

Automotive Lubricants



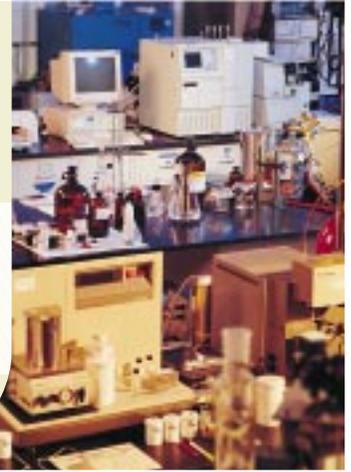
# Automotive Solutions

You design the component. We'll formulate the lubricant.



## A partnership you can rely on.

As vehicles get more complex and the marketplace becomes even more competitive, OEMs are insisting that suppliers take responsibility for quality, safety, performance, and reliability. At Nye Lubricants, we welcome the challenge. We've been supplying products that way for more than 150 years.

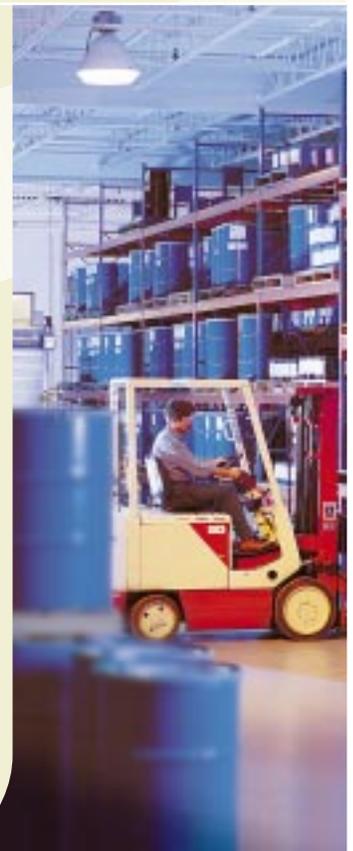


Today, Nye works closely with engineers from every major industry – including thousands of automotive engineers. Our message is a simple one: you design the component, we'll take care of the lubricant. With more than 500 proprietary synthetic lubricants, we probably have what you need right now. If we don't, we stock every commercially available synthetic oil, several experimental fluids not available in the marketplace, and a full spectrum of thickeners and additives which enables us to develop new lubricants for any mechanical or electromechanical device.

You get more than quality lubricants with Nye. We're a company of engineers with an unprecedented depth of application and technical experience. Our electrical, mechanical, materials, and industrial engineers, as well as chemists and physicists, are always available to solve lubrication problems, or help you avoid them altogether.

World-class R&D, manufacturing, and specialty packaging facilities round out the Nye offering. We provide precise, scientific analysis to determine a lubricant's suitability for your application. We manufacture lubricants in any quantity, including evaluation samples. We package oils and greases in a wide variety of dispenser-ready containers for the lab, factory or field. For sensitive applications, we ultra-filter oils and greases in a clean room environment. And wherever you work, our products, services, and support are always close at hand. We have satellite offices throughout the United States, including an automotive engineering office in Detroit, as well as representatives in more than 15 countries around the globe.

**For quality lubricants engineered for your automotive application, call us at 508-996-6721. With Nye, you can find a partnership you can rely on.**



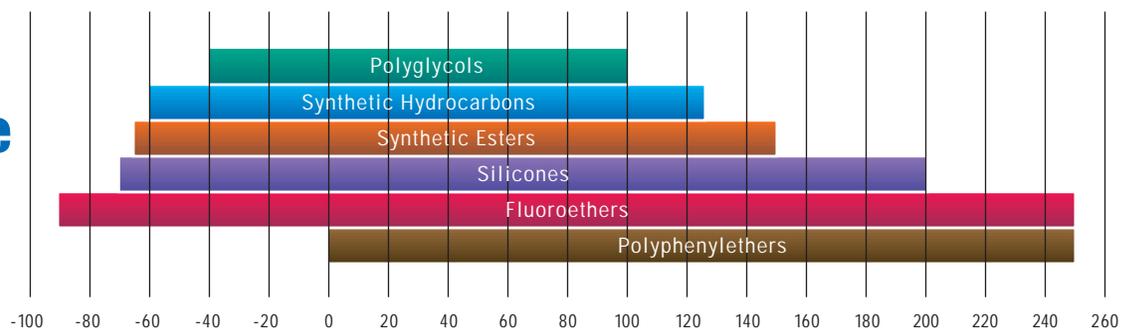
# Applications

## A Menu of Nye's Automotive Lubricant Applications.

With Nye, you always can count on a quality synthetic lubricant engineered to match the demands of your application. If you don't find your application listed below, let us know. We'll engineer and sample a new synthetic lubricant based on the specifications and operating environment of your component.

Actuators	Cables	Connectors	Motors
ABS	Brake	ABS	ABS
Air Bag Clock Spring	Climate Control	Airbag	Antenna
Climate Control	Clutch	Alternator	Cooling Fan
Cup Holders	Exterior Mirror	Battery	Electric Brake
Door Lock	Fuel Door Release	Cooling Fan	Electric Steering
Exterior Mirror	Hood Release	ECM/ECU	ETC
Grab Handles	Parking Brake	EGR	Fuel Pump
Hinges	Seat Recline	Firewall	HVAC Blower
Key Cylinders	Speedometer	Fuel Sender	Power Mirror
Latches	Sunroof	Headlamp/Tail lamp	Seat
Pedals	Throttle	Mass Air Flow	Starter
Power Sliding Door	Transmission	Multifunction Switch	Sunroof
PRNDL	Trunk Release	O2	Suspension
Seat Position	Window Regulator	Speakers	Trunk Pulldown
Springs		Starter	Window
Vent Controls		TPS	Wiper
Visors		Transmission Range Sensor	
Window Lift		Wheel Speed Sensor	
Powertrain	Sensors	Steering & Suspension	Switches
ABS	Exhaust Gas Recirculating	Ball Joint	Airbag Cutoff
Alternator	Fuel Level	Idler Arm	Climate Control
Caliper	Oxygen	Intermediate Shaft	Dash panel Dimmer
Clutch	Oil Pressure	Manual Steering	Dual Stalk
Condenser	Pedal Position	Pitman Arm	Hazard
CV Joint	Power Mirror Position	Power Steering Gear	Headlamp
Differential	Seat Position	Rack and Pinion Steering	Ignition
Drum Brakes	Steering Position	Shaft Bearings	Multifunction
Fuel System	Suspension Position	Shock Absorbers	Power Lock
Idler Pulley	Temperature	Stabilizer Bushings	Power Mirror
Idle Air Actuator	Throttle Position	Steering Yoke	Power Seat
Master Cylinder	Transmission Speed	Strut Bearing	Reading Lamp
Shifters	Wheel Speed	Tie Rods	Rear Defrost
Slip Yokes		Tilt and Telescope	Transmission Range Select
Supercharger			Trunk Release
Throttle Plate			Turn Signal
Transfer Case			Window Lift
U Joints			
Water Pump			
Wheel Bearings			

## Temperature Range °C



# Lubricants

## Different Components Require Different Lubricants.

Next to excellence in design, nothing contributes more to the quality of an automotive component than the right synthetic lubricant. At Nye, we know it's more than temperature ranges and material compatibility that make a synthetic lubricant the right synthetic lubricant.

Each electromechanical device wears in different ways – from vibration, rotation, sliding, backlash, frequent start/stops, corrosion, thermal cycling, static electricity – or a combination of these, and each requires a different lubricant, formulated for specific operating conditions. That's what you get from Nye – synthetic lubricants expertly engineered to meet the unique demands of your automotive component. Next to your design, they're your best assurance for smooth performance and long component life.



## Actuator Lubricants

Nye actuator lubricants not only get you through rigorous, rapid-cycle testing, they maximize the operating life of your design. Choose from metal, plastic, and rubber-compatible lubricants, each engineered specifically for the slides, cams, gears, and other mechanisms found in automotive actuators. Nye offers actuator greases that are impervious to water, salt water, underhood fluids, and wide temperature fluctuations. For hand-operated actuators, our greases quiet mechanical noise and allow you to select the tactile "feel" most appropriate for the device.



## Cable Lubricants

Nye's cable lubricants deliver the smooth, quick, responsive operation you want from cable assemblies – from -40°C to 150°C. Engineered to wet and adhere to the cable and liner surfaces, these lubricants are super efficient, pushing cable assemblies well beyond the requirements of today's demanding cycling tests. They also improve the perceived quality of hand-operated cables by mechanically reducing vibration, thereby eliminating undesirable noise and annoying tactile sensations.

## Connector Lubricants

Nye connector lubricants minimize common electrical problems, a major warranty cost for automakers. For traditional tin/lead and noble metal connectors, they reduce fretting and environmental corrosion, common causes of erratic operation and premature failure, and cut insertion forces by as much as 80 percent. For fiber optic data, illumination, and display applications, Nye's optical coupling gels serve as a "index-matching" bridge to ensure maximum signal transmission. Nye also manufactures electrical grade stamping oils which leave no residues that impede conductivity. Whatever role connectors play in your design, Nye has the lubricant and experience you need.



### Electrical Motor Lubricants

With up to 60 motors in a typical automobile, Nye has engineered a broad family of electrical motor lubricants. All ensure low noise and maximum output efficiency from -40°C to 150°C. Tailored to the operating environment, Nye has lubricants that resist water, salt water, and underhood fluids; that quiet the cold temperature hooting associated with some underhood motors; that dissipate static electricity to reduce safety hazards in fuel pump motors; and that eliminate the problem of low-temperature torque – even for flea-powered motors.



### Powertrain Lubricants

A well-designed powertrain delivers more engine efficiency, better fuel economy, and a quieter drive. Nye's alternator, differential, U joint, wheel bearing, and other powertrain lubricants are designed to help you achieve these goals. Transferring power with minimal heat and noise, these lubricants are designed specifically for start/stop conditions, high and low speed operation, and heavy loads. Resistance to water, salt water, road grit, and harsh underhood fluids is standard. Currently suitable for -40°C to 150°C, a family of 200°C-capable powertrain lubricants is already waiting in the wings to meet more stringent temperature requirements in the new millennium.

### Sensor Lubricants

The accuracy and operating life of automotive sensors are directly related to the quality of the lubricant used on both sensitive electrical and mechanical components. To meet a broad range of design needs, Nye offers light, low-shear sensor greases for very low power applications; sensor lubricants with exceptional film strength to accommodate heat generated by resistance; thermally conductive lubricants that boost the accuracy of temperature sensors; and unique underhood sensor lubricants that withstand years of vibration, thermal cycling, temperature extremes, as well as salt spray, sand, road grit, and underhood fluids.



### Steering and Suspension Lubricants

Vehicles used to have grease fittings simply because the original grease wasn't designed for the life of the component. All Nye's steering and suspension lubricants are. They eliminate squeaks and rattles from power steering gears, ball joints, shock absorbers, and other mechanisms. They also are engineered to resist water and salt water, tolerate high loads and vibration, and minimize friction and wear – even on rough terrain where steering and suspension components take a beating.

### Switch Lubricants

Designed to meet the 3X life standard, Nye switch lubricants are available for tin, copper, brass, and noble metal contacts. Tailored to low, medium, or high current switches and formulated for light, medium or heavy loads, these lubricants guard against millivolt drop, open circuit resistance problems, and "-40°C contact bounce." Underhood, they withstand thermal cycling and temperature extremes, from -90°C to 250°C. They also resist humidity, dust, water, salt water, fuel, and underhood fluids. For the mechanical parts of a switch, Nye's proprietary family of "damping greases" provides an economical way to control the sound and feel of a switch.





The World Leader in Synthetic Lubricants

