





Welcome to Nye

Nye Lubricants, Inc. is a leader in the innovation, formulation and manufacture of synthetic lubricants. We bring together integrity, proven experience and deep technical knowledge to solve our customers' toughest challenges and add value to products in a wide range of industries and applications.

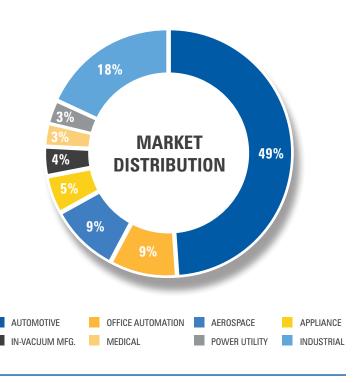
Nye is privately owned with 170 employees and 28 International Channel Partners on six continents. We formulate, manufacture, market and sell high-quality synthetic oils, greases, specialty fluids, and index matching optical gels. Our product development process is focused on the customer's performance specifications, cost and warranty requirements. Nye services a broad range of industries, with a concentration of our business in the automotive, in-vacuum manufacturing, computer printer, disc drive, appliance, aerospace, defense, medical device, and power utility markets. We also manufacture industrial maintenance lubricants for incidental food contact, high temperature and other extreme environments. All Nye products are carefully engineered materials, formulated for a specific application and typically developed in consultation with a customer's engineering department.

Nye's mission is to partner with innovative companies to develop high-performance solutions using our lubricant technology and engineering expertise.

Heritage Founded in 1844, Nye's history is one of continual adaptation to market needs. From the Industrial Revolution to the Information Age, Nye has enabled and improved breakthrough products and critical new technologies. Among Nye's many customers, we serve the top 25 global automotive parts suppliers, the world's largest aerospace and defense contractors, name-brand appliance and power tool companies, manufacturers of 60 percent of the world's computer printers and several leading in-vacuum equipment manufacturers. Nye's lubricants add value to thousands of products around the globe.

Vision Nye will be recognized globally as both an integral partner and an engineered materials expert, providing lubricant solutions which combine leading-edge technology and a fundamental understanding of its customers' needs.

Technology Nye's products are based on a full range of synthetic chemistries, including polyalphaolefins, esters, glycols, polyphenylethers, silicones, alkylated naphthalenes, and all four types of perfluoropolyethers (PFPE). Through an agreement with Shell Global Solutions, Nye is also the exclusive global reseller of Pennzane® multiplyalkylated cyclopentane fluids.



2 NyeLubricants.com

Brands The Nye family of brands includes the following trademarks and registered service marks: Nye®, NyeBar®, NyeClean®, NyeCorr®, NyeFilm®, Nye Fluorocarbon Gel™, NyeMed®, NyeTact®, NyeTorr®, Nye Ultrafiltered®, NyeVac®, NyoGel®, NyOil®, NyoSil™, Rheolube®, Rheoplex™, Rheosil™, Rheotemp™, and UniFlor™.







Research & Development Tribologists, chemists, mechanical, electrical, chemical and optical engineers all bring their expertise to Nye's product development efforts. We partner with raw material suppliers to test new fluids, additives, thickeners and formulation methods. We work closely with customers and routinely enter into

Non-Disclosure and Joint Development Agreements. We also seek out relationships with universities, research consortiums, and engineering departments at some of the world's most innovative companies to continually improve our technical knowledge and services.

PARTIAL LIST OF R&D EQUIPMENT



- E595 In-Vacuum **Outgassing Measurement**
- EMCOR Corrosion Tester
- Falex 4-Ball EP & Wear Stand
- · Fourier Transform Infrared Spectroscopy (FTIR)
- · Gel Permeation Chromatograph
- Instron Force Tester
- Knudsen Vapor Pressure Tester
- Low Temperature Torque Measurement Chamber
- Particle Generation Analyzer
- · Particle-Size Counter

- Penetrometers
- · Pressure Differential Scanning Calorimeter (PDSC)
- Profilometer, 3-D Wear Analyzer
- Rheometers
- Scanning Electron Microscope
- SKF® BeQuiet+
- SRV-IV Tribological Test System
- Thermogravametric Analyzer (TGA)
- Viscometer
- · Water Spray Off Tester
- Water Washout Tester

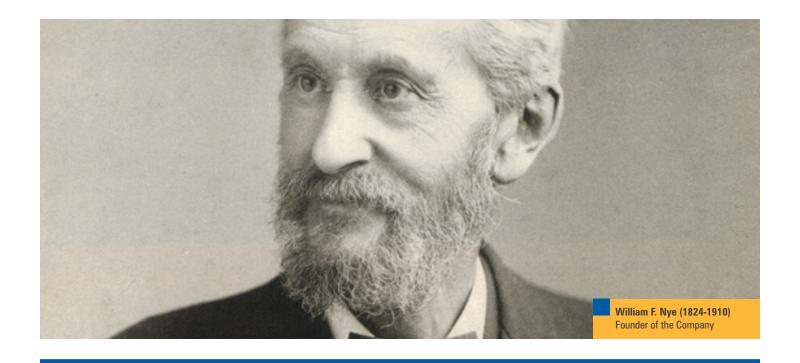
Operations Nye is headquartered in Fairhaven, Massachusetts. Our facilities include R&D and production labs, clean room operations, specialty packaging, production lines, and administrative offices. Our technical sales and support offices serve over 50 countries worldwide. Annual grease production capacity is >5 million pounds. Our products are available in a wide variety of packages, including blister packs, pouches and syringes, jars, tubes, cartridges, pails, drums, and totes. We assemble lubricant kits, which customers often use for field maintenance. We also private label any Nye product under customer brand names.



OTHER SERVICES

- Custom Application Testing
- Deaeration
- Lubricant Dispensing Support
- Lubricant Education
- Lubricant Failure Analysis
- Lubricant Profiling
- · Lubricant Sampling
- Pre-Qualification Lubricant **Testing**
- Specialty Lubricant Formulation
- Technical Support
- Ultrafiltration

^{*} Pennzane is a registered trademark of Shell Global Solutions.



A History of Nye: The Beginning of William F. Nye Inc.

In 1840, William Foster Nye, barely 16 years old, left his family's Cape Cod farm to carve his niche in the world of commerce. Before his death 70 years later, he would create a line of lubricating oils sought around the globe — and a company that still bears his name today.

Apprentice to a master carpenter, Nye began his long career in New Bedford, Massachusetts. But he had a wanderlust to quench before settling into what would eventually become a lifelong pursuit.

He left New Bedford to build organs in Boston, took to sea as a ship's carpenter, worked at an ice house in Calcutta and went to California for the Gold Rush, where he built a profitable business as a stair builder after the San Francisco fire. He returned to New Bedford to start an oil and kerosene business, and then left to serve in the Union Army as a sutler, a traveling merchant – the first to set up shop in Richmond after the defeat of the Confederate Army.

In 1865, he returned again to New Bedford and the oil business, first out of the kitchen of his Fairhaven home, then from a small store front in New Bedford. He sold a wide assortment of oils: burning oils, lubricating oils, even castor oil and salad oil. However the market niche he set out to capture was lubricating oils for delicate machinery: watches, clocks, chronometers, and later, sewing machines, typewriters, bicycles and electrical instruments.

He capitalized on the work of New Bedford watch maker Ezra Kelley. Kelley discovered that oil from the jaw and head of the porpoise and blackfish proved superior to any other known lubricant for delicate mechanisms, and his oil, which he began selling in 1844, had become a benchmark industry. Nye became Kelley's chief competitor. He

developed his own brand of "fish jaw oil," but had to overcome strong market resistance to a new brand name. He started at the top. With the help of a trade journal publisher, he persuaded Cross and Beguelin, a leading manufacturer of watch and clock components in New York, to try his new formulation. Impressed with its quality, they adopted it as their own, and word about Nye's oil quickly spread throughout the industry.

Within 10 years, Nye had moved from his small, rented storefront to his own stone factory on Fish Island in New Bedford – and he was well on his way to building a solid reputation for having "the best watch oil in the world."



on high and in their preparation for use, and more than all, the thorough and Severe Test they have been subjected to n use upon Chronometers in our Whale Ships, often absent from 50 to 60 months.

Liberal samples turning of your agents in every saming asserted and active and all clock oils, and I have foun if have tested chemically and otherwise, samples of W. F. Nye's chronometer, watch and clock oils, and I have foun them as free from acid, grun, resin, and other noxious substances, as any oil which has been brought to my notice. The processes the nocessary qualifications for a safe thericate for timepiotes in as great a degree as a rest. The market.

"New York, February 4th, 1878.

SOLE AGENT'S for this country, R. HASWELL & SONS, 49, Spencer Street, Clerkenwell

Nye's Advertisement in *The Horological Journal*, **July 1878.**Within six months of his first notice in his journal, Nye had secured a British distributor and had begun a price war with Ezra Kelley by offering liberal discounts to dealers.

4 NyeLubricants.com

Nye's Advertisement in Supplement to The THE NEW BEDFORD MERCURY New Bedford Mercury in 1907. Nye cultivated local markets for his products with advertisements like this one. WILLIAM F. NYE OILS FOR LUBRICATION FOR MILLS, FACTORIES AND WORKSHOPS, - AND ESPECIALLY -The finer grades adapted to the delicate mechanisms of modern invention and rapid production of Watches, Clocks, Typewriters, Firearms, Adding Machines, Cash Registers, Time Recorders, Bank Locks, Telephone and Telegraph instruments, Sewing Machines, Bicycles, Automobiles, and the many household purposes. Especially prepared for the prevention of rust on highly polished tools and instruments of all kinds. Taking WILLIAM F. NYE'S Watch, Clock & Chronometer Oil







SOUTH SIDE FISH ISLAND, NEW BEDFORD, MASS., U.S.A.

Nye's Invoices (circa 1910). Invoice for oils lubricating bicycles and watches.

NICHE MARKETING IN THE "90S" (SHORT STORY)

Nye had an uncanny ability to identify a profitable market niche. One example: the bicycle – a U.S. industry that went from zero to \$60 million in sales in less than seven years.

Shortly after the bicycle's introduction to the U.S. in 1889, Nye introduced "Lily White," a pure white, stainless, bicycle oil. He exhibited it to rave reviews at the first national bicycle show in Madison Square Garden in 1897, where he offered a reward of "\$1,000 to anyone producing an oil equal in every essential quality to his own."

No one accepted the challenge. NICHE CAPTURED.





KEEPS ON TICKING (A LETTER FROM A CUSTOMER)

Jan. 12th, 1896

Dear Mr. Nye,

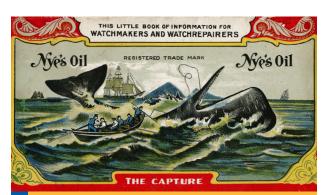
William F. Nye Chronometer Oil

I have been in the watch repairing business for the past four years, and have used your oil on every watch I have cleaned, which has been about 3,000, and have never had a customer say his watch stopped from freezing weather. I enclose you a weather report of this place, so you can see for yourself 50° below zero, which is very cold, and it has been lower still.

A. L. H. Brown, Watchmaker Calgary, Alberta, N.W. Ter., Canada



Far and Near: Nye exhibited his products across the country - and across the Atlantic. But he also set up his display at home, at the Semi-Centennial Industrial Exhibition of 1897, which commemorated the 50th anniversary of New Bedford's incorporation as a city.



This Little Book. In the early 1900's, Nye published this tutorial on watch and clock oils for the trade, in which he also promoted his own product as "the only known oil that will stand three years on the pivots of a watch without change."



Not Genuine Without My Signature: By the 1890's, Nye was filling, corking, packing and shipping more than 144,000 bottles of his oils monthly enough bottles to keep 20 people at Pittsburgh's Flint Glass Factories working full-time to produce bottles for the Nye account.

Capturing the World Market

Nye's rise to fame as a world-class manufacturer of specialty oils was propelled by a marketing effort that would be the envy of any modern-day entrepreneur.

Nye advertised in trade journals, making good use of notable testimonials. Ungerer Bros., Keepers and Repairers of the Strasbourg Cathedral Clock; The Waltham Watch Co.; Elgin Watch Co.; Giles Bros. & Co., inventor of the antimagnetic shield for watches; The Chicago Watchmaker's Institute – all touted the benefits of Nye oils.

Nye frequently exhibited his product at the "trade shows" of the day — including several World Fairs, the Columbian Exposition, the Paris Expo of 1889, where Gustav Eiffel unveiled his famous tower. At industry symposia, he presented papers on his oils that, according to the press, "were used by inventors of electrical appliances, locomotive speed recorders...and the most delicate automatic machinery."

By 1889, William F. Nye, the consummate marketer, had become the largest manufacturer of sewing machine, watch and clock oils in the world, producing more than 150,000 gallons annually for bulk delivery — plus over two million bottles for jobbers and retail sales. In January of 1896, he absorbed his chief competitor, Kelley, and established an unbroken line to the 1844 origin of this specialized business. By year's end he had tripled the size of his factory, cornered the market on raw materials, stockpiled nine-tenths of all fish jaw oil in the world — and captured the world market.

6 NyeLubricants.com



Quality: The Foundation for Success

Nye believed in marketing, but quality products, each responding to a particular market need, were the foundation of his company's success. In 1901, as reported in his home town newspaper, he attended the Pan American Exhibit with no less than 32 varieties of oils, each adapted to their specific applications as to their fire test, cold test, specific gravity and viscosity.

An innovator in the industry, Nye maintained a laboratory at his Fish Island plant in New Bedford Harbor for what today would be called Quality Control and R&D. He also constructed his own bottling machine, patented by his son Joseph, which filled either one, two or three ounce bottles - a gross at a time. Untouched by human hands, the oil passed from tanks on the third floor through pipes directly into the machine, which could fill nearly 4,400 bottles an hour. Spillage from broken bottles was caught in a tray and pumped automatically up three stories to the holding tank.

One of the most adventurous quality efforts initiated by Nye was a refinery he established in an old rolling mill in St. Albans, Vermont. To respond to a market demand for an oil that would function at

lower temperatures, Nye tried refining his fish jaw oil in the sub-zero, winter temperatures of the Canadian border town. His experiments were successful. The process not only freed the oil from impurities "that corrode or blacken pinions," but his "St. Albans oil" maintained its lubricating properties from -50° F. to $+200^{\circ}$ F.

Nye oil became synonymous with quality. It won awards at nearly every exhibition. But perhaps the greatest testimony to its superiority, was that it was known and asked for by name throughout North and South America, Europe, the Far East, Australia and New Zealand.



FROM FISH TO FINISH

Total Quality Management may be a late 20th century concept, but William F. Nye embraced it 100 years ago.

Nye unknowingly accepted a shipment of crude dolphin head oil that had been mixed with a lower grade oil by an unscrupulous supplier. The ruse wasn't discovered for two years - the length of Nye's refining process - when the oil went to market. With his reputation threatened, Nye wrote that the only way to ensure quality product was to control the manufacturing process "from fish to finish."

He directed his son Joseph to establish a porpoise fishery on Cape Hatteras. Several 15 man crews, with boats and seines, would herd porpoise to shore, render the oil from the head and the jaw, and begin the refining process at beach front factories, before shipping the crude oil to Nye's New Bedford or Vermont refinery.

The result boasted Nye, was "a much finer article than has been put out by any manufacturer."



William F. Nye's R&D Lab on Fish Island, 1907.

Continuing Tradition

Nye's porpoise jaw oil sold on the world market until the 1970s, though finding reliable sources for the raw material became progressively more difficult after his death in 1910.

Nye's son, Joseph, managed the company until 1923 when it passed to business associate and friend, Anderson Kelley. The Kelley family operated the firm until 1956, during which time they secured the crude oil from Canada - and from occasional stranding of blackfish on Cape Cod.

The third and current owners, who originally bought the business only for the real estate, decided to rejuvenate the company after seeing its rather impressive client list, which included Bulova Watch, Eastman Kodak, GE and IBM. They continued to obtain raw blackfish head oil from Newfoundland. Later, they formed new supply agreements with a fishing cooperative in the British West Indies, where natives still hunted blackfish for food.

They also saw the handwriting on the wall; the harvesting of ocean mammals was threatening their extinction. In the early 1960's, more than a decade before the Marine Mammal Protection Act outlawed the importing of the company's traditional raw material, the new owners began the transition from porpoise oil and petroleum-based products to synthetic functional fluids.

Today, synthetic hydrocarbons, esters, polyglycols, silicones, polyphenyl, and fluorinated ethers are the "raw materials" for Nye lubricants. But, the tradition that began more than 170 years ago continues. For specialty lubricants that meet the most rigorous demands of today's "delicate machinery," companies who want the best still turn to Nye.

THEN & NOW

We've changed over the years. Our lubricants, now synthetic, offer far more functionality than petroleum and a porpoise jaw oil ever could. Our application list, though it still includes watches, consists of devices not yet dreamed of in 1844: automotive instrumentation, antilock braking systems, medical devices, aerospace controls, computer peripherals, invacuum manufacturing equipment and appliance timers to name a few.

But while our products and applications have changed, the principles upon which this company was founded haven't changed that much in 170 years. Like William F. Nye, we specialize in lubricants for "delicate machinery." We develop products to meet our customers' specific needs. Most importantly, like our founder, we still stake our reputation on the quality of our products. Then and now, if it bears the name Nye, people expect nothing less.



8

12 Howland Road Fairhaven, MA 02719 USA Ph: +1.508.996.6721

Email: contact@nyelubricants.com

Nye Channel Partner Network

AFRICA

EGYPT, LIBYA, LEBANON, JORDAN, SAUDI ARABIA Alpha Engineering & Trading Cairo, Egypt +20-2-2633-9984

SOUTH AFRICA, MAURITIUS Lubricorr Pty. Ltd. Pretoria, South Africa +27-82-77-55-888

ASIA/AUSTRALIA

AUSTRALIA Hi-Tec Oil Traders Pty. Ltd. Castle Hill, Australia +61-2-9616-5700

CHINA Dulub Shanghai Shanghai, China +86-21-33500468

Dulub Shenzhen Shenzhen, China +86-755-8297-0212

INDIA, SRI LANKA Anand Engineers Pvt. Ltd. Anderi (East) Mumbai, India +91-22-2821-9292

ISRAEL Petro-Tech Ltd. Holon, Industrial Area, Israel +972-3-6535000

JAPAN Tsuchiya Co., Ltd. Nagoya, Japan +81-52-331-5451

MALAYSIA Dulub (Malaysia) Sdn. Bhd. Penang, Malaysia +6012-402-9503

NEW ZEALAND Electropar Ltd. Greenmount East Tamaki New Zealand +09-774-7000

PAKISTAN, BANGLADESH, UNITED ARAB EMIRATES Cinq Astre Enterprises Lahore, Pakistan +00-92-425832361

SINGAPORE, INDONESIA Dulub Singapore Pte., Ltd. Singapore +65-6734-3246

SOUTH KOREA Dulub Korea Co., Ltd. Daegu, South Korea +82-53-600-8899

TAIWAN
Dulub Co., Ltd.
Kaohsiung, Taiwan R.O.C.
+886-7-5365500
Taipei City, Taiwan R.O.C.
+886-2-2796-8401

THAILAND Tsuchiya Co., Ltd. Bangkok, Thailand +66-02-637-5859

VOV International Co., Ltd. T. Kookot A. Lumlooka, Thailand +66-02-995-7470

EUROPE

DENMARK, FINLAND, NORWAY, SWEDEN aVenture Group Lindome, Sweden +46-(0)3144-3300

FRANCE Inland Europe-Neyco Paris, France +33-(0)1-41-90-5050

GERMANY, AUSTRIA, SWITZERLAND, HUNGARY, CZECH REPUBLIC, POLAND Newgate Simms Arheilger Weg 11 D-64380 Rosdorf, Germany +49-6154-637677-46

ITALY
Tecnolube Seal, s.r.l.
San Pietro in Cariano
Verona, Italy
+390-45-770-2389

SPAIN, PORTUGAL Prolutec, S.A. Barcelona, Spain +34-93656-6061

UNITED KINGDOM, IRELAND, NETHERLANDS, BELGIUM, LUXEMBOURG Newgate Simms Ltd. Chester, England +44-124-466-0771

TURKEY
Antsan Import Export & Consultants
Ankara, Turkey
+90-312-480-70-52

LATIN AMERICA

BRAZIL CAPMA Ltda. São Paulo, Brazil +55-11-4522-3492

MEXICO TransAmerica Lubricants de México S.A. de C.V. Juárez, Chihuahua, México +52-656-170-0150, 51, 52

TransAmerica Lubricants Guadalupe, N. L., México +52-818-243-4352

CENTRAL &
SOUTH AMERICA
(except Brazil)
TransAmerica Lubricants
+52-656-170-0150, 51, 52