

The World Leader in Synthetic Lubricants



Products & Services

Chemistries

Applications

Specialty Products

Specialty Services

Matching
Coupling
Kit



More than 150 years ago . . .

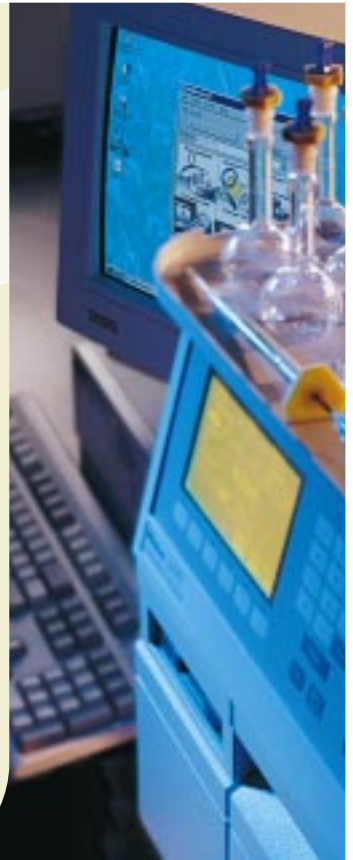
Nye Lubricants' founder advanced a simple principle, one that was far ahead of its time: demanding applications need specially formulated lubricants. The company developed a proprietary, cold-temperature refining process to produce a unique oil for the gears in fine watches and clocks. Nye's oil became known around the world for long life and superior performance – even at temperatures as low as 50°F below zero.



Today, we're a very different company. Our lubricants have graduated from chronometers on whale ships to gyroscopes on spaceships. We focus on the development of new synthetic lubricants. We work closely with OEMs in many industries, including automotive, aerospace, appliance, computer, electronics, medical device, exercise equipment, industrial machinery, and telecommunications components. We play an integral role in OEM product design, providing precise, scientific analysis of lubricant structure and properties to determine its suitability for an application. But our guiding principle remains the same as it was in 1844. We design specialty lubricants for demanding applications. Quality performance and long operating life are the inevitable results.

In this brochure, you'll find an overview of Nye's products and services, a sampling of the thousands of applications for which we have already designed synthetic lubricants, and a listing of our specialty products and services – from motion control greases to on-site engineering seminars. Most importantly, this is an invitation to make Nye's competence your own. Our electrical, mechanical, chemical, industrial, aeronautical, and materials engineers, as well as chemists and physicists, offer an unprecedented depth of technical support. More than lubrication know-how, they work extensively with other engineers in your industry, are familiar with your design issues, and are ready to play an important role on your design team.

For quality lubricants engineered for your application,
call us at 508-996-6721. With Nye, the lubricant
makes a difference.



Chemistries

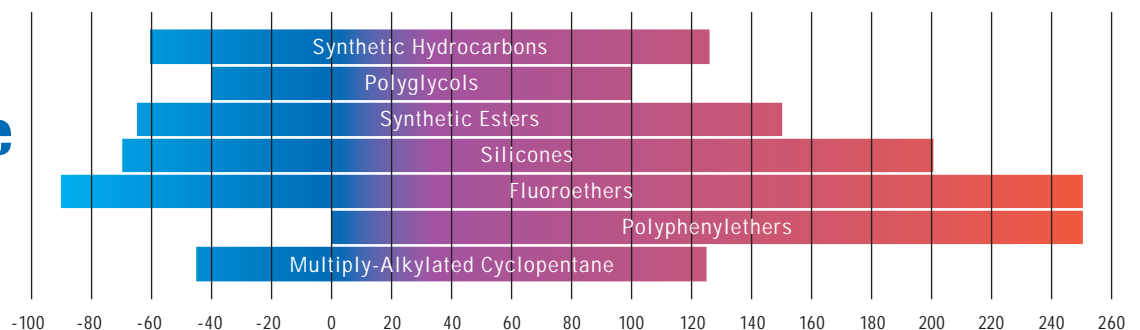
The Right Lubricant Starts With The Right Chemistry.

Choosing the right base oil is the first critical step in formulating a lubricant for your application. The appropriate base oil is determined primarily by the operating environment, especially its high and low temperature requirements. Material compatibility, load-carrying capability, lubricant migration, and other issues are also important considerations.

Nye engineers will guide your selection. We stock all major functional fluids used to formulate synthetic oils and greases. We also have cutting edge fluids not generally available in the marketplace. By tapping the unique qualities of each of these base oils, we can design the most appropriate lubricant for your application.

Synthetic Hydrocarbons	Temp Range: -60 to 125°C	<ul style="list-style-type: none"> • Excellent thermal stability • Good friction reduction • Good lubricity 	<ul style="list-style-type: none"> • Low-temperature serviceability • Good plastic and elastomer compatibility 	<ul style="list-style-type: none"> • Wide range of viscosities • Long and growing list of applications in many industries
Polyglycols (a.k.a. Polyethers)	Temp Range: -40 to 100°C	<ul style="list-style-type: none"> • Non-carbonizing, no residue • Good lubricity and film strength • Good load-carrying 	<ul style="list-style-type: none"> • Only synthetic oils which include water-soluble versions • Good high-temperature stability with proper antioxidant 	<ul style="list-style-type: none"> • Wide range of viscosities • Commonly used in arcing switches and particularly effective in large worm and planetary gears.
Synthetic Esters (includes diesters, polyolesters)	Temp Range: -65 to 150°C	<ul style="list-style-type: none"> • Excellent oxidative stability • Excellent thermal stability • Low volatility 	<ul style="list-style-type: none"> • Excellent anti-wear properties • Outstanding lubricity • Good low-temperature properties 	<ul style="list-style-type: none"> • Minimal viscosity change w/temp. • Excellent load-carrying ability for bearing applications
Silicones (includes dimethyl, phenyl, halogenated)	Temp Range: -70 to 200°C	<ul style="list-style-type: none"> • Excellent oxidative stability • Excellent thermal stability • Low volatility • Wide range of viscosities 	<ul style="list-style-type: none"> • Good wetting capability • Excellent plastic and elastomer compatibility • Minimal viscosity change w/temp. 	<ul style="list-style-type: none"> • Commonly used with plastic and elastomeric components, including gears, control cables, and seals. Higher viscosities provide mechanical damping.
Fluoroethers	Temp Range: -90 to 250°C	<ul style="list-style-type: none"> • Unsurpassed oxidative stability • Unsurpassed thermal stability • Low volatility and vapor pressure • Nonflammable and chemically inert 	<ul style="list-style-type: none"> • Excellent plastic and elastomer compatibility • Resistant to aggressive chemicals and solvents 	<ul style="list-style-type: none"> • Commonly used in extreme temperature environments and applications which require chemical, fuel, or solvent resistance. • Minimal viscosity change w/temp.
Polyphenylethers	Temp Range: 0 to 250°C	<ul style="list-style-type: none"> • Excellent thermal and oxidative stability • Excellent radiation, chemical and acid resistance 	<ul style="list-style-type: none"> • Excellent lubricity • Excellent high-temp. stability • Non-spreading, even in thin film 	<ul style="list-style-type: none"> • Traditional lubricant for noble metal connector applications; also used for high-temperature specialty bearings.
Multiply-Alkylated Cyclopentane (Pennzane SHF-X2000)	Temp Range: -45 to 125°C	<ul style="list-style-type: none"> • Proprietary fluid, manufactured by Pennzoil® and distributed by Nye, that combines the low vapor pressure of a fluoroether with the lubricity and load-carrying capacity of a synthetic hydrocarbon. 		

Temperature Range °C



Applications

The Best Lubricants are Custom-Designed for Specific Applications.

Once your base oil has been selected, we draw from a full inventory of additives and thickeners to engineer an oil or grease that meets your operating requirements. We design lubricants to: resist water, salt water, pollutants, solvents, and chemicals; inhibit rust; control both fretting and environmental corrosion. We can ensure low volatility and exceptional thermal and oxidative stability. Special additives can also enhance lubricity, load-carrying capabilities, or motion control qualities.

Nye has already designed lubricants for thousands of mechanical and electromechanical applications. Some of those applications are listed below. Chances are good that we already have the lubricant you need. If we don't, we'll design one for you.

	Components	Typical Applications
Mechanical		
	Slides, Cams, Detents	Electromechanical devices; switch mechanisms; rotary controls; linear controls
	Instrument Gear Trains and Gear Boxes	Appliance gear motors; power tool gearing; automotive starters; automotive superchargers; machinery
	Control Cables	Automotive cables; HVAC cables; aircraft cables; marine transmission cables
	Ball Screws and Lead Screws	Industrial motion control devices; robotics; automated assembly and inspection systems; precision positioning equipment; automotive seat position systems
Electrical		
	Electrical Switches and Sliding Contacts	Automotive instrumentation; rotary, toggle, ignition, and sliding switches; appliance controls; distribution switchgear
	Electrical Connectors	Automotive, telecommunications, computer, and PC board connectors; backplanes; instrumentation accessories
	Potentiometers	Wirewound and conductive ink potentiometers; trimmers; automotive position sensors; aerospace controls
Bearings		
	Rolling Element Bearings	Gyroscopes; accelerometers; aircraft instruments; accessory or appliance motors; electro-optical devices; high-speed miniature fans in electronic equipment; dental equipment; automotive accessories and power trains
	Precision Bearings	Miniature and high-speed bearings; precision spindles; disk drive bearings; ultra-quiet applications; precision rotating equipment; aerospace bearings
	Powdered Metal Bearings	Sintered bronze or iron bearings and components

The World Leader in



Synthetic Lubricants

Damping Greases and Fluids

Damping greases inhibit free motion (backlash and coasting) and silence metal-on-metal, metal-on-plastic, and plastic-on-plastic noise. They are a cost-efficient way to build a "velvet feel" into mechanical and electromechanical devices. Damping fluids are the sealed-system counterparts to damping greases. Viscosities can be extremely light to ultra-viscous.

Barrier Films

Non-wettable with low surface tension, NyeBar® fluorocarbon barrier films prevent oil migration and contamination of nearby, sensitive components by acting as a dam around the lubricated area. They also protect printed circuit boards by repelling moisture, oil, and attendant dust entrapment.

Vacuum Lubricants

NyeTorr™ vacuum lubricants, which have an exceptionally narrow range of molecular weights, deliver low volatility under the most demanding temperature conditions. Typical applications include bearings in spacecraft, precision optical instruments, and semiconductor manufacturing equipment.

Heat Sink Compounds

Silicone and non-silicone heat sink compounds are wide-temperature, metal oxide-based heat transfer media that enhance thermal conductivity.

Optical Coupling Fluids and Gels

Nye's proprietary "index matching gels" are used as the connecting media for fiber optic splices and as "light bridges" in electro-optic and display devices. Non-melting, non-migrating, water-resistant, and oxidatively stable, they increase the efficiency of optical devices over broad temperature ranges.

Magnetic Recording Media Lubricants and Coatings

Nye is a single source for lubricants and fluids for disk drives and magnetic recording media. Products include proprietary spindle and ball bearing greases; NyeBar® barrier film; and Fomblin® PFPE products, manufactured by Ausimont, to coat disk surfaces.

Electrically Conductive Greases

Electrically conductive greases are used for many specialized applications including draining static electricity from bearings in computer equipment; ensuring ready transmission of current in overhead rolling conveyor electrical tracks; and preventing pitting and fluting caused by static discharge in electric motor bearings.



Specialty
Products



Specialty
SERVICES

Ultrafiltration

Recommended for all applications where contaminants can compromise operating life, ultrafiltration removes virtually all particulate matter greater than 35 microns. For greases, it also improves the homogeneity of the gellant. Nye offers ultrafiltration services for Nye oils and greases and those of other manufacturers.

Special Packaging and Repackaging

Nye packages its own lubricants – and repackages other manufacturers' lubricants – in a variety of convenient, application-specific dispensers. Oils can be packaged in vials, bottles, and "hypo" oilers; greases, in plastic squeeze tubes, pipettes, syringes, jars, cartridges, and foil blister packs. Aerosol cans, pump sprayers, shop-air containers, and felt-tip dispensers are available.

Lubricant Kits

Nye manufactures a variety of off-the-shelf lubricant kits, including a kit for hobbyists, a damping grease kit, an electronics lube kit, and an optical coupling gels kit. We also custom design and package private-label kits according to customer specifications.

Product Selection, Design and Sampling

Nye identifies, formulates, and provides evaluation samples of synthetic lubricants to meet a customer's product design specifications. Nye also works closely with design engineering teams to research and develop new proprietary lubricants for specialized applications.

Technical Seminars

Nye engineers offer on-site, industry-specific seminars on lubricant technology. Focusing on practical knowledge and real life case studies, the seminars enable design engineers to participate knowledgeably in the selection of the most appropriate lubricants for their applications.



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