate	24 h, 100 °C	5.39 µm ³ /mm	CTM*
Low Temperature Torque	24 h, 100 °C	Starting Torque: 3393 g/cm Running Torque (10 min): 2198 g/cm Running Torque (60 min): 1376 g/cm	ASTM D1478

*CTM: Nye Company Test Method

PACKAGING OPTIONS

Nye greases are available in a variety of packaging sizes for both high-volume production dispensing and small volume dispensing.

 1 kg jars
  7 lb pails
  35 lb pails
  110 lb kegs
  385 lb drums

Please contact us at orders@nyelubricants.com for more information or to explore our custom packaging options.

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