



**Syn-Tech** Ltd.

**The Finest Specialty Lubricants in the World**



## Lubricant Application Sheets

**Automotive Mechanical Lubricants**

**Automotive Electrical Contact Lubricants**

**Airbag Rotary Connector Lubricants**

**Synthetic Hydrocarbon Damping Lubricants**

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**Mechanical Lubricants**

**Electrical Contact Lubricants**

**Pneumatic Cylinder Lubricants**

**Aerospace Lubricants**

**Fluor-Tech Full Spectrum PFPE Lubricants**

**Corporate Overview**

### **Our Expertise**

Syn-Tech has evolved many products that satisfy applications of many types. Experience and in-house testing facilities have generated the knowledge to create and modify new and existing products to perform under rigorous demands. Contact our offices for assistance in lubricant selection.

### **Contact Us:**

Syn-Tech Ltd.  
1433C. W. Fullerton Ave.  
Addison, IL 60101  
USA  
Phone (630) 620-7050  
Fax (630) 620-4832  
email: [sales@syn-techlube.com](mailto:sales@syn-techlube.com)  
[www.Syn-Techlube.com](http://www.Syn-Techlube.com)



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## Automotive Mechanical Lubricants

Lubricants designed for automotive mechanical applications must protect components from wear, corrosion, dust and humidity. Lubricants must also be capable of performing in temperature extremes from hot engine compartments to cold overnight soaks at -40°C (-40°F). Compatibility with the applications metals, plastics and elastomers must also be considered. For lubricants that improve tactile feel of controls see our Smooth Feel Lubricants, Damping Lubricants or Silicone Damping Lubricants tech sheets. The following are just some of the products Syn-Tech currently supplies to the automotive industry.

Product	Description	-40°C operation	+145°C operation	Gears	Slides, Plain Bearings	Cables	Latches	Push Buttons, Levers	Plastic on Plastic	Metal on Metal	Plastic on Metal	PTFE Enhanced	Plastics Friendly (ABS, PC Compatible)
<b>NS-396-G</b>	Synthetic hydrocarbon, Li soap thickened	X	X	X	X			X	X		X		X
<b>NS-3297-G</b>	Synthetic hydrocarbon, Li soap thickened	X	X	X	X			X	X		X		X
<b>NS-2594-G</b>	Polyol ester, Li soap thickened	X	X		X	X	X			X		X	
<b>NS-2595-G</b>	Silicone, Li soap thickened	X	X		X				X		X		X
<b>NS-2506-G</b>	Synthetic Hybrid, Inorganic Thickened	X	X	X	X		X			X			
<b>NS-8904-G</b>	Silicone, PTFE thickened	X	X	X	X	X		X	X		X	X	X
<b>NS-6805-G</b>	Synthetic hydrocarbon, Organic Polymer Thickened	X	X	X	X		X			X			X
<b>NS-7796-GUL</b>	Ester, Li soap thickened	X		X	X	X			X	X	X		
<b>NS-7505-G</b>	Synthetic hydrocarbon, Organic Polymer Thickened	X	X	X	X	X	X			X	X	X	X
<b>NS-9797-G</b>	Synthetic hydrocarbon, Li soap thickened	X	X	X	X	X	X	X	X	X	X	X	X
<b>NS-9895-G</b>	Petroleum, clay thickened	X	X	X	X	X	X		X	X	X		X
<b>NS-10895-G</b>	Synthetic hydrocarbon, Li soap thickened	X	X	X	X	X	X		X	X	X		X
<b>NS-12290-G</b>	Ester, clay thickened	X	X	X	X	X	X		X	X	X	X	

Product Name	Description	Typical Application	Temp Range °C
NS-396-G	Synthetic hydrocarbon, Li soap thickened	For mechanical interface lubrication requiring mechanical stability, low fluid migration, low evaporation, low mechanical friction and anti-wear protection at high temperatures. Applications include windshield wiper motors, small gearboxes and switches.	-40 to +149
NS-3297-G	Synthetic hydrocarbon, Li soap thickened	For mechanical interface lubrication requiring mechanical stability, low fluid migration, low evaporation, low mechanical friction and anti-wear protection. Excellent low temperature performance. Applications include windshield wiper motors, switches, small gearboxes and similar applications.	-45 to +149
NS-2594-G	Polyol ester, Li soap thickened	For applications requiring superior -40°C performance, high mechanical lubricity, low friction, mechanical stability, low capillary action and excellent oxidation and thermal stability. PTFE fortified for low frictional properties. Applications include automotive shift cables, door latches, low to medium load gearboxes and sliding interfaces.	-45 to +149
NS-2595-G	Silicone, Li soap thickened	For applications requiring low drag as well as damping and noise control. High stability, low evaporation and anti-wear on plastic and metal surfaces. Applications include automotive shift cables, slides and similar applications.	-40 to +149
NS-2506-G	Synthetic Hybrid, Inorganic Thickened	High lubricity grease for metal on metal applications. Unique blend of solids and base fluids gives outstanding wear resistance with good anti-squeak on breakaway. Non-melting.	-40 to +150
NS-8904-G	Silicone, PTFE thickened	A high viscosity non-melting PTFE enhanced lubricant for sliding metal on plastic and plastic on plastic applications. High thermal stability, low capillary action, smooth feel, high mechanical damping and reduced stick-slip.	-40 to +200
NS-6805-G	Synthetic hydrocarbon, Organic Polymer Thickened	Water resistant roller bearing lubricant. Corrosion and antiwear additives.	-40 to +150
NS-7796-GUL	Ester, Li soap thickened	For metal on plastic and plastic on plastic gears requiring excellent low temperature performance, excellent thermal stability, smooth feel and damping on plastics and metals. Applications include HVAC controls, low to medium load gearboxes and similar applications.	-45 to +121
NS-7505-G	Synthetic hydrocarbon, Organic Polymer Thickened	Fully synthetic water resistant bearing grease. High stability at high temperatures. Additives for rust and corrosion prevention. PTFE enhanced.	-45 to 200
NS-9797-G	Synthetic hydrocarbon, Li soap thickened	For application requiring high mechanical lubricity, low friction, excellent oxidation and thermal stability, smooth feel and damping. Contains PTFE for excellent low frictional properties. Applications include low to medium load gearboxes, cables, screw actuators, sliding interfaces and similar applications.	-40 to +149
NS-9895-G	Petroleum, clay thickened	A non-melting grease for applications requiring long service life, stability, rust and corrosion protection with antiwear and extreme pressure additives for high load capabilities. Applications include window regulator counter balance springs, cables, levers, and cams.	-40 to +149
NS-10895-G	Synthetic hydrocarbon, Li soap thickened	For applications requiring low drag, damping and noise control. Formulated with EP, antiwear, rust and corrosion protection for use in low and high temperature requirements. Applications include seat track lubrication, light duty gearboxes, bearings, cables, plastic gears and slides.	-40 to +135
NS-12290-G	Ester, clay thickened	For applications requiring a non-melting grease with a long service life, thermal and mechanical stability, antiwear, rust and corrosion protection. Formulated with EP additives and PTFE for high load capability. Applications include window regulator clutches, door checks, light duty gearboxes, cables, levers and cams.	-40 to +177

11/05 Rev2

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## Automotive Electrical Contact Lubricants

Lubricants designed for automotive electrical applications must protect components from wear and corrosion, while providing protection against external elements such as dust, moisture intrusion, humidity, high engine compartment temperatures and long overnight soaks at -40°C (-40°F). Electrical lubricants should be chosen dependent on contact design (sliding, butt action, slip ring, etc.), contact forces, switching current requirements and compatibility with plastics, elastomers and metals. Low current switching with low contact forces may require a lubricant with different chemical and physical properties compared to switching high current with high contact forces. Some current Syn-Tech applications are:

- Multifunction Switches
- Power Window Switches
- Power Door Switches
- Power Mirror Switches
- Trunk Switches
- Ignition Switches
- Hazard Warning Switches
- Headlamp Switches
- Power Seat Switches
- HVAC Switches

The following are just some of the products Syn-Tech currently supplies for automotive electrical applications. Some of these products may also be used for light duty mechanical lubrication on gears, slides and bearings.

### Wide temperature range low arc debris contact lubricants

Product	Description	Typical Application	Temperature Range (°C)
<b>NS-1702-G</b>	Glycol, Inorganic thickened	Non-melting grease for high current switching with low arc debris. Inhibited for Cu and Ag corrosion with good mechanical and chemical stability. Applications include high current switches, potentiometers and similar devices.	-40 to +149
<b>NS-7502-GA</b>	Glycol, Li Soap	High current switching with low arc debris. Inhibited for Cu and Ag corrosion with enhanced contact antiwear. Also exhibits good mechanical and chemical stability. Applications include high current switches, potentiometers and similar devices.	-40 to +120
<b>NS-8705-G</b>	Glycol, Organic Polymer	High current switching with low arc debris. Inhibited for Cu and Ag corrosion with good contact antiwear. Also exhibits good mechanical gel stability with good moisture resistance. Applications include high current switches, potentiometers and similar devices.	-40 to +120

These products are not compatible with ABS, polycarbonate, polyester, PPO, or PVC plastics, or buna S, butyl, or neoprene elastomers.

## Wide temperature range plastics friendly electrical contact lubricants

Product	Description	Typical Application	Temperature Range (°C)
<b>NS-396-G</b>	Synthetic hydrocarbon, Li Soap	For low current applications requiring low arc debris, nonferrous (copper, brass, silver) corrosion protection, excellent mechanical stability, low fluid migration and low evaporation at high temperatures.	-40 to +149
<b>NS-7696-G1</b>	Synthetic hydrocarbon, Li Soap	For low current non-arcing sliding contact switches. Exhibits good corrosion protection on Cu, Cu alloy, Ag, Au and Ni metals in areas of high humidity. Applications include turn signal switches, window lift switches and power seat switches.	-40 to +149
<b>NS-8805-G</b>	Synthetic hydrocarbon, Organic Polymer	For low and medium current sliding contact switches. Exhibits excellent corrosion protection on Cu, Cu alloy, Ag, Au and Ni metals in areas of high humidity. Applications include turn signal switches, window lift switches and power seat switches	-40 to +149
<b>NS-62100-GUV</b>	PFPE, Inorganic Thickener	High grade PFPE grease. Low volatility and high oxidation resistance for extended durability in thin films. Extremely wide operating temperature range. Contains an ultraviolet reactive tracer.	-70 to 200

Compatible with most engineering plastics including polycarbonate and ABS.

## High Performance wide temperature range electrical contact lubricants

<b>NS-2402-G</b>	Polyol ester, Li Soap	For high current applications requiring low arc switching debris, durability and corrosion protection for Cu, Cu alloy, Ag, Au and Ni metals. Excellent mechanical stability, low fluid migration, good mobility at low temperatures and low evaporation at high temperatures. Applications include transmission neutral start switches and similar high temperature, low current devices.	-40 to +141
<b>NS-1102-G</b>	Polyol ester, Li Soap	For high current applications requiring extended operation at high temperatures, low arc switching debris, reduced sliding wear and corrosion protection on Cu, Cu alloys, Ag, Au and Ni metals. Excellent mechanical stability, low fluid migration, and low evaporation at high temperatures. Applications include transmission neutral start switches and similar high temperature devices.	-40 to +150
<b>NS-2802-G</b>	Polyol ester, Li Soap	For low and high current applications with excellent protection against sliding contact wear. Good protection against nonferrous metal corrosion due to humidity. Applications include turn signal switches, window lift switches, power seat switches and ignition switches.	-40 to +149
<b>NS-8605-G</b>	Polyol ester, Organic Polymer	For low and high current applications up to 25 amps with excellent protection against sliding contact wear. Very good protection against nonferrous metal corrosion due to humidity. Applications include turn signal switches, window lift switches, power seat switches and ignition switches.	-40 to +149

These products are not compatible with ABS, polycarbonate, polyester, PPO, or PVC plastics, or buna S, butyl, or neoprene elastomers.

11/05 Rev3

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#### Our Expertise

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Syn-Tech Ltd.  
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## Airbag Rotary Connector Lubricants

Automotive steering wheels for passenger cars and light to medium trucks typically have crash triggered inflatable air bag devices as part of their occupant safety systems. To assure a reliable path for an electrical signal to reach the air bag inflation firing unit, a solid wire connection is used. Because the steering wheel rotates relative to the instrument panel, a device looking much like the main spring on a mechanical watch is used for this function from which the name "Clock Spring" or rotary connector has evolved.

This conductor or tape often contains additional discrete parallel electrical conductors for cruise control, radio, and HVAC system steering wheel controls. The winding and unwinding of the multi-conductor tape (clock spring) typically generates noises and sounds considered objectionable in today's very quiet vehicle interiors. The sliding of the tape on the housings and other rotating hub interfaces generate wear issues.

Lubricant selection parameters include: high/low operating temperature range, absolute torque/force specifications, component materials, and lubricant oil separation and migration qualities.

The following table lists the more popular Syn-Tech lubricants in use on long tape and short tape design clock springs.

Lubricant	Damping	Temperature	PTFE Size	Silicone Elastomer Compatibility
NS-9388-G	Medium	-50°C to +125°C	None	No
NS-9388-G2	Medium	-50°C to +125°C	Dual	No
NS-6699-G	Light	-50°C to +125°C	Small	Yes
NS-8299-G	Light	-50°C to +125°C	Small	Yes
NS-8201-G	Medium	-40°C to +150°C	Small	No
NS-11501-G	Medium	-40°C to +130°C	Small	Yes

2/03 Rev1

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## Synthetic Hydrocarbon Damping Lubricants

Mechanical damping greases are used to provide motion control, noise reduction and smooth feel between moving parts ensuring quiet mechanical operation and smooth action. Properly selected damping greases solve your design problems by retaining damping qualities over the operating temperature range of the application, resisting internal shear, friction reduction and reduction of wear between moving parts. These enhanced qualities extend service life of the mechanism.

Damping greases are properly selected on the specific design problem and the degree of damping required. The base oil viscosity, additives, and thickeners control the degree of damping. Other design considerations should include material compatibility, operating temperature range and cost.

The 50000 series damping greases were developed by Syn-Tech Ltd. to provide a smooth feel to mechanisms such as sliding or rotating switches, optical equipment such as surveying sights and microscopes, or any device that needs motion control, noise damping, or a “quality” feel. Formulated using the highest quality “plastics friendly” synthetic hydrocarbon fluids and non-melting thickener to meet a wide range of damping requirements and operating temperatures, the 50000 series of greases is versatile in that they also provide antiwear, E.P., and corrosion protection. They are also available with PTFE or molybdenum disulfide for enhanced “smooth feel”. Custom viscosities and colors are available upon request.

	NS-50010-G	NS-50050-G	NS-50100-G	NS-50150-G	NS-50300-G	NS-50600-G	NS-51000-G*
	Low	← Damping →			High		
<b>Base Fluid Properties</b>							
Viscosity, cSt @ 40°C	64	410	895	1425	3200	6050	12000
Viscosity, cSt @ 100°C	10	50	100	150	300	600	1000
Viscosity Index	137	185	206	220	245	294	305
Flash Point, °C	>220	>220	>220	>220	>220	>220	>220
Pour Point, °C	-55	-48	-45	-42	-30	-21	-15
<b>Grease Properties</b>							
Worked Penetration 60 Double Strokes	305	268	275	275	275	268	272
Oil Separation 24 Hrs. @ 100°C	4.5	2.1	2.7	2.5	1.6	1.0	.4
Dropping Point, °C	>260	>260	>260	>260	>260	>260	>260

11/05 Rev7



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## Silicone Damping Lubricants

Silicone damping lubricants are used to provide motion control, noise reduction and smooth feel. When compared to hydrocarbon based lubricants, silicones have excellent temperature-viscosity characteristics, higher shear stability, water resistance and better low temperature performance. They provide a superior protective film between moving parts ensuring quiet mechanical operation and smooth action over a wider range of environmental conditions. These enhanced qualities extend service life of the mechanism.

The 40000 series damping fluids and greases were developed by Syn-Tech Ltd. to provide a smooth feel to mechanisms such as sliding or rotating switches, optical equipment such as surveying sights, microscopes, or any device that needs motion control, noise damping and a “quality” feel. These products are formulated using the highest quality “plastics friendly” silicone fluids and non-melting thickeners to meet a wide range of damping requirements and operating temperatures. The lubricants in this series are available as:

- A fluid (-F suffix)
- A PTFE thickened grease for enhanced “smooth feel” and wear protection (-G suffix)
- A fumed silica thickened grease with a translucent appearance (-H suffix)

Custom colors and viscosities from 1cSt to 1,000,000 cSt are available upon request.

	NS-40032	NS-40150	NS-40300	NS-41500	NS-43500	NS-49000	NS-4017K
	Low ← Damping Level → High						
<b>Base Fluid Properties</b>							
Viscosity, cSt @ 40°C	80	375	750	3800	10000	22000	45000
Viscosity, cSt @ 100°C	33	154	310	1540	3800	9500	19000
Viscosity Index	420	445	480	570	610	685	715
Flash Point, °C	>300	>300	>300	>300	>300	>300	>300
Pour Point, °C	-65	-50	-50	-45	-45	-43	-41
<b>Typical Grease Properties</b>							
NLGI Grade	1	1	1	2	2	2	2
Oil Separation 24 Hrs. @ 100°C	3	3	2	1	1	1	1
Dropping Point, °C	>260	>260	>260	>260	>260	>260	>260

Product Suffixes:

- F: Fluid
- G: PTFE Grease
- H: Translucent Grease, Low Cost

9/04 Rev0

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## Smooth Feel Lubricants

Designed to give rotary and linear controls a feeling of fluid motion, Syn-Tech's non-silicone smooth feel greases eliminate the stiff/jerky action commonly associated with knobs, bezels, levers, and sliders. This allows the user to set controls quicker and more accurately by preventing 'stiction' induced overshoot during fine-tuning and direction changes. Furthermore, smooth feel lubricants prolong the life of components by reducing the effort required to move the controls thereby minimizing strain placed on the mechanism.

Due to a unique gelling agent, these synthetic hydrocarbon greases demonstrate superior low temperature performance with virtually no oil separation<sup>1</sup>. They are also compatible with most engineering plastics, including ABS and polycarbonate.

Product Name	40°C Viscosity (cSt)	Temperature Range (°C)	NLGI Grade	Thickener
NS-6404-G <sup>3</sup>	30	-40 to 110	2	Li Soap
NS-1802-G <sup>3</sup>	30	-40 to 110	1	Li Soap
NS-6505-GR	190	-40 to 150	2	Inorganic

<sup>1</sup> Based on oil separation test ASTM D6184-98

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## Mechanical Lubricants

Syn-Tech Ltd. mechanical lubricants can dramatically increase the performance of your mechanism by providing longer lasting, quieter operation over wider temperature ranges. Syn-Tech Ltd. supplies a wide range of synthetic based greases and oils proven to increase the life of your mechanism while reducing service intervals and customer down time.

### Roller Bearings

Syn-Tech Ltd. provides unique bearing lubricants for situations where conventional bearing lubricants fail. The following greases are just an example of the many high performance bearing greases and oils Syn-Tech manufactures.

Product Name	Description	Typical Application	Temperature Range °C
NS-102-G	Synthetic hydrocarbon, Li soap thickened	General purpose synthetic bearing grease. Long service with rust and corrosion additives for ball and roller bearings. Low viscosity for reduced drag.	-50 to +150
NS-6802-G	Ester, Li soap thickened	Extremely high viscosity low speed roller bearing lubricant. Formulated for extreme pressure, anti-wear and noise control with high stability, low migration, and excellent load carrying capability. This product exhibits excellent oxidation stability.	-18 to +160
NS-6805-G	Synthetic hydrocarbon, Organic Polymer Thickened	Water resistant roller bearing lubricant. Corrosion and antiwear additives.	-40 to +150
NS-7896-G	Synthetic hydrocarbon, Clay thickened	Extreme low temperature bearing grease. Applications include bearings requiring long service life, light duty gearboxes, cables, cams and similar applications.	-117 to +100

### Slides and Plain Bearings

Bearing antiwear and degree of coefficient of friction reduction are often primary characteristics to consider when choosing a bearing lubricant. Synthetic fluid based oils and greases usually perform best in thin film applications when a wide temperature range is required. The following table lists our more popular slide and plain bearing lubricants.

Product Name	Description	Typical Application	Temperature Range °C
NS-9797-G	Synthetic hydrocarbon, Li soap thickened	For application requiring high mechanical lubricity, low friction, excellent oxidation and thermal stability, smooth feel and damping. Contains PTFE for excellent low frictional properties. Applications include low to medium load gearboxes, cables, screw actuators, sliding interfaces and similar applications.	-40 to +149
NS-10895-G	Synthetic hydrocarbon, Li soap thickened	For applications requiring a lubricant with low drag, damping and noise control properties. Formulated with EP, antiwear, rust and corrosion protection for use in low and high temperature requirements. Applications include sliding track lubrication, light duty gearboxes, bearings, cables and plastic gears.	-40 to +135

<b>NS-7505-G</b>	Synthetic hydrocarbon, Organic Polymer Thickened	Fully synthetic water resistant bearing grease. High stability at high temperatures. Additives for rust and corrosion prevention. PTFE enhanced.	-45 to +200
<b>NS-8205-G</b>	Synthetic Hybrid, Inorganic Thickened	High lubricity grease for metal on metal applications. Unique blend of base fluids gives outstanding wear resistance with good anti-squeak on breakaway. Non-melting.	-40 to +150

## Gear Lubricants

From steel mill gear reducers to mini-geared actuators, lubricants serve to reduce wear and noise while increasing gear train efficiency. In many instances the introduction of one of Syn-Tech's many high performance gear lubricants has enabled engineers to upgrade the rating of gearboxes for higher horsepower capacity because of superior oil or grease formulations.

Eliminating the need for special seals, extra fine gear finishes (to reduce noise), the ability to use less expensive gear materials or manufacturing processes can lead to a cost savings when using well-engineered greases and oils. Longer lubricant life due to increased oxidation resistance will reduced downtime for maintenance leading to an additional overall cost savings.

The following are just some of the lubricants Syn-Tech currently supplies for gear applications:

<b>Product Name</b>	<b>Description</b>	<b>Typical Application</b>	<b>Temperature Range °C</b>
<b>NS-4405-FG</b>	Ester, Li complex thickened	A high load capacity semi-fluid grease designed metal on metal gears in helicopter gearboxes. Fortified with extreme pressure, antiwear and corrosion additives. Applications include gearboxes, couplings, drives and bearings.	-54 to +135
<b>NS-7796-G</b>	Ester, Li soap thickened	For metal on plastic and plastic on plastic gears requiring excellent low temperature performance, excellent thermal stability, smooth feel and damping on plastics and metals. Applications include low to medium load gearboxes and similar applications.	-40 to +121
<b>NS-3698-G</b>	Hybrid Synthetic, Inorganic thickened	A non-melting gear lube designed for highly loaded gearboxes. High gel stability for low oil separation. Won't weep out of power tool gearboxes. Fortified with EP, antiwear, and rust preventive additives.	-20 to +149
<b>NS-5507-FG</b>	Synthetic Hydrocarbon, Organic thickened	A semi-fluid grease designed to flow like an oil but with no oil separation. Resists leaking out of poor gearbox case seals. Excellent for bronze and steel worm gears.	-20 to +149

1/08 Rev3

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## Electrical Contact Lubricants

Lubricants designed for electrical switch applications must protect components from wear and corrosion while providing protection against external elements such as dust, humidity, moisture, periods of non-use and wide variations in temperatures. Electrical lubricants should be chosen dependent on contact design (sliding, make and break, slip ring, roller, knife blade, etc.), contact forces, switching amperage requirements and compatibility with plastics, elastomers and metals. Low current switching with low contact forces may require a lubricant with different chemical and physical properties compared to switching high current with high contact forces.

- **Transportation**  
Automotive, Truck & Bus, Aerospace, Agricultural Equipment, Construction Equipment, Marine Equipment
- **Electronics**  
Office Automation, Telecommunications, Audio-Visual, Test & Measurement, and Medical Equipment
- **Commercial Controls**  
HVAC, Generators, Elevators and Escalators
- **Appliances**  
Kitchen Appliances, Floor Care, Power Tools, Lawn and Garden Equipment, Commercial Food Equipment, Environmental Controls, Commercial Floor Cleaning Equipment, Vending Machines, and Residential Generators
- **Industrial Controls & Factory Automation**  
Motor Controls, Welding, Robotics, Compressors and Electronic Heat Controls

The following are just some of the products Syn-Tech currently supplies for electrical applications. Many may also be used for light duty mechanical lubrication on gears, slides and bearings.

### Wide temperature range plastics friendly electrical contact lubricants

Product	Description	Typical Application	Temperature Range (°C)
<b>NS-1702-G</b>	Glycol, Inorganic thickened	Non-melting grease for high current switching with low arc debris. Inhibited for Cu and Ag corrosion with good mechanical and chemical stability. Applications include high current switches, potentiometers and similar devices.	-40 to +149
<b>NS-7502-GA</b>	Glycol, Li Soap	High current switching with low arc debris. Inhibited for Cu and Ag corrosion with enhanced contact antiwear. Also exhibits good mechanical and chemical stability. Applications include high current switches, potentiometers and similar devices.	-40 to +120
<b>NS-8705-G</b>	Glycol, Organic Polymer	High current switching with low arc debris. Inhibited for Cu and Ag corrosion with good contact antiwear. Also exhibits good mechanical gel stability with good moisture resistance. Applications include high current switches, potentiometers and similar devices.	-40 to +120

## High Performance wide temperature range electrical contact lubricants

<b>NS-2402-G</b>	Polyol ester, Li Soap	For high current applications requiring low arc switching debris, durability and corrosion protection for Cu, Cu alloy, Ag, Au and Ni metals. Excellent mechanical stability, low fluid migration, good mobility at low temperatures and low evaporation at high temperatures	-40 to +141
<b>NS-1102-G</b>	Polyol ester, Li Soap	For high current applications requiring extended operation at high temperatures, low arc switching debris, reduced sliding wear and corrosion protection on Cu, Cu alloys, Ag, Au and Ni metals. Excellent mechanical stability, low fluid migration, and low evaporation at high temperatures.	-40 to +150
<b>NS-2802-G</b>	Polyol ester, Li Soap	For low and high current applications with excellent protection against sliding contact wear. Good protection against nonferrous metal corrosion due to humidity.	-40 to +149
<b>NS-8605-G</b>	Polyol ester, Organic Polymer	For low and high current applications up to 25 amps with excellent protection against sliding contact wear. Very good protection against nonferrous metal corrosion due to humidity.	-40 to +149

## Wide temperature range low arc debris contact lubricants

<b>Product</b>	<b>Description</b>	<b>Typical Application</b>	<b>Temperature Range (°C)</b>
<b>NS-1702-G</b>	Glycol, Inorganic thickened	Non-melting grease for high current switching with low arc debris. Inhibited for Cu and Ag corrosion with good mechanical and chemical stability. Applications include high current switches, potentiometers and similar devices.	-40 to +149
<b>NS-7502-GA</b>	Glycol, Li Soap	High current switching with low arc debris. Inhibited for Cu and Ag corrosion with enhanced contact antiwear. Also exhibits good mechanical and chemical stability. Applications include high current switches, potentiometers and similar devices.	-40 to +120
<b>NS-8705-G</b>	Glycol, Organic Polymer	High current switching with low arc debris. Inhibited for Cu and Ag corrosion with good contact antiwear. Also exhibits good mechanical gel stability with good moisture resistance. Applications include high current switches, potentiometers and similar devices.	-40 to +120

11/05 Rev3

### An ISO 9001:2000 Registered Company

#### Our Expertise

Syn-Tech's product line has evolved products that satisfy applications of many types. Experience and in-house testing facilities have generated the knowledge to create and modify new and existing products to perform under rigorous demands. Contact our offices for assistance in lubricant selection.

#### Contact Us:

Syn-Tech Ltd.  
1433C. W. Fullerton Ave. Addison, IL 60101 USA  
Phone (630) 620-7050 Fax (630) 620-4832 email: sales@syn-techlube.com



Syn-Tech Ltd.

The Finest Specialty Lubricants in the World



## Pneumatic Cylinder Lubricants

Choosing the proper lubricant to increase performance of your device and to extend the life of your design is very important. These seal lubricants provide reduced friction and drag for smooth breakaway at low air pressures, reduced wear on metal and plastics and increased life of the design with improved overall performance.

Product Name	Description	Typical Application	Temperature Range °C
NS-202-F	Silicone oil	A silicone oil for oil-mist lubrication systems.	-50 to +177
NS-10197-GS	Silicone, Inorganic thickener	A silicone oil based fluid grease designed to lubricate piston seals in air cylinders. Long life, low evaporation with low breakaway pressures. NSF H1 approved .	-50 to +177
NS-9201-FG	Silicone, Li soap	A silicone oil based fluid grease designed to lubricate piston seals in air cylinders. Long life, low evaporation with low breakaway pressures.	-50 to +177
NS-7505-G	Synthetic Hydrocarbon, Organic Polymer Thickened	Fully synthetic water resistant grease. High stability at high temperatures. Additives for rust and corrosion prevention.	-45 to +200
NS-5606-G	Semi-Synthetic, Lithium Complex Thickened	High lubricity for extended seal life. Good stability at high temperatures. Additives for rust and corrosion prevention.	-29 to +121

05/07 Rev3

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## Aerospace Lubricants

Syn-Tech Ltd. has developed lubricants that meet strict military specifications and requirements including jet aircraft and helicopter applications. These lubricants have provided excellent service in extreme environments.

Syn-Tech Ltd. Aerospace lubricants provide the following characteristics: Wide operating temperature ranges, excellent lubricity, extreme pressure and antiwear properties that increase load capacity in gears and drive shafts, excellent oxidation, corrosion and water washout resistance.

Product Name	Description	Typical Application	Temperature Range °C
<b>NS-3913-G1</b> <b>NSN 9150-00-506-8497</b>	Ester, clay thickened	Fortified with extreme pressure, antiwear and corrosion additives, this lubricant was designed for extreme gear coupling applications under high temperature, high rpms and heavy loads with potential for misalignment and exposure to harsh environmental conditions. Applications include gear couplings for helicopters, gearboxes, splines, differentials, and screw jacks.	-40 to +176
<b>NS-4405-FG</b> <b>NSN 9150-01-212-1409</b>	Ester, Li complex thickened	A high load capacity semi-fluid grease designed for helicopter gearboxes. Fortified with extreme pressure, antiwear and corrosion additives for extreme stability under high centrifugal and rotational speeds. Applications include gearboxes, couplings, drives and bearings.	-54 to +135
<b>NS-6075-G</b> <b>NSN 9150-00-823-8049</b>	Petroleum, clay thickened	A versatile, extreme pressure, antiwear lubricant. Fortified with molybdenum disulfide and graphite to protect metal surfaces during periods of high loads and extreme pressure. Excellent water washout, rust and oxidation resistance with good mechanical stability. Applications include splines and similar applications.	-20 to +150
<b>NS-6075-G</b> <b>NSN 9150-00-823-8049</b>	Petroleum, clay thickened	A versatile, extreme pressure, antiwear lubricant. Fortified with molybdenum disulfide and graphite to protect metal surfaces during periods of high loads and extreme pressure. Excellent water washout, rust and oxidation resistance with good mechanical stability. Applications include splines and similar applications.	-20 to +150
<b>NS-5806-G</b>	Ester, Clay thickened	NS-5806-G is a non-melting extreme pressure grease designed for lubrication of aircraft slides and bearings. Fortified with molybdenum disulfide for excellent protection of sliding steel on steel against wear and seizure. Gelled with a non-melting bentonite thickener for extended operation at high temperature.	-73 to 150

1/08 Rev2

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# Fluor-Tech®

## Full Spectrum Lubricants

The Fluor-Tech® line of PFPE (perfluoroalkylpolyether) high performance greases and fluids, manufactured by Syn-Tech Ltd., offer the following advantages:

- Operating temperature ranges from -110°F to 800°F
- Chemically inert
- Nonflammable
- Insoluble in water
- Extremely low evaporation rates
- Extends lubrication intervals reducing down time
- Innovative additives that have replaced sodium nitrite

- Neutral to most plastics and elastomers
- USDA H-2 rating for food processing plants
- Custom formulations always available

Formulated from the highest quality PFPE fluids, these lubricants offer better performance than the PFPE based products offered by most companies. These products are ideal for:

- Control valves exposed to oxidizers, caustics, and corrosive chemicals
- Water immersed bearings and valves
- Oven cart bearings
- Clean room bearings
- Oxygen handling equipment
- Difficult or impossible to re-lube situations

### 61000 Series

The 61000 Series is a low cost multipurpose PFPE line of greases and fluids. All products in this series contain innovative liquid EP, antiwear and antirust additives. This series offers low volatility on metal and plastic applications with a wide operating temperature range. Blends with a CFC-free, non-toxic, non-flammable solvent carrier to aid application are available. An ultraviolet tracer is available for thin film applications. Most can be custom modified to a different NLGI grade for grease or for custom viscosity for fluids.

	NS-61015	NS-61022	NS-61100	NS-61150	NS-61320	NS-61460	NS-61500
<b>Fluid Properties</b>							
ISO grade	15	22	100	150	320	460	-
Viscosity @ 40°C	14.7	20.9	78	150	339	427	513
Viscosity @ 100°C	3.2	4	9.7	15.9	32	41	48
VI	68	77	102	110	133	146	151
Pour Point (°C)	-58	-50	-35	-30	-25	-25	-20
Evap. Loss (%)149°C for 22 hrs	---	21	1.9	0.8	0.4	>.1	>.1
<b>Grease Properties</b>							
NLGI grade	2	2	2	2	2	2	2
Dropping point (°C)	>260	>260	>260	>260	>260	>260	>260

**Product suffixes:**

- F: Fluid
- G: Grease
- H: Translucent higher temperature capability grease

- P: Excellent Plastics compatibility
- A: Molybdenum disulfide and graphite for smooth feel on metals
- UV: Ultraviolet tracer added

### 62000 Series

The 62000 Series is a high grade PFPE line of greases and fluids. All products in this series contain innovative liquid EP, antiwear and antirust additives. This series offers excellent operation over a wide temperature range, excellent viscosity indexes, and low volatility on metal and plastic applications. Blends with a CFC-free, non-toxic, non-flammable solvent carrier to aid application are available. An ultraviolet tracer is also available for thin film applications. Most can be custom modified to a different NLGI grade for grease or for custom viscosity for fluids.

	NS-62015	NS-62032	NS-62100	NS-62150	NS-62320
<b>Fluid Properties</b>					
ISO grade	15	32	100	150	320
Viscosity 40°C	16.9	31.8	85	159	312
Viscosity 100°C	5.1	9.1	22.1	56	87
VI	267	289	288	332	344
Pour Point (°C)	-85	-70	-75	-65	-60
Evap. Loss (%) 149°C for 22 hrs	6.5	1	0.8	>.1	>.1
Evap. Loss (%) 204°C for 22 hrs	---	>10	3	0.7	0.4
<b>Grease Properties</b>					
NLGI grade	2	2	2	2	2
Dropping point (°C)	>260	>260	>260	>260	>260

**Product suffixes:**

- F: Fluid
- G: Grease
- H: Translucent higher temperature capability grease
- P: Excellent Plastics compatibility
- A: Graphite for smooth feel on metals
- M: Moly for extra high loads
- UV: Ultraviolet tracer added

## 63000 Series

The 63000 Series is a superior quality PFPE line of greases and fluids. All products in this series contain innovative liquid EP, antiwear and antirust additives. This series offers excellent volatility on metal and plastic applications with excellent low and high temperature properties. Blends with a CFC-free, non-toxic, non-flammable solvent carrier to aid application are available. An ultraviolet tracer is available for thin film applications. Most can be custom modified to a different NLGI grade for grease or for custom viscosity for fluids.

	Typical Data			
	NS-63015	NS-63100	NS-63150	NS-63320
<b>Fluid Properties</b>				
ISO grade	15	100	150	320
Viscosity 40°C	17.9	90	155	355
Viscosity 100°C	5.7	28.3	50	98
VI	303	342	359	346
Pour Point (°C)	-90	-80	-75	-62
Evaporation Loss (%) 149°C for 22 hrs	6.5	0.8	>.1	>.1
Evaporation Loss (%) 204°C for 22 Hrs	---	1.2	0.4	0.2
<b>Grease Properties</b>				
NLGI grade	2	2	2	2
Dropping point (°C)	>260	>260	>260	>

### Product suffixes:

- F: Fluid
- G: Grease
- H: Translucent higher temperature capability grease
- P: Excellent Plastics compatibility
- A: White graphite for smooth feel on metals
- B: Sodium nitrite for rust at high temperatures
- C: White graphite & sodium nitrite
- UV: Ultraviolet tracer added

## 64000 Series

The 64000 Series greases were formulated for extended high temperature (>550°F) operation. Applications might include oven chains and bearings, kiln trolley bearings, molding equipment and more. Contains metal EP, antiwear and rust additives.

	Typical Data	
	NS-64150	NS-64320
<b>Fluid Properties</b>		
ISO grade	150	320
Viscosity 40°C	155	355
Viscosity 100°C	50	98
VI	359	346
Pour Point (°C)	-75	-62
Evaporation Loss (%) 149°C for 22 hrs	>.1	>.1
Evaporation Loss (%) 204°C for 22 hrs	.4	.2
<b>Grease Properties</b>		
NLGI grade	2	2
Dropping point (°C)	>260	>260

### Product suffixes:

- UV: Ultraviolet tracer added

1/08 Rev.6

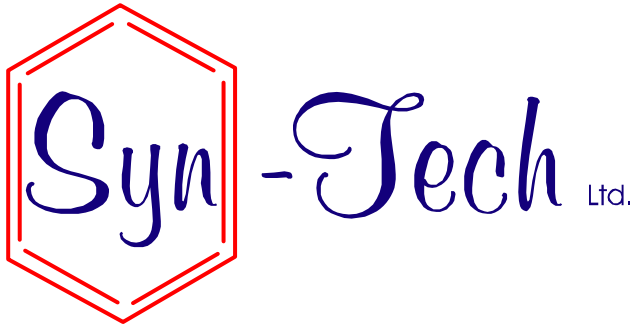
## An ISO 9001:2000 Registered Company

### Our Expertise

Syn-Tech has evolved products that satisfy a diverse selection of applications. Experience and in-house testing facilities have generated the knowledge to create and modify new and existing products to perform under rigorous demands. Contact our sales office for assistance in selecting a lubricant for your application.



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## Corporate Overview

Syn-Tech Ltd. is a privately held corporation that manufactures specialty lubricants for worldwide distribution. We work hand-in-hand with design engineers to formulate and develop a lubricant that meet or exceed the requirements for the application. While our primary focus is the automotive industry we also specialize in lubricants for the aerospace, defense, industrial, medical and commercial industries. In addition to formulating for individual applications, we manufacture lines of lubricants with varying viscosities, thickeners, and basefluids including H-1 and H-2 food grade lubricants. Every lubricant is developed in our research laboratory with strict confidence assuring your design will not be compromised. It's what we do, what we're about... Uncompromised Quality, Unconditional Commitment.

## Technology

Syn-Tech Ltd's products are based on a full range of synthetic chemistries, including PAO, ester, glycol, silicone and PFPE based products. We also work closely with top lubricant component manufacturers for design and field trials.

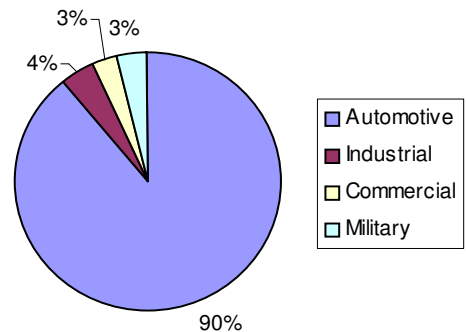
## Research and Development

A full range of engineering expertise is used to develop products at Syn-Tech. We are constantly analyzing new materials to stay on the cutting edge of lubricant technology. Mechanical and Electrical engineers work closely with product formulators to ensure that products are being developed properly the first time to reduce testing burden at the OEM. Our Engineers have the ability to design test stands in-house to run parallel testing with the customer. As a service to our customers we also run plastics and elastomer compatibility screening at no charge.

## Operations

Syn-Tech Ltd. is headquartered in Addison, Illinois, just minutes away from major highway's, airports and waterways. Our facilities includes administrative offices, R&D, manufacturing, quality testing and packaging. Our products are available in a wide variety of packages, including pillow packs, blister packs, syringes, jars, cartridges, pails, drums and totes. Packaging is done on site. We are able to custom color, custom label, and deaerate products to our customers specific requirements. Syn-Tech Ltd. is ISO 9001 Registered.

## Major Markets Served - 2006



## Lubricant Type Distribution - 2006

