



Lubene^{notes}:

Design Engineer's Guide to Selecting a Lubricant

UniFlor™ High Performance PFPE Lubricants

UniFlor™ perfluoropolyether (PFPE) lubricants are designed for applications that require: wide temperature serviceability (-90°C to 250°C); low volatility; oxygen compatibility; fuel and chemical resistance; nonflammability; and/or compatibility with plastics and elastomers.

A unique line of high performance lubricants. Unlike any other line of fluorinated lubricants, the UniFlor family includes all types of PFPE oils—a distinct advantage to the design engineer who needs a high-performance lubricant. While each PFPE oil is a polymer composed of carbon, fluorine, and oxygen atoms, the chemical structure of each oil varies as a result of the base materials and polymerization processes used by the different PFPE manufacturers. These structural differences affect the base fluid's pour point, volatility, viscosity, and viscosity index — all critical factors in lubricant formulation. Some PFPE oils, for example, have a pour point of only -20°C, while others offer pour points as low as -90°C. Similarly, some PFPE oils offer better wear resistance properties than others. Because the UniFlor product line includes lubricants formulated with each of the world's PFPE oils, a design engineer now can get from a single source the PFPE lubricant that best matches the operating environment of his/her applications.

Products for a wide range of applications. The UniFlor product line is divided into five series of products, each designed for specific applications.

- **The UniFlor 8100 Series** offers multipurpose lubricants for gears, slides, light-duty bearings, and whenever plastic and elastomer compatibility is essential. It is one of the most economical lines of PFPE lubricants available.
- **The UniFlor 8500 Series** is designed especially for high-speed, high-temperature bearings. It also performs exceptionally well in low-temperature, low-starting torque applications.
- **The UniFlor 8600 Series** offers wide-temperature, ultra-viscous greases for industrial bearings. These products also serve as sealants for vacuum applications.
- **The UniFlor 8700 Series** combines wide-temperature, high-load capability, and ultra-low volatility, particularly for metal-on-metal applications.
- **The UniFlor 8900 Series** is recommended for delicate precision instruments, sensors, potentiometers, actuators and bearings where ultra-low temperature and low torque are critical design parameters.

Selecting the right UniFlor lubricant for your application. Currently Nye offers more than 50 different UniFlor greases which can be enhanced with a full range of grease additives, including anti-corrosion, extreme pressure, rust inhibitors, traction fluids, and UV dyes. Following is a representative sample of Nye UniFlor greases. Though not listed here, Nye also offers more than two dozen water-white, nonflammable UniFlor oils in a wide range of viscosities, some with exceptionally low vapor pressure. Nye also custom-formulates PFPE lubricants to meet individual design specifications and operating environments.

For technical data, evaluation samples, questions about any UniFlor product, or to discuss a PFPE lubricant custom-designed for your application — call us at (508) 996-6721 or visit our Web site at www.nyelubricants.com.

Contact Nye at 1.508.996.6721
or techhelp@nyelubricants.com

The SmartGrease Company®

| Multipurpose Grease | Temp Range (°C) | Base Oil kV 40°C | Base Oil Pour Point (°C) | Base Oil Viscosity Index |
|----------------------------|------------------------|-------------------------|---------------------------------|---------------------------------|
| UniFlor™ 8512 | -50 to 225 | 65 cSt | -54 | 258 |
| UniFlor™ 8172 | -35 to 225 | 167 cSt | -35 | 120 |
| UniFlor™ 8182 | -25 to 225 | 255 cSt | -29 | 132 |
| UniFlor™ 8192 | -20 to 250 | 400 cSt | -28 | 150 |

| Wide-Temperature, High-Speed Bearing Grease | Temp Range (°C) | Base Oil kV 40°C | Base Oil Pour Point (°C) | Base Oil Viscosity Index |
|--|------------------------|-------------------------|---------------------------------|---------------------------------|
| UniFlor™ 8511 | -50 to 225 | 65 cSt | -54 | 258 |
| UniFlor™ 8521 | -45 to 225 | 168 cSt | -48 | 213 |
| UniFlor™ 8531 | -40 to 225 | 230 cSt | -41 | 178 |

| Industrial Bearing Grease and Vacuum Sealant | Temp Range (°C) | Base Oil kV 40°C | Base Oil Pour Point (°C) | Base Oil Viscosity Index |
|---|------------------------|-------------------------|---------------------------------|---------------------------------|
| UniFlor™ 8612 | -20 to 250 | 345 cSt | -25 | 136 |
| UniFlor™ 8322 | -20 to 250 | 800 cSt | -26 | 138 |

| Wide-Temperature, High-Load, Metal-on-Metal Grease | Temp Range (°C) | Base Oil kV 40°C | Base Oil Pour Point (°C) | Base Oil Viscosity Index |
|---|------------------------|-------------------------|---------------------------------|---------------------------------|
| UniFlor™ 8711 | -70 to 200 | 26 cSt | -76 | 179 |
| UniFlor™ 8731 | -60 to 225 | 62 cSt | -65 | 194 |
| UniFlor™ 8751 | -54 to 250 | 100 cSt | -67 | 212 |
| UniFlor™ 8771 | -50 to 250 | 192 cSt | -53 | 231 |

| Extreme Temperature, Vacuum-Capable Precision Instrument Grease | Temp Range (°C) | Base Oil kV 40°C | Base Oil Pour Point (°C) | Base Oil Viscosity Index |
|--|------------------------|-------------------------|---------------------------------|---------------------------------|
| UniFlor™ 8921 | -65 to 250 | 134 cSt | -70 | 340 |
| UniFlor™ 8951 | -90 to 200 | 18 cSt | -90 | 317 |
| UniFlor™ 8961 | -80 to 200 | 33 cSt | -85 | 336 |
| UniFlor™ 8971 | -75 to 225 | 90 cSt | -80 | 320 |
| UniFlor™ 8981 | -65 to 250 | 140 cSt | -67 | 345 |

Note: All UniFlor lubricants are available with an anti-rust additive. Also, Nye will ultrafilter any of its oils and greases, and recommends this service for precision, vacuum, and photonic applications. Ultrafiltration removes virtually all particulate matter greater than 35 microns. For more information, please see our Lubenote on ultrafiltration.