

GERALYN®

FOOD GRADE LUBRICANTS FOR
MEAT AND POULTRY PROCESSING



INTRODUCTION TO THE COMPANY

FUCHS LUBRITECH is the specialist lubricants division of the Fuchs Petrolub AG group, the world's largest independent lubricant manufacturer with a turnover in excess of €1.4 billion.

FUCHS LUBRITECH has headquarters in Kaiserslautern and employs more than 400 people worldwide at locations in Germany, England, France, Australia, USA, Brazil, Japan, China and India. Overall, there are LUBRITECH Group distributors and partners in more than 60 countries, thus ensuring world wide availability of its product range.



FUCHS LUBRITECH's new €20 million plant in Kaiserslautern Germany

The company's globally available NSF H1 registered food grade lubricant range is marketed under the **GERALYN®** name worldwide and under the **RIVOLTA® FL** name in Germany.

COMPANY STATEMENT ON FOOD SAFETY REGULATIONS



The National Sanitation Foundation (USA) sets the global “benchmark” in the certification of standards relating to “non-food” products that come into incidental (H1) and direct (3H) contact with food during packaging and processing.

All GERALYN® products are NSF H1 Registered, are physiologically harmless and will ensure compliance with any HACCP risk analysis program. Many are also Orthodox Union Kosher Pareve certified.

GERALYN® products are formulated using only FDA Group 21 CFR 178.3570 listed ingredients and contain no natural substances derived from animals or genetically modified organisms. They are also free of any mineral hydrocarbons, dairy, soya, and nut derivatives.

GERALYN® products are biostatic and will not promote microbial fungal growth.

Details of the NSF H1 registration numbers for all **GERALYN®** lubricant products may be obtained by viewing the White Book – Non-food Compounds Listings Directory at:

www.nsf.org/usda/psnclistings.asp

All **GERALYN®** products are manufactured in special food-dedicated production areas at the following three FUCHS Group sites:

Bremer & Leguil GmbH - Duisburg Germany

FUCHS LUBRITECH (UK) Ltd - London England

Fuchs Lubricants Co (FUCHS LUBRITECH Division) - Kansas USA

All three sites are ISO 9001 registered and the two European sites are both ISO 14001 registered

INTRODUCTION TO THE GERALYN® PRODUCT RANGE

The **GERALYN®** product range comprises:

GERALYN® LRO	Lubricating and Release Oil – NSF H1 & 3H registered
GERALYN® SF	Hydraulic oils gear oils and chain lubricants – ISO 15 to ISO 5000
GERALYN® COMP	Compressor and vacuum pump oils – ISO 15 to ISO 150
GERALYN® RCO	Refrigeration Oil – ISO 68
GERALYN® Si	Silicone Oil
GERALYN® SG	Greases – Temp ranges -50°C to + 260°C
GERALYN® F.L.A.	Assembly paste and dismantling aid
GERALYN® SPRAYS	Maintenance aerosols – Silicone and synthetic

All NSF H1 products are manufactured from synthetic base oils using the very latest lubricant technology and include extreme pressure additives that ensure the very highest standards of performance.

General performance of GERALYN® polyalphaolefin (PAO) based oils and greases

GERALYN® PAO based products will tend to out-perform products based on mineral oils:

- A significantly higher **VI** (viscosity index) - circa 140 - less change in viscosity at high temperatures
- A wider operating temperature range - better low temperature performance - from minus 60°C
- Better lubricity and anti-wear performance
- Better oxidation and corrosion resistance and significantly increased oil life
- **GERALYN®** PAO's are fully miscible with mineral and white oils. Changing over is simple and there will be no problems with having to change seals or with the new lubricant on painted surfaces

Some examples of benefits derived from switching to GERALYN® (PAO) based oils and greases:

- Much cleaner and a "food safe" environment
- Typically twice the oil life of a mineral oil in an industrial gearbox
- Oil life extended from 2,000 hours to 8,000 hours in a compressor in a German meat processing plant
- Reduced maintenance and equipment replacement costs
- Increased machine availability through reduced downtime
- Reduced lubricant stockholding via consolidation / rationalisation of oils and greases

HIGH TECHNICAL SPECIFICATIONS AND PERFORMANCE

e.g. TYPICAL SRV FRICTION AND WEAR TEST RESULTS ON THREE FOOD GRADE GREASES:

The SRV test is used in applications where friction is associated with small oscillatory and reciprocating movements. The test piece (ball or cylinder on plate) reciprocates in a straight line. The test piece is first wetted with lubricant and is then subjected to mechanical loading via vertical force acting through the ball. The friction coefficient μ is determined by measurement of the friction force. The volume and depth of wear on the plate are also measured. The test data gathered by these means show the performance of the lubricant.

SRV Test Conditions: frequency = 50Hz, Displacement = 500 μ m, Temperature = 50°C Time = 60min



← Plate wear surface contour

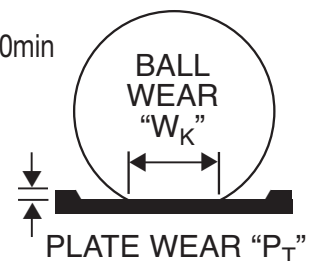
TYPICAL NSF H1, FOOD GRADE, PAO BASE Alx GREASE
Wear $P_T = 1.5\mu\text{m}$ $W_K = 0.6\text{mm}$



GERALYN® SG2 grease: Plate wear surface contour
Wear: $P_T = <1\mu\text{m}$ $W_K = 0.42\text{mm}$



GERALYN® SG HF2 grease: Plate wear surface contour
Wear: $P_T = <1\mu\text{m}$ $W_K = 0.48\text{mm}$



FOR HYGIENE AND PERFORMANCE USE GERALYN®





THE GERALYN® RANGE - GEN

Product Type	GERALYN® Name	NSF Reg. Number	Temp. Range °C
Lubricating & Release Oil	LRO	142651 H1and 3H	-10 to +120
Penetrating Oil	SF 5	139397 H1	N/A
	SF 15	139535 H1	-62 to +140
	SF 32	133361 H1	-60 to +140
	SF 46	133362 H1	-60 to +140
	SF 68	133363 H1	-50 to +140
	SF 100	133364 H1	-45 to +140
	SF 150	133365 H1	-45 to +140
	SF 220	133366 H1	-40 to +140
	SF 320	133367 H1	-35 to +140
	SF 460	133368 H1	-35 to +120
	SF 1500	139824 H1	-12 to +120
	SF 5000	139833 H1	-10 to +140
	Compressor Oils	COMP 32	139536 H1
COMP 46		139591 H1	-60 to +140
COMP 68		139592 H1	-50 to + 140
Refrigeration Oil	RCO 68	139405 H1	N/A
Silicone Oil	Si 350	139391 H1	N/A
PAO Synthetic Greases Standard	SG 2	139393 H1	-40 to +140
	SG HF 2	139394 H1	-40 to +140
	SG 0	139395 H1	-40 to +140
	SG 000	139396 H1	-50 to +120
	SG MD 2	139390 H1	-40 to +200
Assembly Paste	F.L.A.	139392 H1	-40 to +1200
Aerosols	SF 5 Spray	139398 H1	N/A
	SF 32 Spray	139399 H1	-60 to + 120
	SF 320 Spray	139400 H1	-35 to + 140
	SF 1500 Spray	139401 H1	-12 to + 120
	SF 5000 Spray	139834 H1	-10 to +140
	SI Spray	139402 H1	-50 to -58 ^{pour point}

FOR HYGIENE AND PERFORMANCE USE GERALYN®

GERALYN® greases are
All GERALYN® greases are also available

GENERAL APPLICATION GUIDE

Viscosity or Consistency	Basic Description and Application Details	
ISO 68	Dual registered with NSF under H1 and 3H categories. For applications where the lubricant may come into direct contact with processed food.	
ISO 5	Fully synthetic penetrating, lubricating, corrosion protective and de-watering fluid that also cleans stainless steel.	
ISO 15	Fully synthetic high performance oils for use in numerous applications such as chain and slideway lubrication, spindles, rollers, hydraulic systems, compressors, gearboxes etc.	
ISO 32		
ISO 46		
ISO 68		
ISO 100		Highly effective additive packages ensure excellent lubrication performance and oxidation resistance.
ISO 150		SF 32, 46 and 68 exceed the demands of DIN 51524 part 2 for hydraulic oils with specification HLP.
ISO 220	SF 46, 68 100 and 150 exceed the demands of DIN 51506 VDL for compressor oils.	
ISO 320		
ISO 460		
ISO 1500	SF 100, 220 and 460 exceed the demands of DIN 51517 part 3 CLP for gear oils.	
ISO 5000	Fully synthetic compressor oils for most types of compressors.	
ISO 32		
ISO 46		
ISO 68		
ISO 68	PAO based refrigeration oil for use with ammonia refrigerants.	
350 cSt @ 25°C	Silicone fluid for general purpose use on plastics and rubbers etc.	
NLGI 2	General purpose grease – use on plain or roller bearings.	
NLGI 1-2	Adhesive grease for fittings, ring gears and gear couplings.	
NLGI 0-00	Soft grease for use on gears and slide ways.	
NLGI 000	Semi-fluid grease for packing machines and automatic lubrication systems.	
NLGI 2-3	General purpose silicone grease for metal, plastic and ceramics etc.	
Paste	High performance assembly paste for threaded connections.	
5 cSt @ 40°C	Penetrating, release, de-watering and lubricating spray that also cleans stainless steel.	
32 cSt @ 40°C	Low viscosity general purpose spray.	
320 cSt @ 40°C	Medium viscosity general purpose spray ideal for chain lubrication.	
1500 cSt @ 40°C	Medium/high viscosity general purpose adhesive lubricant.	
5000 cSt @40°C	High viscosity general purpose lubricant that forms as a grease.	
350 cSt @25°C	Silicone spray for rubber, plastic and o-ring lubrication etc.	



are supplied in screw-in 500gr cartridges that require a special "REINER" grease gun for application. They are also available in "bulk" packaging forms and are compatible with centralised automatic lubrication systems.



GERALYN® AEROSOLS

There are six aerosols in the **GERALYN®** range. These six aerosols cover the majority of typical applications found in a meat processing plant.

Five of the aerosols are identified by the prefix "SF" followed by a number, the number being the ISO viscosity of the synthetic oil used in that particular product, so for example SF 5 is a very low viscosity oil where as SF 5000 has a high viscosity and is similar in appearance to a fluid grease.



GERALYN® SF 5 – a fully synthetic food grade penetrating and release oil and very low viscosity lubricant. May be used to lubricate "sticky" mechanisms and plastics and as a de-watering and corrosion prevention oil.

Has excellent cleaning properties and removes "finger marks" etc. from stainless steel surfaces.
NSF reg: 139398 H1



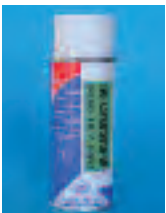
GERALYN® SF 32 – a fully synthetic low viscosity oil for lubrication of all types of mechanisms including slideways and small lightly loaded chains etc.

It is especially suitable for low temperature freezer applications and will operate down to -60°C.
NSF reg: 139399 H1



GERALYN® SF 320 – a fully synthetic medium viscosity oil especially suitable for the lubrication of all types of chain drives. Penetrates and lubricates and provides protective lubricant film to links, pins and other moving parts. Also use on slides and rolling element bearings.

NSF reg: 139400 H1



GERALYN® SF 1500 – a fully synthetic high viscosity oil for lubrication of all moving parts that require a heavy long lasting lubricant coating. May also be used in high rotational speed applications where other lubricants might drip or be thrown off.

NSF reg: 139401 H1



GERALYN® SF 5000 – a fully synthetic very high viscosity oil recommended for applications where a spray type grease is required. Penetrates into bearing surfaces and then congeals into a grease form. Use on heavy duty chains and bearings, open gears and in high water areas or any application where a high performance grease is required.

NSF reg 139834 H1



GERALYN® Si – a fully synthetic silicone fluid for a variety of food processing applications where a silicone lubricant is required. The high viscosity silicone fluid provides excellent lubrication for applications such as slides, pivots, plastic on plastic, rubber seals etc.

NSF reg 139402 H1

ANCILLARY PRODUCTS AND AN NSF REGISTERED DEGREASER



The **GERALYN®** range also includes assembly pastes and PAG based gear and chain oils and these are complimented by a NSF registered aerosol cleaner.

RIVOLTA® SLX Rapid is a fast acting solvent type cleaner and degreaser designed for use on electrical and electronic equipment and contacts etc. It may also be used as a general purpose workshop cleaner and degreaser and will remove oil, grease and resinous contamination.

NSF reg: 140126 K1

MEAT INDUSTRY APPLICATIONS

Typical meat industry applications for **GERALYN®** products include:

IN THE ABATTOIR:

Compressed Air Service Units

GERALYN® SF 15/SF 32

Transport Systems and Hooks

GERALYN® greases

Gearboxes and Drives

GERALYN® SF 220, SF 320, PG 220

Cutters

GERALYN® SG2, GERALYN® LRO

Chain Conveyors

GERALYN® SF 100/SF 320

Hydraulic Power Packs

GERALYN® SF 32/46



Auto-lubrication system for **GERALYN® SGHF2** grease on a monorail conveyor system



IN THE PROCESSING HALLS:

Conveyor Bearings

GERALYN® SG2 grease

Clippers ▪ Lifting Hooks ▪ Tilting Devices

Smoking Plants ▪ Slicing Machines ▪ Miners

Frozen Meat Choppers ▪ Cutters

Mixing Machines ▪ Extruders

Sausage Fillers etc.

GERALYN® LRO and **GERALYN® SF** oils





THE FUCHS LUBRITECH RANGE OF PRODUCTS:

**BETONEX ■ BITEEREX ■ CEPLATTYN ■ CHEMPLEX ■ DECORDYN
FERROFORM ■ GEARMASER ■ GERALYN ■ GLASOL ■ gleitmo
GRASINOL ■ HYKOGREEN ■ KOLLIGEEN ■ KOMPRANOL ■ LAGERMEISTER
LOCOLUB ■ LUBRODAL ■ METABLANC ■ NOPERLYN ■ ONTROPEEN
SILENTAN ■ SOK ■ STABYL ■ STABYLAN ■ TRAMLUB ■ TRAM-SILENCE
URETHYN ■ WAGRAS**

Also available from FUCHS LUBRITECH (UK) Ltd are:

**CARBAFLO ■ LUBESERV ■ MOLY-PAUL ■ CHAINLIFE ■ ROPELIFE
PRIMALIFE ■ PBC**



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