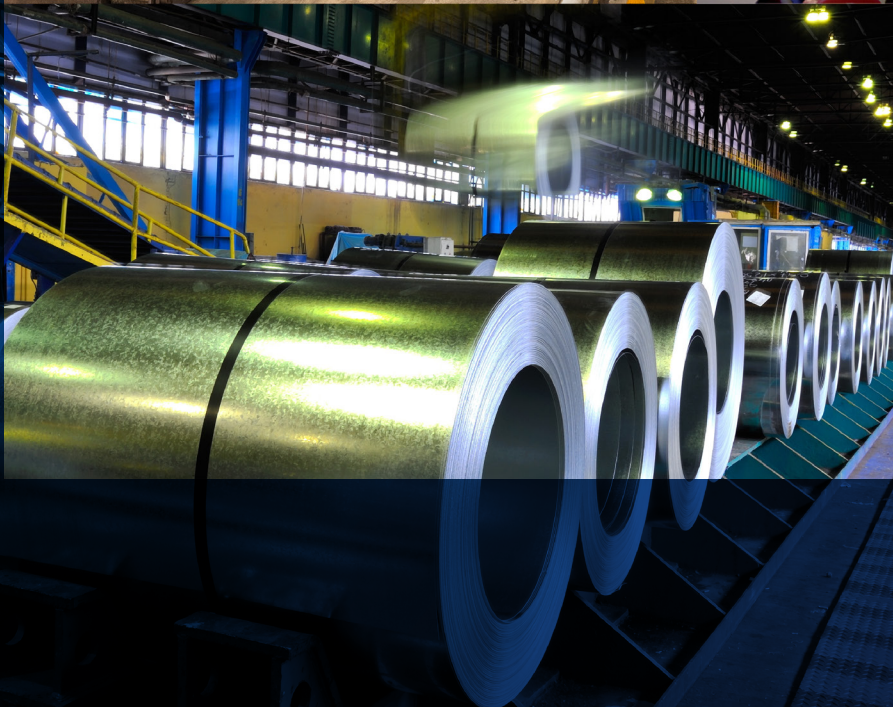
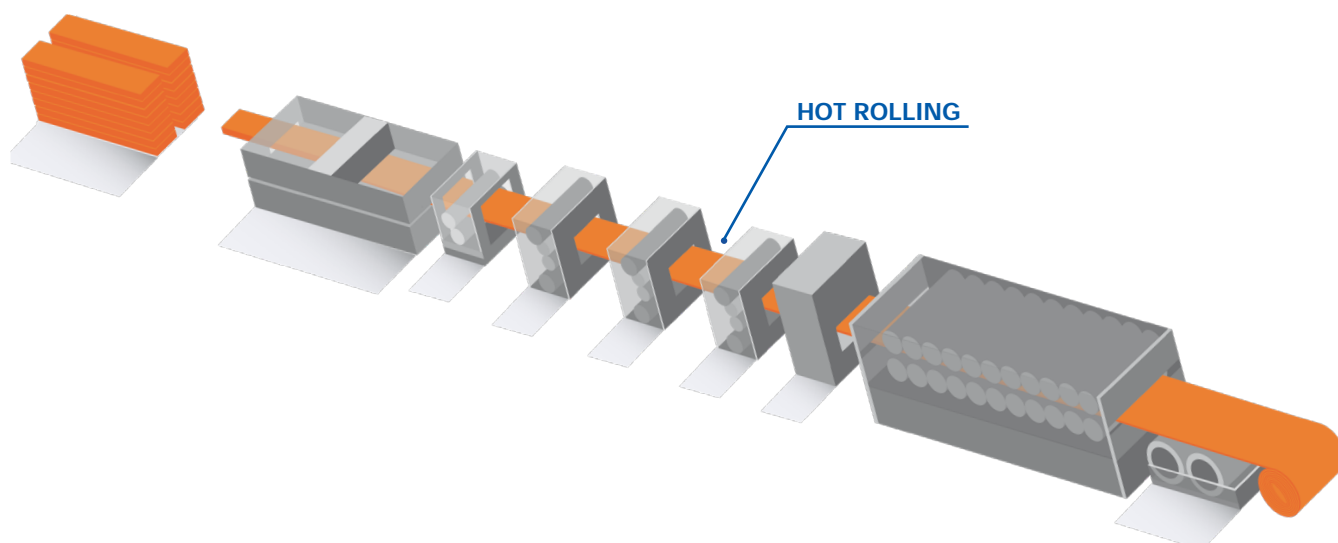


Lubricants for Steel Mills



LUBRICANTS.
TECHNOLOGY.
PEOPLE.



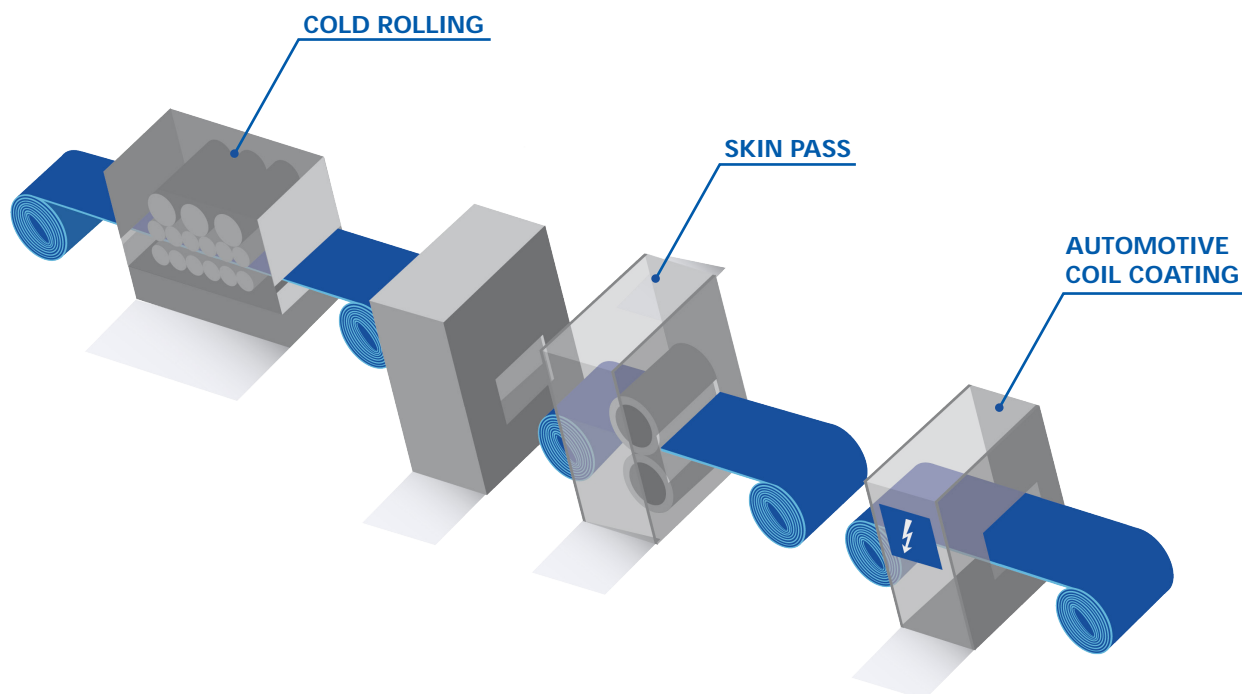


HOT ROLLING

TRENOIL H SERIES	APPLICATION	TRENOIL H Series is recommended for the center and edges of the hot-rolled steel.
	PROPERTIES AND ADVANTAGES	Very low consumption, reduction of energy and roll forces, and increased work roll life.

COLD ROLLING

TRENOIL S SERIES	APPLICATION	TRENOIL S Series are cold rolling oils for tandem and reversing mills with high reductions.
	PROPERTIES AND ADVANTAGES	<p>Excellent lubricant capacity The high quality esters allows for the rolling of materials with very thin final plate gauges.</p> <p>Excellent economic performance Excellent process cost due to emulsion stability.</p> <p>High speed rolling The latest generation of anti-wear and wetting additives ensure the maximum speed allowed in the mill while protecting the life of the work rolls.</p> <p>High level of strip cleanliness TRENOIL S Series esters burn off thoroughly before reaching annealing temperatures.</p> <p>Mill cleanliness The emulsifiers in TRENOIL S Series provide good detergency of the contact areas.</p>
TRENOIL S 700 AND S 800 SERIES	APPLICATION	Highly-stable, emulsifiable synthetic oils for the cold rolling of steels. TRENOIL 800 Series allows for simple handling even if the emulsion is unstable. TRENOIL 700 Series remain stable even with high contaminant loads.
TRENOIL T SERIES	APPLICATION	TRENOIL T Series are lubricants for tin plate cold rolling in tandem and reversing mills with or without the use of direct application systems. By using TRENOIL T Series -- the rolling mill can work at very high speeds and achieve maximum reductions with reasonable rolling loads.



SKIN-PASS

TRENOIL SP SERIES	PRODUCT	TRENOIL SP Series are nitrite, amine and boron-free skin pass rolling oils.
	APPLICATION	TRENOIL SP Series are synthetic products with an aqueous base for use in skin-pass operations.
	PROPERTIES	<p>Coolant capacity TRENOIL SP Series contains the necessary additives to provide adequate wetting for strip cooling and enhanced surface finish.</p> <p>Strip cleaning The detergent power of TRENOIL SP Series reduces strip contamination and achieves a superior quality finish.</p> <p>Corrosion resistant capacity The composition of TRENOIL SP Series provides high corrosion protection after processing.</p>

AUTOMOTIVE COIL COATING

Mill-Applied Corrosion Preventatives and Pre-Lubes	ANTICORIT RP 4107 S	A barium-free standard steel mill oil. It inhibits run-off and offers excellent indoor storage protection in condensation climates and in acidic atmospheres. Fulfills VW A 001, OPEL B 040 12470, DBL 6757.05. VDA 230-201 reference oil. It is approved by most U.S. and European-based OEMs.
	ANTICORIT PL 3802 39 S	A VDA-approved, barium-free, prelube-thixotropic corrosion preventive with good forming properties. It fulfills VDA 230- 201. It is approved for use by most U.S. and European-based OEMs.
	ANTICORIT PL 39 SX	A hot-melt, dry-film lubricant, that is highly thixotropic with very good forming properties. It fulfills VDA 230-202, and is particularly effective in forming aluminum parts.
	METALUB PL 7105 A	A conventional oil based corrosion preventative and pre-lube with excellent lubricity for stamping. It is designed to be applied by steel mills to coils as a prelube. It is approved by General Motors, Tesla, and other OEMs.

FUCHS Lubricants

Complete solutions for all of your manufacturing processes

FUCHS is the world's largest independent manufacturer of lubricants with the most extensive program of metalworking fluids. Our comprehensive portfolio is supported by years of application engineering experience and customized solutions to benefit your manufacturing processes.



Contact:



FUCHS LUBRICANTS CO.
17050 Lathrop Avenue
Harvey, IL 60426 United States
Phone +1 708-333-8900
E-mail: inquiry@fuchs.com
www.fuchs.com/us

FUCHS LUBRICANTS CANADA LTD.
(Eastern Division)
405 Dobbie Drive
Cambridge, Ontario
N1R 5X9
Canada
Phone +1 519-622-2040
E-mail: custservcambridge@fuchasca.com
www.fuchs.com/ca

FUCHS LUBRICANTS CANADA LTD.
(Pacific Division)
19829 99A Avenue
Langley, British Columbia
V1M 3G4
Canada
Phone +1 604-888-1552
E-mail: custservpacific@fuchasca.com
www.fuchs.com/ca

LUBRICANTES FUCHS DE MEXICO, S.A. DE C.V.
Acceso C No. 101
Parque Industrial Jurica
76120 Querétaro, Qro.
Mexico
Phone +52 (442) 2 38 91-00
E-mail: info@fuchs.com.mx
www.fuchs.com/mx

ECOCOOL / ECOCUT / PLANTOCUT

Water-Miscible and Neat Cutting Fluids



LUBRICANTS.
TECHNOLOGY.
PEOPLE.





LUBRICANTS. TECHNOLOGY. PEOPLE.

We focus consistently on high-quality lubricants and related specialties.

We develop innovative and holistic solutions for a wide variety of applications.

We value the high level of commitment of our employees and their trusting interaction with one another.

Facts and figures

COMPANY:

FUCHS LUBRICANTS COMPANY, Harvey, IL, USA

FUCHS LUBRICANTS CANADA LTD., Langley BC and Cambridge ON, Canada

LUBRICANTES FUCHS DE MEXICO SA DE CV
Querétaro, Qro., Mexico

NORTH AMERICAN PLANT LOCATIONS:

Harvey, IL; Kansas City, KS; Huntington, WV;
Langley, BC; Cambridge, ON; Querétaro, Qro., MX

FUCHS has developed, produced and sold lubricants and related specialties for more than 80 years – for virtually all areas of application and sectors. With over 100,000 customers and 57 companies worldwide, the FUCHS Group is the leading independent supplier of lubricants.

Our comprehensive North American team works to insure the needs of our customers are met. We link inter-disciplinary expertise between chemists and application specialists to deliver innovative lubricant solutions to meet the current and future demands, **every single day.**

ECOCOOL Water-Miscible Cutting Fluids

Safe, economical and sustainable in use

FUCHS water miscible cutting fluids meet all regulatory requirements and offer reliable performance and optimum service life. Sustainability and worker compatibility is designed into the products.

ECOCOOL cutting fluids are:

- Free of nitrosamine-forming secondary amines
- Free of nitrites
- Free of hard complexing agents
- Operations friendly
- Free of heavy metals
- Sustainable
- Economical

This means more than just reliability and worker safety. ECOCOOL fluids operate with low operating, maintenance, disposal costs and excellent overall cost of ownership.

Optimum technical properties

FUCHS cutting fluids make machining operations more efficient.

ECOCOOL products provide:

- Optimum cooling and flushing
- Outstanding lubricity
- Excellent wear protection
- Effective corrosion protection
- Low foaming
- Good material compatibility
- Innovative materials
- Excellent EP properties
- Increased productivity

Available throughout the world

Our fluids are available to our customers on a global basis. This means that all raw materials must be registered and comply with chemical regulations in the respective countries. FUCHS offers water-miscible cutting fluids under the name ECOCOOL GLOBAL which can be manufactured anywhere in the world with the same formulation. This allows users to pursue globally harmonized manufacturing processes with the same fluids.



ECOCOOL Water-Miscible Cutting Fluids – Selection Details

Product	Additives		Substrate / Applications									
			Ferrous			Stainless		Cast Iron		Aluminum		Titanium
	Bound-ary	Extreme Pressure	Grinding	Light Duty	Heavy Duty	Light Duty	Heavy Duty	Light Duty	Heavy Duty	Light Duty	Heavy Duty	Heavy Duty
Conventional Water-Miscibles												
ECOCOOL 5761	√	√		○	○	○				●	●	●
ECOCOOL 5785	√	√	●	●	●	●	●					
Semi-Synthetics												
ECOCOOL 7335	√	√	○	○	○	○	●	●	●	●	○	○
ECOCOOL 7830B	√	√	○	○	○	○				●	●	●
ECOCOOL 711	√	√	●	●	●	●	●	●	●	●	●	●
ECOCOOL 715	√	√	●	●	●	○	○	●	●	●	●	○
ECOCOOL 810	√	√	○	○	○	○		○	○	●	●	●
Fully-Synthetics												
ECOCOOL SYN 2175	√			○	○	●	○			●	○	○
ECOCOOL SYN 7060	√	√	●	●	●	●	○	○	○			
ECOCOOL SYN 7390	√		●	●	●	●	○	○	○			

√ - Present | ○ - satisfactory | ● - preferred | Light Duty - turning, milling, drilling | Heavy Duty - tapping, reaming, broaching, gun drilling

ECOCUT and PLANTOCUT Neat Cutting Fluids



ECOCUT and PLANTOCUT neat metalworking fluids are designed for the latest ecological and workplace exposure considerations. They meet or exceed demands for efficient and cost effective metalworking. Additionally, this line of fluids offer:

- Optimum heat transfer
- High lubricity
- Good flushing
- Enhanced machining performance
- Excellent environmental and health protection
- Designed for use on the most demanding alloys
- Meet or exceed stringent demands of medical and aerospace

Local and global availability
Cutting fluid technology must adapt to the needs of the worldwide metal working industry. Our global FUCHS team makes sure that selected products are available in other parts of the world in the same quality.

Special Product Solutions: Low-Emission and MQL Fluids



Low Emission Cutting and Grinding Fluids – Better for People, Better for Companies

ECOCUT LE and PLANTOCUT low emission cutting and grinding fluids resolve issues with pronounced misting and evaporation common with conventional fluids. Ecocut LE series is formulated with premium base oils, and Plantocut series with synthetic ester base fluids. Both series provide proven high performance and stand out with their excellent economy and low emissions. Additionally, these fluids provide:

- Enhanced air quality
- Reduced fire and explosion hazards
- Extended service intervals for oil separators
- Lower consumption



Minimum Quantity Lubrication (MQL) Products

Ecocut Mikro Plus and Planto Mikro are product series specially developed for MQL and are approved by leading MQL equipment manufacturers. Overall, they provide a high ease of spraying, optimum droplet characteristics, excellent lubrication, and low odor.

ECOCUT MIKRO PLUS fluids are fatty alcohol-based and provide:

- Higher flashpoint than ester oils of the same viscosity
- Evaporate relatively easily to allow components to dry quickly

PLANTO MIKRO fluids are ester oil-based and provide:

- Higher boiling and flashpoints – even at lower viscosity ranges
- Significantly lower generation of vapor
- Formation of a thin film on components that is dry to the touch

ECOCUT and PLANTOCUT Neat Cutting Fluids – Selection Details

Product	Viscosity 40C, cST	Active EP	Dual Purpose	Substrate / Applications									
				Ferrous					Cast Iron	Alu- minum	Titani- um	Non- Ferrous	
				EDM	Honing	Grin- ding	Light Duty	Heavy Duty	All	All	All	All	
ECOCUT V 30	4			●									
ECOCUT 377 HO	7	√			●	○							
ECOCUT 2190	10	√				○	●	●					
ECOCUT 471B	10					○	●	●	●	●	●	●	
ECOCUT 100 GD	11	√				○	●	●					
ECOCUT 7505	12		●				●	●	●	●	●	●	
ECOCUT 5468	14	√					●	●	●		○		
ECOCUT 322	22		●			○	●	●	●	●	●	●	
ECOCUT SUPER PLUS 185	23	√					●	●	●				
ECOCUT 7510	33		●				●	●	●	●	●	●	
ECOCUT 110	38	√					●	●	○				
ECOCUT 570ND	41		●				●	●	●	●	●	●	
ECOCUT 488	48	√					●	●	●				
ECOCUT 5175 DP	68		●				●	○	○	○	●	●	
Low Emission Cutting and Grinding													
ECOCUT HFN 5 DC	5				●	●	●			○	○	○	
ECOCUT 710 LE	10				●	●	●	●	○				
PLANTOCUT 10 SR	10				●	●	●	○					
PLANTOCUT 10 SHD	10				●	●	○		○	○	○	○	
ECOCUT HFN 16 LE	16				●	●	●	○	○	○	○	○	
Minimum Quantity Lubrication (MQL)													
	Viscosity 40C, cST	Steel		Cast Iron		Aluminum		Copper					
ECOCUT MIKRO 6000 E	18	●		●		●		●					
ECOCUT MIKRO 6000	18	●		●		●		●					
ECOCUT MIKRO PLUS 20	27	●		●		●		●					
ECOCUT MIKRO 3000	34	●		●		●		●					

√ - Present | ○ - satisfactory | ● - preferred | Light Duty - turning, milling, drilling | Heavy Duty - tapping, reaming, broaching, gun drilling

Complete Solutions for all of your Manufacturing Processes

FUCHS is the world's largest independent manufacturer of lubricants with the most extensive program of metalworking fluids. Our comprehensive portfolio is supported by years of application engineering experience and customized solutions to benefit your manufacturing processes.



ECOCOOL

MACHINING: WM*

- High performance
- Economical
- Outstanding lubricity



ECOCUT

MACHINING: NEAT

- Increased reliability
- Economical
- Low misting and low evaporation



THERMISOL

QUENCHING

- Low distortion
- Low consumption
- Good compatibility



RENOCLEAN

CLEANING

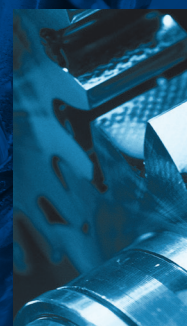
- Highly effective
- Unproblematic processes
- Outstanding emulsification and demulsification



RENOLIT

LUBRICATION: GREASES

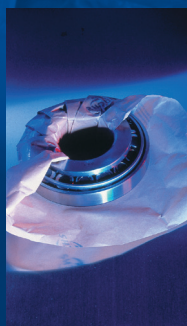
- Compatible
- Long-term and life-long lubrication



RENOLIN

LUBRICATION: OILS

- Compatible
- Excellent corrosion protection
- Optimum wear protection



ANTICORIT

PROTECTION

- Optimum protection
- Clean application



RENOFORM

METAL FORMING

- Cold forming lubricants for all forming applications
- Compatible with RENOCLEAN metal cleaners



PLANTOCUT

MACHINING: NEAT

- Non-mineral oil
- Low emission
- MQL

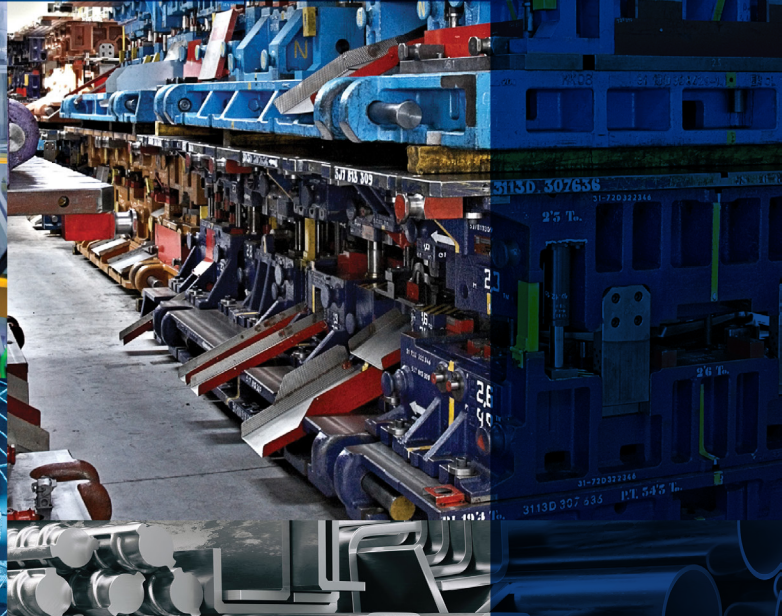
FUCHS LUBRICANTS CO.
17050 Lathrop Ave.
Harvey, IL 60426
United States
Phone +1 708-333-8900
E-mail: inquiry@fuchsus.com
www.fuchs.com/us

FUCHS LUBRICANTS CANADA LTD.
(Eastern Division)
405 Dobbie Drive
Cambridge, Ontario
N1R 5X9
Canada
Phone +1 519-622-2040
E-mail: inquiriesCA@fuchasca.com
www.fuchs.com/ca

FUCHS LUBRICANTS CANADA LTD.
(Pacific Division)
19829 99A Avenue
Langley, British Columbia
V1M 3G4
Canada
Phone +1 604-888-1552
E-mail: inquiriesCA@fuchasca.com
www.fuchs.com/ca

LUBRICANTES FUCHS DE
MEXICO, S.A. DE C.V.
Acceso C No. 101
Parque Industrial Jurica
76120 Querétaro, Qro.
Mexico
Phone +52 (442) 2 38 91-00
E-mail: info@fuchs.com.mx
www.fuchs.com/mx

Metal Forming Lubricants



LUBRICANTS.
TECHNOLOGY.
PEOPLE.



Innovative Lubricants for Current Stamping Challenges

SUBSTRATE CHALLENGES

As higher yield strength steel alloys are developed and commercialized, formability decreases, while work hardening and associated spring back become more pronounced, often accelerating tool and coating wear. Selecting a lubricant that is designed to meet increasingly difficult forming conditions is a necessity for robust process design. FUCHS' lubricant product range is comprised of all lubricant types used in press working for all alloys including ferrous, aluminum, magnesium and coated steels.

PROCESS CHALLENGES

The growing variety of steel grades and part complexities used in finished product designs demand lubricants with the versatility to meet all die lube needs in the shop, while also providing corrosion protection to multiple substrate surface types. Ultimately, the lubricant residue must be compatible with the available cleaning system, or be sufficiently inert that cleaning is not required before further processing or assembly. FUCHS chemistries provide you with choices to optimize your entire process including cleaning, corrosion protection, adhesives or paint applications.

HSE CHALLENGES

Employees and employers alike demand fluids that are safe in the work place. The regulatory environment demands innovation in lubricant design to assure compliance and minimize costs and risks related to fluid use, recirculation, treatment or disposal. FUCHS press lubes are designed to meet or exceed the latest regulations, and most often in advance of regulatory needs, such as chlorinated paraffin replacement.



Lubricants Overview

To Meet Process Challenges

Type	Product	Description
Synthetic water extendible series	ECODRAW BG	Unique active extreme pressure additives for advanced high strength steel alloys.
	ECODRAW EG	Peerless non-corrosive performance on zinc-coated substrates.
	ECODRAW HVE	Industry leader for versatile “house lube”.
	ECODRAW HVRG	Versatile and robust in-die performance with exceptional corrosion protection.
	RENOFORM SYN 4000	Formulated for clean, low foaming performance with yellow metals.
	RENOFORM SYN 7000	Heavy duty fluids with advanced corrosion protection and bio-stability for recirculation.
Water-miscible series	MONTGOMERY DB 4265C	Comprehensive industry leader, versatile “house lube”.
	MONTGOMERY DB 4265BW	Increased oil content, versatile.
	RENOFORM OS 7800	Chlorine-free, heavy duty, multi-metal, excellent wetting, ease of cleaning and bio-stability.
	RENOFORM OS 4000	Chlorine and sulfur free, extremely clean and versatile.
	RENOFORM OS 2800	Acceptable chlorinated paraffin with excellent corrosion protection and bio-stability.
Neat oils series	RENOFORM SV	Complete range of vanishing fluids.
	RENOFORM OL 1000	Low VOC replacements for vanishing fluids.
	RENOFORM OL 7000	Chlorine-free, moderate to heavy duty, wide viscosity range, versatile and clean.
	RENOFORM OL 8000	Chlorine-free, extreme duty fine blanking applications.
	RENOFORM OL 2000	Acceptable chlorinated paraffin with excellent corrosion protection.
	RENOFORM EXT	Universal extrusion and cold forming fluids.

Industrial Lubricants



Lubricants and Related Specialties



Industrial Oils

FUCHS understands the importance of lubricants in air compressors, and power transmission applications.

In machine tool applications such as gear boxes, hydraulics and other systems, FUCHS' industrial lubricants achieve higher productivity, improve efficiency, and save energy.

Our line of rapidly biodegrading lubricants for outdoor use is more environmentally friendly than hydrocarbon-based lubricants.

**RENOLIN, RENEP,
PLANTO**



Greases

Specially chosen base oils, performance based additives and thickeners are the basis for FUCHS' wide array of industrial and mobile equipment greases.

Lubricating greases are especially critical when used for lifetime lubrication. Rapidly biodegradable greases are an environmentally favorable alternative for sensitive applications.

FUCHS industrial lubricating greases are a balanced package that offers the ideal technical and economical solutions for all industrial and mobile equipment lubricating grease applications.

RENOLIT, PLANTO



Cutting Fluids

A modern cutting fluid is subjected to a variety of demands. Lubricants for metalworking processes must be effective, economical and free from ingredients that are harmful to our health and the environment. In downstream metalworking processes – customized cleaning solutions and compatible corrosion preventatives play an important role in production reliability and quality.

With its comprehensive range of lubricants and its many years of application experience, FUCHS understands its customers' processes and designs compatible solutions like no other lubricant manufacturer.

ECOCOOL, ECOCUT

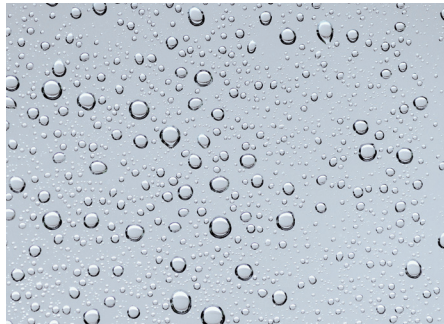


Forming Lubricants

Fluids are highly important in hot forging and cold press working to ensure part quality, process efficiency and compatibility with subsequent operations. FUCHS offers a wide range of forging, drawing, and stamping lubricants for all metals and processes.

FUCHS has developed breakthrough technology for light-weighting components and eliminates undesirable chemical ingredients.

RENOFORM
ECODRAW
LUBRODAL
MONTGOMERY

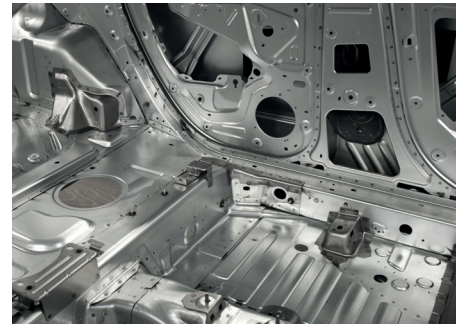


Cleaners

FUCHS manufactures a complete line of cleaning products for use in most systems designed to remove contaminants and prepare parts and assemblies for finishing. Our cleaners are designed to be fully compatible with our lubricants and with our customers' selection of metals and processes.

Our products and recommendations are based on a holistic approach toward the most efficient use of water and energy, part quality, and process safety. We also manufacture general purpose cleaners to clean floors and equipment, including neutral pH products to ensure employee safety.

RENOCLEAN



Corrosion Protection

FUCHS has an extensive range of products designed to protect ferrous and non-ferrous materials from corrosion. Depending on the market segment, the application processes for a corrosion preventative can vary greatly ranging from conventional applications such as dipping, to more specialized applications like fogging and electrostatic spraying.

FUCHS offers several classes of corrosion preventatives such as water miscible, solvent/oil, neat oil, and full solids products designed to work in most rust preventative application processes. Protection periods range from short-term in-process to long-term storage conditions. Our corrosion preventatives are formulated to meet the performance and safety needs of today's market.

ANTICORIT

FUCHS Lubricants Co. Capabilities and Services



LUBRICANTS.
TECHNOLOGY.
PEOPLE.



Your Lubricants Partner



Industrial Lubricants

- Cutting & Grinding Fluids
- Drawing & Stamping Fluids
- Corrosion Inhibitors
- First Fill & Maintenance Greases
- Quench Oils
- Cleaners
- Hydroforming Lubricants
- Extrusion Oils
- Lubricating Oils
- Concrete Form Release
- RENOLIT - Performance Industrial Greases



Steel Industry

- High Temperature Greases
- Morg Oils
- Caster Lubricants
- Maintenance Lubricants
- Corrosion Preventatives & Prelube
- RENOLIT - Performance Steel Mill Greases



Mining Lubricants

- SOLCENIC - Longwall Fluids
- POWERGEAR - Gear Lubricants
- RENOLIT - High Performance Greases
- GEARMASER - Synthetic Lubricants
- CENTAK - Open Gear Lubricants



Specialty Lubricants

- Forging Lubricants
 - Graphitic & Non-Graphitic Metal Forming Lubricants
- Die Lubricants & Billet Coatings
- Food Grade Products
 - NSF H-1 Food Grade Technology
 - Kosher, Halal, CFIA & AQIS Certified
- Open Gear Division
 - CEPLATTYN - Open Gear Components
 - Gear Conditioning Monitoring Service
 - Graphical Reporting
- Rail Flange Curve Greases



Automotive Lubricants

- TITAN - Engine Oils
- TITAN - Gear & Axle Oils
- TITAN - Automatic Transmission Fluid (ATF) & Continuously Variable Transmission (CVT) Fluids
- TITAN - Universal Tractor Transmission Oil (UTTO)
- PENTOSIN - Double Clutch Transmission (DCT) Fluids
- PENTOSIN - Central Hydraulic Fluid (CHF) & Power Steering Fluid (PSF)
- MAINTAIN - Engine Antifreeze / Coolant
- RENOLIT - OEM / Automotive Performance Greases



Forestry Lubricants

- Air Line Lubricants
- Barker, Compressor & Gear Oils
- Biodegradable Lubricating & Hydraulic Fluids
- Chain / Slideway Oils
- Cleaners & Greases
- Corrosion Preventatives
- Grinding Fluids
- Saw & Sawguide Oils



Focus on Success

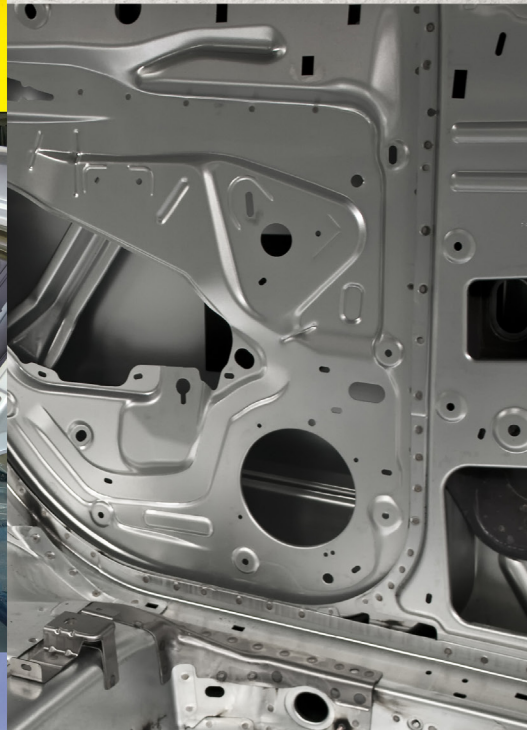
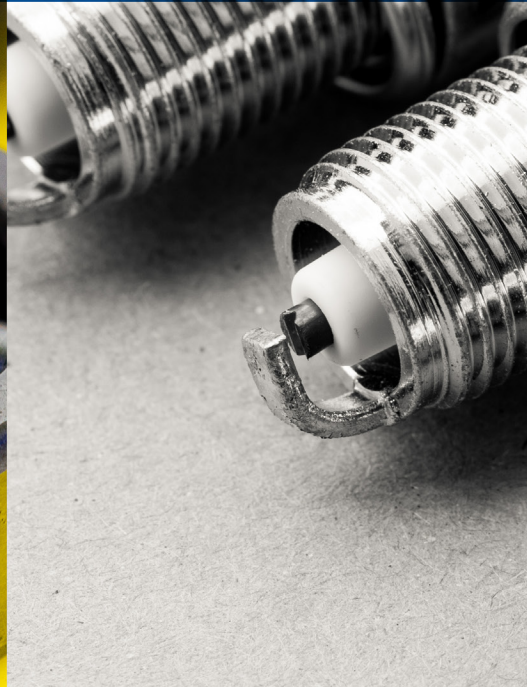
Since the company was founded in 1931, The FUCHS Group has grown into the largest independent manufacturer of specialty lubricants in the world. Recognized internationally for its innovative lubricants and industry related specialty products, FUCHS has a global reach with manufacturing facilities in over 40 countries.

The leading-edge technology of our products, the expertise of our employees and factory direct supply channels provide the service and value our customers expect, and makes FUCHS Lubricants Canada Ltd. unique in the marketplace. FUCHS is committed to providing our customers with comprehensive solutions that suit all of your lubricant needs.

- Seven North American manufacturing facilities provide operational redundancy and uninterrupted flow of goods.
- FUCHS operates a network of warehouses to ensure local supply for timely cost savings.
- Factory trained field technicians operating locally to provide unparalleled service and expertise.
- FUCHS' portfolio offers the most comprehensive line of advanced technology products available in the industry.
- ISO 9001:2015 Registered Quality Management System

ANTICORIT

Corrosion Preventatives



MOVING YOUR WORLD

LUBRICANTS.
TECHNOLOGY.
PEOPLE.



Water Dilutable Corrosion Preventatives	Properties					Application						
	Viscosity @40°C	Flash Point °C	VOC (%)	pH @ 5% in water	Appearance	Film Type	Corrosion Prevention (ASTM D 2247)	Filterable	Dewatering	Spray	Dipping	Brushing
ANTICORIT AQ 1961	--	--	10	9	Amber	Dry - Touch	+	●	--	●	●	●
ANTICORIT OS 5200	--	--	26	9.1	Amber	Oily	++	●	--	●	●	●
ANTICORIT AQ 930 S	--	--	NDA	9.5	Clear Blue	Dry - Touch	+	●	--	●	●	●

Solvent - Based Dewatering Fluids	Properties					Application						
	Viscosity @40°C	Flash Point °C	VOC (%)	pH @ 5% in water	Appearance	Film Type	Corrosion Prevention (ASTM D 2247)	Filterable	Dewatering	Spray	Dipping	Brushing
ANTICORIT SV 50265 X	1.4	42	90	--	Amber	Soft Waxy	+++	●	●	●	●	●
ANTICORIT SV 70386 HF	1.5	60	80	--	Amber	Soft Waxy	+++	●	●	●	●	●
ANTICORIT DFW 6301	1.5	61	81	--	Brown - Clear	Soft Waxy	+++	●	●	●	●	●
ANTICORIT DFW 7301	2.5	62	76	--	Brown - Clear	Soft Waxy	+++	●	●	●	●	●

Solvent/Oil - Based Dewatering Fluids	Properties					Application						
	Viscosity @40°C	Flash Point °C	VOC (%)	pH @ 5% in water	Appearance	Film Type	Corrosion Prevention (ASTM D 2247)	Filterable	Dewatering	Spray	Dipping	Brushing
ANTICORIT DFO 6301	2.5	43	82	--	Brown - Clear	Oily	+++	●	●	●	●	●
ANTICORIT DFO 7301	2.5	43	76	--	Brown - Clear	Oily	+++	●	●	●	●	●
ANTICORIT SL 7015	13	62	35	--	Amber	Oily	+++	●	●	●	●	●
ANTICORIT SL 7017	7	62	40	--	Amber	Oily	+++	●	●	●	●	●

Corrosion Preventative Oils	Properties					Application						
	Viscosity @40°C	Flash Point °C	VOC (%)	pH @ 5% in water	Appearance	Film Type	Corrosion Prevention (ASTM D 2247)	Filterable	Dewatering	Spray	Dipping	Brushing
ANTICORIT OL 407 MS	5.2	135	73	--	Amber	Oily	+++	●	--	●	●	●
ANTICORIT SV 38 XA	439	150	NDA	--	Dark Brown	Heavy Wax	++++	●	--	●	●	●
BEARINGS												
ANTICORIT BGI 15	14		NDA	--	Amber	Oily	--	●	--	●	●	●
ANTICORIT BGI 21US	20.5	146	NDA	--	Amber	Oily	--	●	--	●	●	●
ANTICORIT LSB	78	205	NDA	--	Amber	Oily	--	●	--	●	●	●
ANTICORIT 04 W2	32	73	NDA	--	Dark Brown	Oily	--	●	--	●	●	●

Green Circle (●) = Suitable for this application

Yellow Circle (●) = Not suitable for this application

Humidity Cabinet Hours, Cold Rolled Steel:

+ = ≤ 150 hrs

++ = ≤ 300 hrs

+++ = ≤ 500 hrs

++++ = ≤ 700hrs

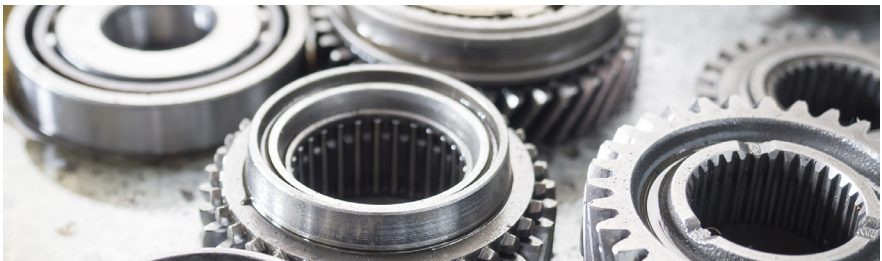
-- = Not Applicable

Industrial Corrosion Preventatives

FUCHS Industrial Corrosion Preventatives are designed for all common metal processing applications and metal substrates. FUCHS has a variety of metal protection options including solvent, oil, and water based corrosion prevention compounds. This line of fluids has been designed with the latest anti-corrosion technology, which make them ideal for in-process, transit, and indoor or outdoor storage protection.

The ANTICORIT DFW and ANTICORIT DFO Series corrosion prevention compounds have been formulated for performance, and global availability. They can be provided to any of the major FUCHS global manufacturing markets with assurance of uniformity of performance.

ANTICORIT products designed for bearing applications are intended for the entire range of bearing sizes and long term storage and transit. The low viscosity oils also contain Vapor Phase Corrosion Inhibitor for added assurance of protection for parts packed in bags or other enclosed containers. The higher viscosity oils, with and without wax are appropriate for large bearings in unsealed dunnage.



CLEANERS FOR INDUSTRIAL APPLICATIONS



Neutral - Cleaners	Properties		Application				Materials		Soils	
	pH 5% Concentration	VOC (%)	Immersion / Ultrasonic	Spray Application	Corrosion Prevention @ 5%	Oil Rejecting	Cast Iron, Steel, Stainless	Aluminum / Brass & Copper	Coolant / Quench Fluids	Drawing / Stamping Oils
RENOCLEAN 9009	9.5	16.5	● / ●	●	+	●	●	● / ●	● / ●	● / ●
SPRAY CLEANER 6513 RP	9.5	2.4	● / ●	●	++	●	●	● / ●	● / ●	● / ●
RENOCLEAN GREEN	9.8	2.6	● / ●	●	--	●	●	● / ●	● / ●	● / ●
RENOCLEAN 9024	9.4	8.3	● / ●	●	+	●	●	● / ●	● / ●	● / ●

Alkaline - Cleaners	Properties		Application				Materials		Soils	
	pH 5% Concentration	VOC (%)	Immersion / Ultrasonic	Spray Application	Corrosion Prevention @ 5%	Oil Rejecting	Cast Iron, Steel, Stainless	Aluminum / Brass & Copper	Coolant / Quench Fluids	Drawing / Stamping Oils
RENOCLEAN 1275 NF	10.2	0	● / ●	●	--	●	●	● / ●	● / ●	● / ●
SPRAY CLEANER 1281 C	10.2	1.9	● / ●	●	--	●	●	● / ●	● / ●	● / ●
RENOCLEAN 7176	13	0	● / ●	●	++	●	●	● / ●	● / ●	● / ●
RENOCLEAN C 2160	13.3	0	● / ●	●	++	●	●	● / ●	● / ●	● / ●
SPRAY CLEANER 3952	14	0	● / ●	●	++	●	●	● / ●	● / ●	● / ●

Floor - Cleaners	Properties		Application				Materials		Soils	
	pH 5% Concentration	VOC (%)	Immersion / Ultrasonic	Spray Application	Corrosion Prevention @ 5%	Oil Rejecting	Cast Iron, Steel, Stainless	Aluminum / Brass & Copper	Coolant / Quench Fluids	Drawing / Stamping Oils
RENOCLEAN SUPER 960 NP	9.5	0	● / ●	●	N/A	N/A	●	● / ●	● / ●	● / ●
RENOCLEAN SUPER 844	12.2	0	● / ●	●	N/A	N/A	●	● / ●	● / ●	● / ●
RENOCLEAN FC 846	12.8	0	● / ●	●	N/A	N/A	●	● / ●	● / ●	● / ●
HYDROCLEAN 10 KB	13	3	● / ●	●	N/A	N/A	●	● / ●	● / ●	● / ●

Specialized - Cleaners	Properties		Application				Materials		Soils	
	pH 5% Concentration	VOC (%)	Immersion / Ultrasonic	Spray Application	Corrosion Prevention @ 5%	Oil Rejecting	Cast Iron, Steel, Stainless	Aluminum / Brass & Copper	Coolant / Quench Fluids	Drawing / Stamping Oils
RENOCLEAN OL 5 MS	N/A	77	● / ●	N/A	N/A	●	●	● / ●	● / ●	● / ●
RENOCLEAN SGC 62	10	17	● / ●	●	++	●	●	● / ●	● / ●	● / ●
ACID CLEANER 5557	1	0	● / ●	N/A	N/A	●	●	● / ●	N/A	N/A

Green Circle (●) = Suitable for this application

Yellow Circle (●) = Not suitable for this application

Typical indoor storage of dry parts:

+ = Good

++ = Better

-- = Not Recommended

*Consult your FUCHS representative for product recommendations

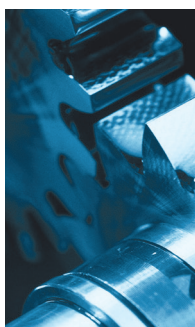
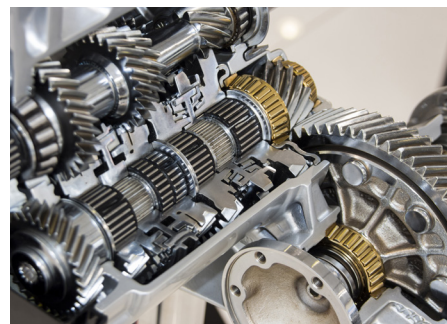
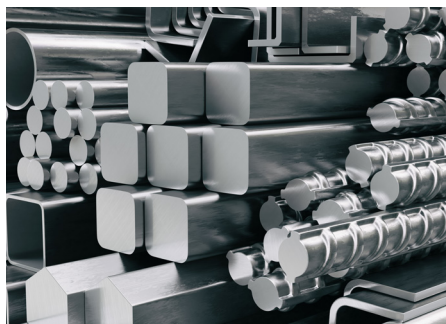
Industrial Cleaners

FUCHS Industrial Process Cleaners are designed for all common metal cleaning applications specifically for removal of metal working and metal forming soils. They have been designed with the latest technologies, in consideration of the environment and the occupational safety of workers who use them. FUCHS cleaners offer low maintenance operation and long service life. Our cleaning products are complementary to FUCHS metal lubricants and provide the cleanliness and necessary corrosion protection to prepare parts for finishing and assembly.

FUCHS corrosion preventatives are available for additional protection during storage and shipping.

FUCHS RENOCLEAN 9000 Series offers a range of moderate to robust alkaline cleaning solutions designed to economically remove soils for a range of cleaning applications. From basic single stage spray stations to more intricate multiple stage systems, the RENOCLEAN Series includes fluids for multi-metal and low volatility applications.

The range also includes products for general maintenance use, floor cleaning, and metal working fluid system cleaning.



RENOLIN

LUBRICATION: OILS

- Compatible
- Excellent corrosion protection
- Optimum wear protection



ECOCUT

MACHINING: NEAT

- Increased reliability
- Economical
- Low misting and low vaporation



RENOFORM

METAL FORMING

- Cold forming lubricants for all forming applications
- Designed for all substrates and surface coatings
- Compatible with RENOCLEAN metal cleaners

CASSIDA

Solutions for the Meat and Poultry Industry



LUBRITECH
Special Application Lubricants

CASSIDA food grade lubricants – Solutions for the Meat and Poultry Industry



CASSIDA food grade lubricants

In the meat and poultry industry, the use of food-safe machine lubricants can mean the difference between a good name and no name at all. The production of food, beverages, and related products puts the strictest requirements on the lubricants used in the manufacturing process.

Consumer protection is absolutely essential. Incidental oil contamination at any point in the process needs to be avoided by meat and poultry manufacturers, who process millions of pounds of food for global markets every year. In addition, ensuring that the production process runs smoothly and is highly effective (meaning longer component lifetimes and extended maintenance intervals) is our number one priority.

Our customers benefit from the excellent quality of the CASSIDA portfolio, which has been confirmed by numerous OEM approvals given by well-known manufacturers of production and manufacturing equipment.

Today, major meat and poultry manufacturers are taking the risk out of their processes by switching to CASSIDA food grade lubricants as the safe alternative for all lubrication points in their production plants.

Our support package

As well as providing you with high-performance food grade lubricants, FUCHS LUBRITECH is able to offer expert technical advice and support. FUCHS LUBRITECH can assist with oil condition monitoring, failure analysis and diagnosis, Lubrication Critical Control Point (LCCP) surveys, and much more.

Performance and safety

The CASSIDA range is NSF H1 registered, as well as being the first food grade lubricant range to receive ISO 21469 certification. Certified for Halal and Kosher production, the CASSIDA range provides a total solution for the meat and poultry industry.

NSF H1 registered
ISO certified



Nonfood Compounds
Program Listed
ISO 21469 certified

Kosher certified

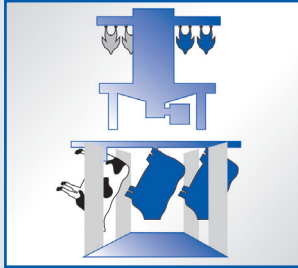


Halal certified

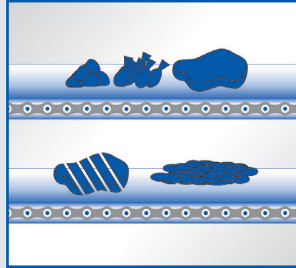


Basic Process Chart

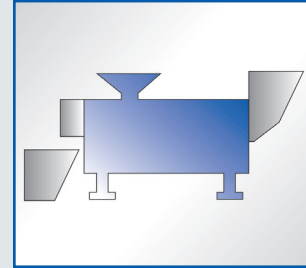
1. Slaughtering, gutting, butchering, washing



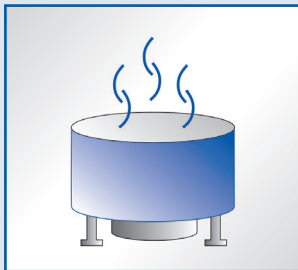
2. Cutting portions, mincing



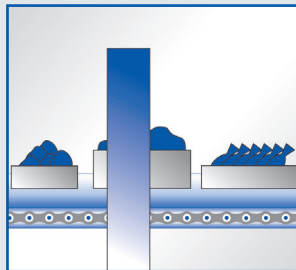
2A. Seasoning, mixing



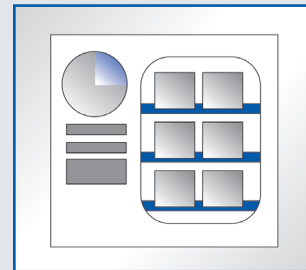
2B. Forming, cooking, battering, frying, deep-frying



3. Forming, filling, labelling, packing



4. Storage, cold and frozen



Overview of CASSIDA Products

Process Steps	Main Products	Common Machine Parts	Process Example
1. Slaughtering, gutting, butchering, washing	CASSIDA FLUID GL or PAG Series	Gearboxes	Direct contact tools
	CASSIDA CHAIN OIL Series	Chains, conveyors	
	FM GREASE DC	Hooks	
	CASSIDA GREASE EPS 2 / FM GREASE CSC EP 2	Bearings	
	CASSIDA FLUID CR Series	Compressors	
	CASSIDA FLUID CRE 46	Compressors	
	FM GREASE DC / CASSIDA or FM FLUID DC Series	Blades, knives, cutters	
2. Cutting portions, mincing	CASSIDA FLUID GL or PAG Series	Gearboxes	Meat chopper, mincer
	CASSIDA CHAIN OIL Series	Chains, conveyors	
	CASSIDA FLUID HF Series	Hydraulics	
	CASSIDA GREASE EPS 2	Bearings	
	CASSIDA FLUID CR Series	Compressors	
	FM GREASE DC	Blades, knives, cutters	

Process Steps	Main Products	Common Machine Parts	Process Example
2A. Seasoning, mixing	FM GREASE DC / FM FLUID DC Series	Blades, knives, cutters	Direct contact tools
	CASSIDA FLUID GL or PAG Series	Gearboxes	
	CASSIDA GREASE EPS 2 / FM GREASE CSC EP 2	Bearings	
	CASSIDA CHAIN OIL Series	Chains, conveyors	
2B. Forming, cooking, battering, frying	CASSIDA FLUID GL or PAG Series	Gearboxes	Mould release
	CASSIDA GREASE EPS 2 / FM GREASE CSC EP 2	Bearings	
	CASSIDA FLUID HF Series	Hydraulics	
	CASSIDA FM HEAT TRANSFER FLUID 32	Heating transfer system	
	FM GREASE DC	Direct contact areas	
3. Forming, filling, labelling, packing	CASSIDA FLUID GL or PAG Series	Gearboxes	Forming area, mould release
	CASSIDA FLUID HF Series	Hydraulics	
	CASSIDA GREASE EPS / RLS Series	Bearings	
	CASSIDA CHAIN OIL Series	Chains	
	FM GREASE DC	Direct contact areas	
	CASSIDA GREASE EPS / RLS Series	Bearings	Filling area
	CASSIDA FLUID GL or PAG Series	Gearboxes	
	CASSIDA FLUID HF Series	Hydraulics	Packaging, labelling, paperboard packing
	CASSIDA GREASE EPS 2 / FM GREASE CSC EP 2	Bearings	
	CASSIDA GREASE RLS 00	Central lubrication system	
	CASSIDA FLUID GL or PAG Series	Gearboxes	
	CASSIDA CHAIN OIL Series	Drive chains	
	CASSIDA FLUID HF Series	Hydraulics	
	CASSIDA FLUID VP 68 or 100	Vacuum pumps	
4. Storage, cold and frozen	CASSIDA FLUID RF Series	Refrigeration compressors	Cool storage, refrigeration
	CASSIDA FLUID HF / GL Series	Hydraulics, gearboxes	
	CASSIDA GREASE LTS 1 / RLS 00	Central lubrication system	
	CASSIDA CHAIN OIL LT	Chains, conveyors	
General maintenance	CASSIDA SILICONE FLUID SPRAY		
	FM KRYSTALL		
	FM AIRLUBE AA		

FUCHS LUBRITECH – SPECIAL APPLICATION LUBRICANTS

The FUCHS Group has developed, produced, and sold lubricants and related specialties for more than 80 years – for virtually all applications and sectors. With over 100,000 customers and 50 companies worldwide, we are the world's leading independent lubricant supplier.

Within the FUCHS Group, FUCHS LUBRITECH is the expert for Special Application Lubricants. A team of more than 500 specialists around the world work to meet your needs. However demanding the application, we offer a specialized solution.

FUCHS LUBRITECH specialty lubricants stand for highest performance and sustainability, safety and reliability, and efficiency and cost savings. They represent a promise: technology that pays back.

CASSIDA

Solutions for the Edible Oil Processing Industry



LUBRITECH
Special Application Lubricants

CASSIDA food grade lubricants – Solutions for the Edible Oil Processing Industry



CASSIDA food grade lubricants

In the edible oil processing industry, the use of food-safe machine lubricants can mean the difference between a good name and no name at all. The production of edible oil and related products puts the strictest requirements on the lubricants used in the manufacturing process.

Consumer protection is absolutely essential. Incidental and direct oil contamination at any point in the process needs to be avoided by edible oil manufacturers, who process millions of gallons of edible oil for global markets every year. In addition, ensuring that the production process runs smoothly and is highly effective (meaning longer component lifetimes and extended maintenance intervals) is our number one priority.

Our customers benefit from the excellent quality of the CASSIDA portfolio, which has been confirmed by numerous OEM approvals given by well-known manufacturers of production and manufacturing equipment.

Today, major edible oil manufacturers are taking the risk out of their processes by switching to CASSIDA food grade lubricants as the safe alternative for all lubrication points in their production plants.

Our support package

As well as providing you with high-performance food grade lubricants, FUCHS LUBRITECH is able to offer expert technical advice and support. FUCHS LUBRITECH can assist with oil condition monitoring, failure analysis and diagnosis, Lubrication Critical Control Point (LCCP) surveys, and much more.

Performance and safety

The CASSIDA range is NSF H1 registered, as well as being the first food grade lubricant range to receive ISO 21469 certification. Certified for Halal and Kosher production, the CASSIDA range provides a total solution for the edible oil processing industry.

NSF H1 registered
ISO certified



Nonfood Compounds
Program Listed
ISO 21469 certified

Kosher certified

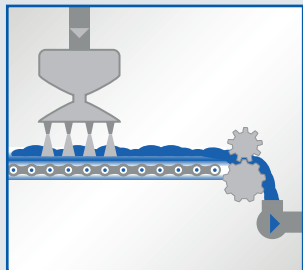


Halal certified

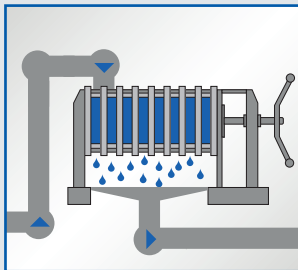


Basic Process Chart

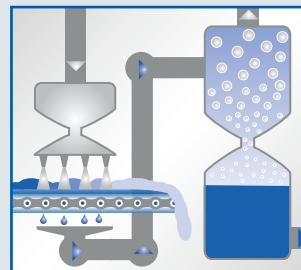
1. Cleaning, grinding, sterilizing, drying



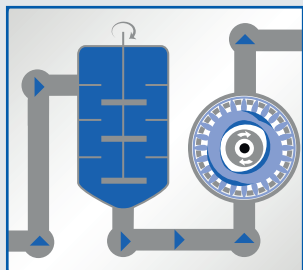
2. Pressing



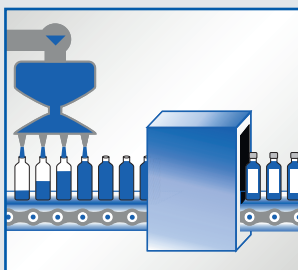
2A. Solvent extraction



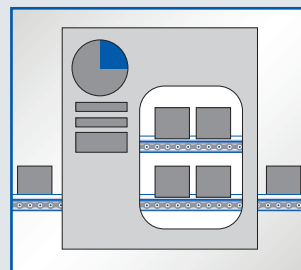
3. Refining: Neutralising, degumming, bleaching, deodorising



4. Filling, labelling



5. Packing, palletizing, storage



Overview of CASSIDA Products

Process Steps	Main Products	Common Machine Parts	Process Example
1. Cleaning, grinding, sterilizing, drying	CASSIDA FLUID GL or PAG Series	Gearboxes	
	CASSIDA CHAIN OIL Series	Chains, conveyors	
	CASSIDA GREASE EPS 2 / FM GREASE CSC EP Series / FM GREASE 2	Bearings	
	CASSIDA FLUID CR Series	Compressors, blowers	
	CASSIDA FLUID CRE 46	Compressors	
	CASSIDA FLUID HF Series	Hydraulics	
2. Pressing	CASSIDA FLUID GL or PAG Series	Gearboxes	
	CASSIDA CHAIN OIL Series	Chains, conveyors	
	CASSIDA FLUID HF Series	Hydraulics	
	CASSIDA GREASE EPS 2 / FM GREASE CSC EP Series / FM GREASE 2	Bearings	
2A. Solvent extraction	CASSIDA FM HEAT TRANSFER FLUID 32	Heat transfer system	
	CASSIDA FLUID GL or PAG Series	Gearboxes	
	CASSIDA GREASE EPS 2 / FM GREASE CSC EP Series	Bearings	
	CASSIDA GREASE FC Series	Bearings exposed to solvent	
	CASSIDA CHAIN OIL Series	Chains, conveyors	
	CASSIDA FLUID DC Series	Solvent absorption	
3. Refining: neutralizing, degumming, bleaching, deodorizing	FM HEAT TRANSFER FLUID 32	Heat transfer system	
	CASSIDA FLUID GL or PAG Series	Gearboxes	
	CASSIDA GREASE EPS 2 / FM GREASE CSC EP Series	Bearings	
	CASSIDA GREASE FC Series	Bearings exposed to chemicals	
	CASSIDA FLUID HF Series	Hydraulics	
4. Filling	CASSIDA FLUID GL or PAG Series	Gearboxes	
	CASSIDA FLUID HF Series	Hydraulics	
	CASSIDA GREASE EPS / RLS Series	Bearings, filling machine	Filling area
	CASSIDA GREASE HTS 2 / FM GREASE CSC EP Series	Bearings, filling machine	
	CASSIDA CHAIN OIL Series	Chains	
4. Labelling	CASSIDA GREASE EPS 2 / FM GREASE CSC EP Series	Bearings	
	CASSIDA GREASE RLS 00, GTS 2	Central lubrication system	
	CASSIDA FLUID GL or PAG Series	Gearboxes	Packaging, labelling, paperboard packing
	CASSIDA CHAIN OIL Series	Drive chains	
	CASSIDA FLUID HF 46, 68, 100 or GL 150	Hydraulics	
	CASSIDA FLUID VP 100	Vacuum pump	
5., 6. Packing, palletizing, storage	CASSIDA FLUID RF Series	Refrigeration compressors	
	CASSIDA GREASE EPS / RLS Series	Bearings	
	CASSIDA FLUID HF / HFS / GL Series	Hydraulics, gearboxes	
	CASSIDA CHAIN OIL Series	Chains, conveyors	
General maintenance	FM KRYSTALL		
	CASSIDA SILICONE FLUID SPRAY		

FUCHS LUBRITECH – SPECIAL APPLICATION LUBRICANTS

The FUCHS Group has developed, produced, and sold lubricants and related specialties for more than 80 years – for virtually all applications and sectors. With over 100,000 customers and 50 companies worldwide, we are the world's leading independent lubricant supplier.

Within the FUCHS Group, FUCHS LUBRITECH is the expert for Special Application Lubricants. A team of more than 500 specialists around the world work to meet your needs. However demanding the application, we offer a specialized solution.

FUCHS LUBRITECH specialty lubricants stand for highest performance and sustainability, safety and reliability, and efficiency and cost savings. They represent a promise: technology that pays back.

CASSIDA

Solutions for the Dairy Industry



LUBRITECH
Special Application Lubricants

CASSIDA food grade lubricants – Solutions for the Dairy Industry



CASSIDA food grade lubricants

In the dairy industry, the use of food-safe machine lubricants can mean the difference between a good name and no name at all. The production of food, beverages, and related products puts the strictest requirements on the lubricants used in the manufacturing process.

Consumer protection is absolutely essential. Incidental oil contamination at any point in the process needs to be avoided by dairy manufacturers, who process millions of pounds of food for global markets every year. In addition, ensuring that the production process runs smoothly and is highly effective (meaning longer component lifetimes and extended maintenance intervals) is our number one priority.

Our customers benefit from the excellent quality of the CASSIDA portfolio, which has been confirmed by numerous OEM approvals given by well-known manufacturers of production and manufacturing equipment.

Today, major dairy product manufacturers are taking the risk out of their processes by switching to CASSIDA food grade lubricants as the safe alternative for all lubrication points in their production plants.

Our support package

As well as providing you with high-performance food grade lubricants, FUCHS LUBRITECH is able to offer expert technical advice and support. FUCHS LUBRITECH can assist with oil condition monitoring, failure analysis and diagnosis, Lubrication Critical Control Point (LCCP) surveys, and much more.

Performance and safety

The CASSIDA range is NSF H1 registered, as well as being the first food grade lubricant range to receive ISO 21469 certification. Certified for Halal and Kosher production, the CASSIDA range provides a total solution for the dairy industry.

NSF H1 registered
ISO certified



Nonfood Compounds
Program Listed
ISO 21469 certified

Kosher certified

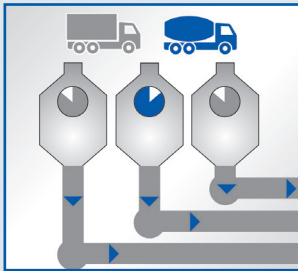


Halal certified



Basic Process Chart

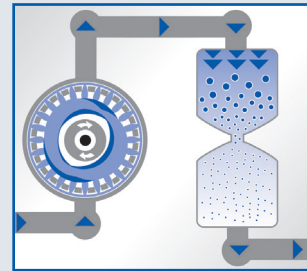
1. Separation and standardization
(receipt, pretreatment, skimming)



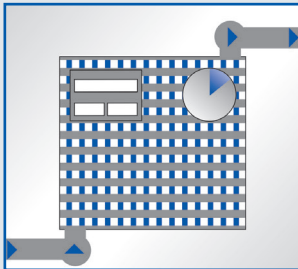
1A. Manufacture of by-products
(cheese, butter, milk powder, yogurt, ice cream)



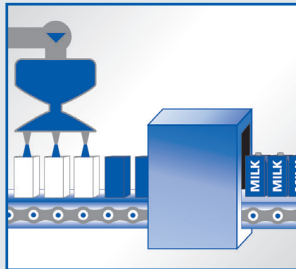
2. Centrifugation and homogenization



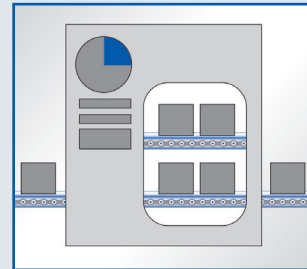
3. Pasteurization, sterilization



4. Filling, labelling, packing



5. Palletizing, storage, cold and frozen



Overview of CASSIDA Products

Process Steps	Main Products	Common Machine Parts	Process Example
1. Separation and standardization (receipt, pretreatment, skimming)	CASSIDA FLUID GL or PAG Series	Gearboxes	Dairy ingredients silo, sugar silo, decanting, separation, mixing and pumping
	CASSIDA CHAIN Oil Series	Chains, conveyors	
	CASSIDA GREASE EPS or RLS Series	Bearings	
	CASSIDA FLUID CR Series	Compressors	
	CASSIDA FLUID CRE 46	Compressors	
1A. Manufacture of by-products (cheese, butter, milk powder, yogurt, ice cream)	CASSIDA FLUID GL or PAG Series	Gearboxes	Mixing and pumping
	CASSIDA CHAIN Oil Series	Chains, conveyors	Pressing
	CASSIDA FLUID HF Series	Hydraulics	Sterilising, atomising, drying
	CASSIDA GREASE EPS or RLS Series	Bearings	Robotics
	CASSIDA FLUID CR Series	Compressors	Cutting
	CASSIDA FLUID CRE 46	Compressors	
	FM GREASE DC	Blades, knives, cutters	Direct contact tools
2. Centrifugation and homogenization	CASSIDA FLUID GL or PAG Series	Gearboxes	Centrifugation
	CASSIDA FLUID HF or HFS Series	Bearings	Homogenisation
	CASSIDA FLUID CR Series		
	CASSIDA FLUID CRE 46	Compressors	
	CASSIDA GREASE EPS / FM GREASE CSC EP 2		
3. Pasteurization, sterilization	CASSIDA FLUID GL or PAG Series	Gearboxes	
	CASSIDA GREASE EPS 2 / HTS 2 / GTS 2	Bearings	
	CASSIDA FLUID HF Series	Hydraulics	
	CASSIDA FM HEAT TRANSFER FLUID 32	Heating transfer system	
4. Filling	CASSIDA GREASE EPS / RLS Series	Bearings	
	CASSIDA FLUID GL or PAG Series	Gearboxes	
	CASSIDA FLUID HF Series	Hydraulics	
	CASSIDA FLUID CR Series	Compressors	
	CASSIDA FLUID CRE 46	Compressors	
4. Labelling, packing	CASSIDA GREASE EPS 2	Bearings	
	CASSIDA GREASE RLS Series	Central lubrication system	
	CASSIDA FLUID GL or PAG Series	Gearboxes	
	CASSIDA CHAIN Oil Series	Drive chains	
	CASSIDA FLUID HF 46, 68, 100 or GL 150	Hydraulics	
	CASSIDA FLUID VP 68 or 100	Vacuum pump	
5. Palletizing, storage, cold and frozen	CASSIDA FLUID RF Series	Refrigeration compressors	
	CASSIDA FLUID HF / GL Series	Hydraulics, gearboxes	
	CASSIDA GREASE LTS, RLS Series	Bearings	
	CASSIDA CHAIN OIL LT	Chains, conveyors	
General maintenance	CASSIDA SILICONE FLUID SPRAY		
	FM KRYSTALL		
	FM AIRLUBE AA		

FUCHS LUBRITECH – SPECIAL APPLICATION LUBRICANTS

The FUCHS Group has developed, produced, and sold lubricants and related specialties for more than 80 years – for virtually all applications and sectors. With over 100,000 customers and 50 companies worldwide, we are the world's leading independent lubricant supplier.

Within the FUCHS Group, FUCHS LUBRITECH is the expert for Special Application Lubricants. A team of more than 500 specialists around the world work to meet your needs. However demanding the application, we offer a specialized solution.

FUCHS LUBRITECH specialty lubricants stand for highest performance and sustainability, safety and reliability, and efficiency and cost savings. They represent a promise: technology that pays back.

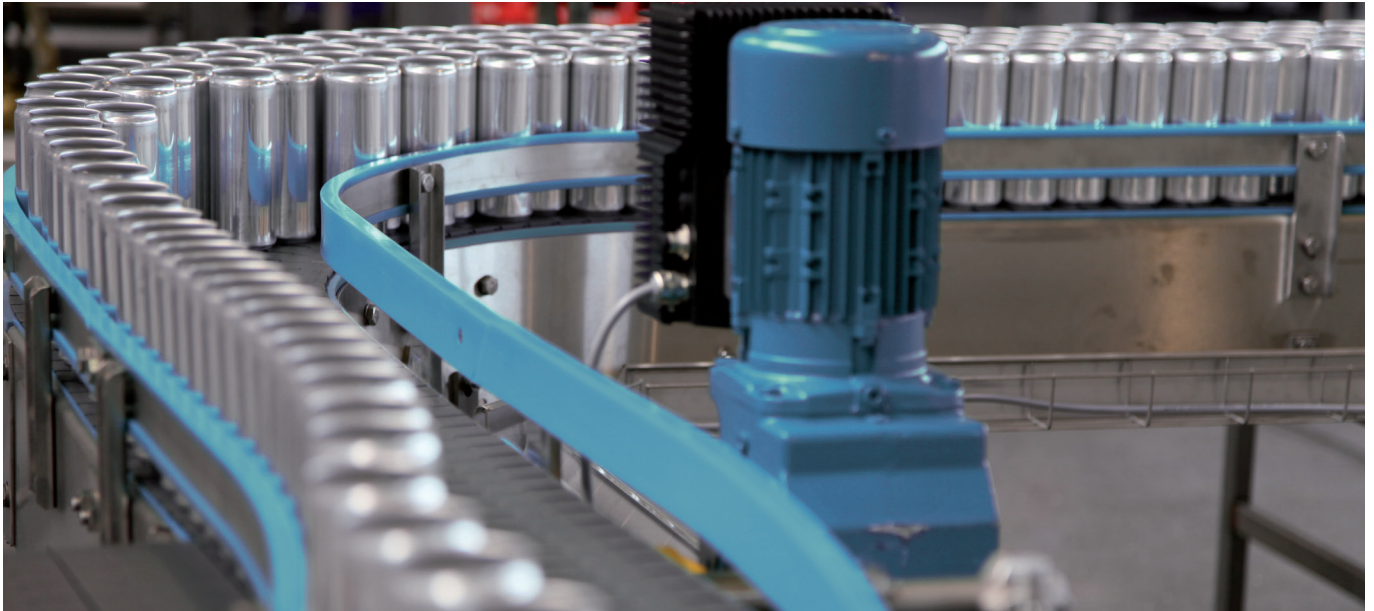
CASSIDA

Solutions for the Beverage and Brewing Industry



LUBRITECH
Special Application Lubricants

CASSIDA food grade lubricants – Solutions for the Beverage and Brewing Industry



CASSIDA food grade lubricants

In the food and beverage manufacturing industry, the use of food-safe machine lubricants can mean the difference between a good name and no name at all. The production of food, beverages, and related products puts the strictest requirements on the lubricants used in the manufacturing process.

Consumer protection is absolutely essential. Incidental oil contamination at any point in the process needs to be avoided by breweries and beverage manufacturers, who brew, mix, can, and bottle millions of gallons of beverages for global markets every year. In addition, ensuring that the production process runs smoothly and is highly effective (meaning longer component lifetimes and extended maintenance intervals) is our number one priority.

Our customers benefit from the excellent quality of the CASSIDA portfolio, which has been confirmed by numerous OEM approvals given by well-known manufacturers of production and manufacturing equipment.

Today, major brewers and beverage manufacturers are taking the risk out of their processes by switching to CASSIDA food grade lubricants as the safe alternative for all lubrication points in their production plants.

Our support package

As well as providing you with high-performance food grade lubricants, FUCHS LUBRITECH is able to offer expert technical advice and support. FUCHS LUBRITECH can assist with oil condition monitoring, failure analysis and diagnosis, Lubrication Critical Control Point (LCCP) surveys, and much more.

Performance and safety

The CASSIDA range is NSF H1 registered, as well as being the first food grade lubricant range to receive ISO 21469 certification. Certified for Halal and Kosher production, the CASSIDA range provides a total solution for the meat and poultry industry.

NSF H1 registered
ISO certified



Nonfood Compounds
Program Listed
ISO 21469 certified

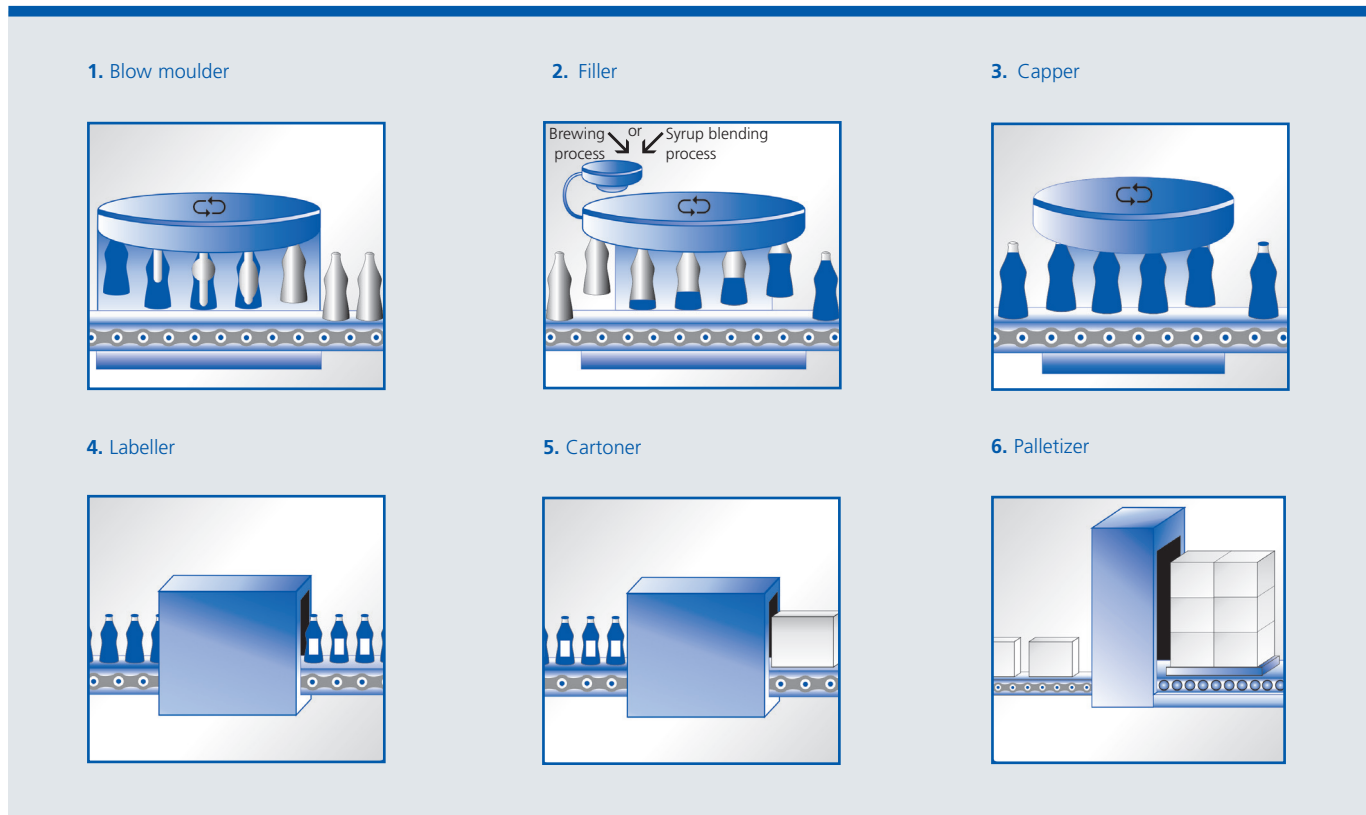
Kosher certified



Halal certified



Basic Process Chart



Overview of CASSIDA Products

Process Steps	Main Products	Common Machine Parts	Process Example
Preparation	CASSIDA GREASE EPS 2	Bearings	De-palletising
	CASSIDA FLUID HF 46 and 68	Hydraulics	
	CASSIDA FLUID VP 68 or 100	Vacuum pumps	
	CASSIDA FLUID GL or PAG Series	Gearboxes	
	CASSIDA CHAIN OIL Series	Chains	
Transportation	CASSIDA FLUID GL or PAG Series	Gearboxes	Conveyors
	CASSIDA GREASE EPS 2	Bearings	
	CASSIDA CHAIN OIL Series	Chains	
1. Blow moulding	CASSIDA FLUID GL or PAG Series	Gearboxes	Injection moulding
	CASSIDA FLUID HF Series	Hydraulics	
	CASSIDA FLUID CR Series	Air compressor	
	CASSIDA FLUID CRE 46	Air compressor	
	CASSIDA GREASE EPS 2	Central lubrication system	
	FM HEAT TRANSFER FLUID 32	Heating mandrels	

Process Steps	Main Products	Common Machine Parts	Process Example
2. Brewing (subprocess)	CASSIDA FLUID HF 100, GL or GLE 150	Pumps, mixers	Malting, brewhouse
	CASSIDA GREASE EPS 2	Bearings	Fermentation: Silo, boiler, separator, cooler, filter and storage tanks
	CASSIDA FLUID GL or PAG Series	Separators	
	CASSIDA FLUID HF 46 and 68	Filter presses	
	CASSIDA CHAIN OIL Series	Chains	
2. Soft drinks and other beverages (subprocess)	CASSIDA FLUID HF 100, GL or GLE 150	Gearboxes	Concentrate, sweetener, water treatment, syrup, blending, carbonation
	CASSIDA FLUID PAG 220 to 460	Worm gears	
	CASSIDA GREASE EPS 2	Bearings	
	CASSIDA FLUID HF 46 and 68	Hydraulics	
	CASSIDA CHAIN OIL Series	Chains	
2. Filling, seaming, capping, pasteurizing	CASSIDA FLUID GL or PAG Series	Gearboxes	Bottle/can rinsing
	CASSIDA GREASE EPS 2	Bearings	
	CASSIDA CHAIN OIL Series	Chains	
	CASSIDA GREASE RLS 1, 0, 00 or EPS 1, 0	Bearings	Can seaming
	CASSIDA FLUID GLE 150, 220	Gearboxes/drive chains	
	FM GEAR OIL TLS 150 / FM SEAMER OIL 150		Can seaming (Ferrum)
	CASSIDA FLUID CR 100	Central lubrication system	
	CASSIDA GREASE EP 2	Bearings	Can pasteurising
	CASSIDA CHAIN OIL Series	Chains	
	CASSIDA FLUID GL or PAG Series	Gearboxes	
3. Filling, seaming, capping, pasteurizing	CASSIDA GREASE EPS Series	Bearings	Bottle filling, capping
	CASSIDA FLUID GL 220 to 460	Gearboxes	
	CASSIDA GREASE MD 2	Taps, joints, gaskets	
4., 5., 6. Labelling, packing, storage	CASSIDA GREASE EPS 2 / FM GREASE CSC EP 2	Bearings	Labelling and packing, keg packing, cardboard packing
	CASSIDA GREASE RLS 000	Central lubrication system	
	CASSIDA FLUID GL or PAG Series	Gearboxes	
	CASSIDA CHAIN OIL Series	Drive chains	
	CASSIDA FLUID HF 46, 68, 100	Hydraulics	
	CASSIDA FLUID VP 68 or 100	Vacuum pump	Cold storage/refrigeration
	CASSIDA FLUID RF Series	Refrigeration compressors	
General maintenance	CASSIDA SILICONE FLUID SPRAY		
	FM KYSTALL		
	FM AIRLUBE AA		

FUCHS LUBRITECH – SPECIAL APPLICATION LUBRICANTS

The FUCHS Group has developed, produced, and sold lubricants and related specialties for more than 80 years – for virtually all applications and sectors. With over 100,000 customers and 50 companies worldwide, we are the world's leading independent lubricant supplier.

Within the FUCHS Group, FUCHS LUBRITECH is the expert for Special Application Lubricants. A team of more than 500 specialists around the world work to meet your needs. However demanding the application, we offer a specialized solution.

FUCHS LUBRITECH specialty lubricants stand for highest performance and sustainability, safety and reliability, and efficiency and cost savings. They represent a promise: technology that pays back.

CASSIDA

**Solutions for the
Animal Feed Industry**



LUBRICANTS.
TECHNOLOGY.
PEOPLE.



LUBRITECH
Special Application Lubricants

CASSIDA food grade lubricants – Solutions for the Animal Feed Industry



CASSIDA food grade lubricants

In the animal feed industry, the use of food-safe machine lubricants can mean the difference between a good name and no name at all. The production of food, beverages and related products puts the strictest requirements on the lubricants used in the manufacturing process.

Consumer protection is absolutely essential. Incidental oil contamination at any point in the process needs to be avoided by animal feed manufacturers, who process millions of pounds of animal feed for global markets every year. In addition, ensuring that the production process runs smoothly and is highly effective (meaning longer component lifetimes and extended maintenance intervals) is our number one priority.

Our customers benefit from the excellent quality of the CASSIDA portfolio, which has been confirmed by numerous OEM approvals given by well-known manufacturers of production and manufacturing equipment.

Today, major animal feed manufacturers are taking the risk out of their processes by switching to CASSIDA food grade lubricants as the safe alternative for all lubrication points in their production plants.

Our support package

As well as providing you with high-performance food grade lubricants, FUCHS LUBRITECH is able to offer expert technical advice and support. FUCHS LUBRITECH can assist with oil condition monitoring, failure analysis and diagnosis, Lubrication Critical Control Point (LCCP) surveys and much more.

Performance and safety

The CASSIDA range is NSF H1 registered, as well as being the first food grade lubricant range to receive ISO 21469 certification. Certified for Halal and Kosher production, the CASSIDA range provides a total solution for the animal feed industry.

NSF H1 registered
ISO certified



Nonfood Compounds
Program Listed
ISO 21469 certified

Kosher certified

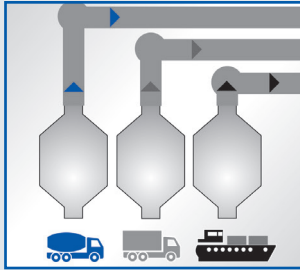


Halal certified

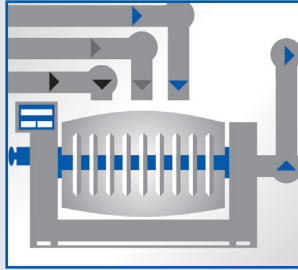


Basic Process Chart

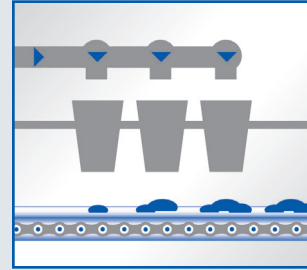
1. Delivery, receipt and storage of raw materials



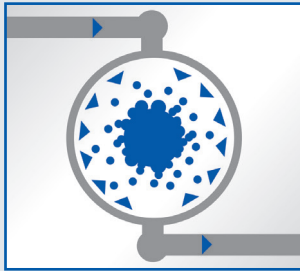
2. Milling



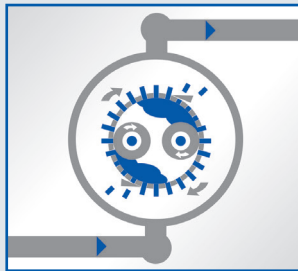
3. Dosing and premixing



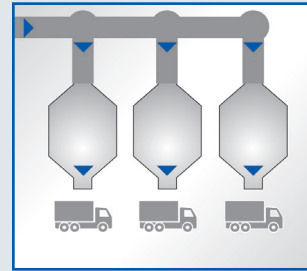
4. Preconditioning, compacting



5. Pressing, extruding, cooling, spraying



6. Filling and storage



Overview of CASSIDA Products

Process Steps	Main Products	Common Machine Parts	Process Example
1. Delivery, receipt, storage	CASSIDA FLUID GL	Gearboxes	Ingredients silo, pumping, transportation
	CASSIDA GREASE EPS / FM GREASE CSC EP Series	Bearings	
	CASSIDA FLUID CR Series	Compressors	
	CASSIDA FLUID CRE 46	Compressors	
	CASSIDA CHAIN OIL Series	Chains, conveyors	
2. Milling	CASSIDA FLUID GL Series	Gearboxes	
	FM GREASE CSC EP Series / FM GREASE HD Series	Bearings	
	CASSIDA GREASE EPS 1 / FM GREASE CSC EP 1	Central lube system	
	FM CHAIN OIL 100	Chains, conveyors	
3. Dosing, premixing	CASSIDA GREASE EPS / FM GREASE CSC EP Series	Bearings	Mixing
	FM CHAIN OIL 100	Chains	Transportation
4. Preconditioning, compacting	CASSIDA FLUID HF Series	Hydraulics	
	CASSIDA FLUID GL Series	Gearboxes	
	FM GREASE 2, FM GREASE HD Series	Bearings	
	FM CHAIN OIL 100	Chains	
5. Pressing, extruding, cooling, spraying	CASSIDA FLUID HF Series	Hydraulics	Pellet press or extruder Transportation Forming area, mould release
	FM GREASE 2, FM GREASE HD 2	Bearings	
	CASSIDA GREASE EPS 1 / FM GREASE CSC EP 1	Central lube system	
	CASSIDA FLUID GL Series	Gearboxes	
	FM CHAIN OIL 100	Chains, conveyors	
6. Filling and storage	CASSIDA FLUID VP 68 or 100	Vacuum pump	Wrapping
	CASSIDA FLUID HF / GL	Hydraulics, gearboxes	
	CASSIDA GREASE EPS 2	Bearings	
	CASSIDA FLUID CR Series	Compressors	
	CASSIDA FLUID CRE 46	Compressors	
	FM CHAIN OIL 100	Chains, conveyors	
General maintenance	CASSIDA SILICONE FLUID SPRAY		
	FM KRYSTALL		
	FM AIRLUBE AA		

FUCHS LUBRITECH – SPECIAL APPLICATION LUBRICANTS

The FUCHS Group has developed, produced and sold lubricants and related specialties for more than 80 years – for virtually all applications and sectors. With over 100,000 customers and 50 companies worldwide, we are the world's leading independent lubricant supplier.

Within the FUCHS Group, FUCHS LUBRITECH is the expert for special application lubricants. A team of more than 500 specialists around the world work to meet your needs. However demanding the application, we offer a specialised solution.

FUCHS LUBRITECH specialty lubricants stand for highest performance and sustainability, safety and reliability, and efficiency and cost savings. They represent a promise: technology that pays back.

CASSIDA

Solutions for the Bakery Industry



LUBRITECH
Special Application Lubricants

FUCHS LUBRITECH – SPECIAL APPLICATION LUBRICANTS

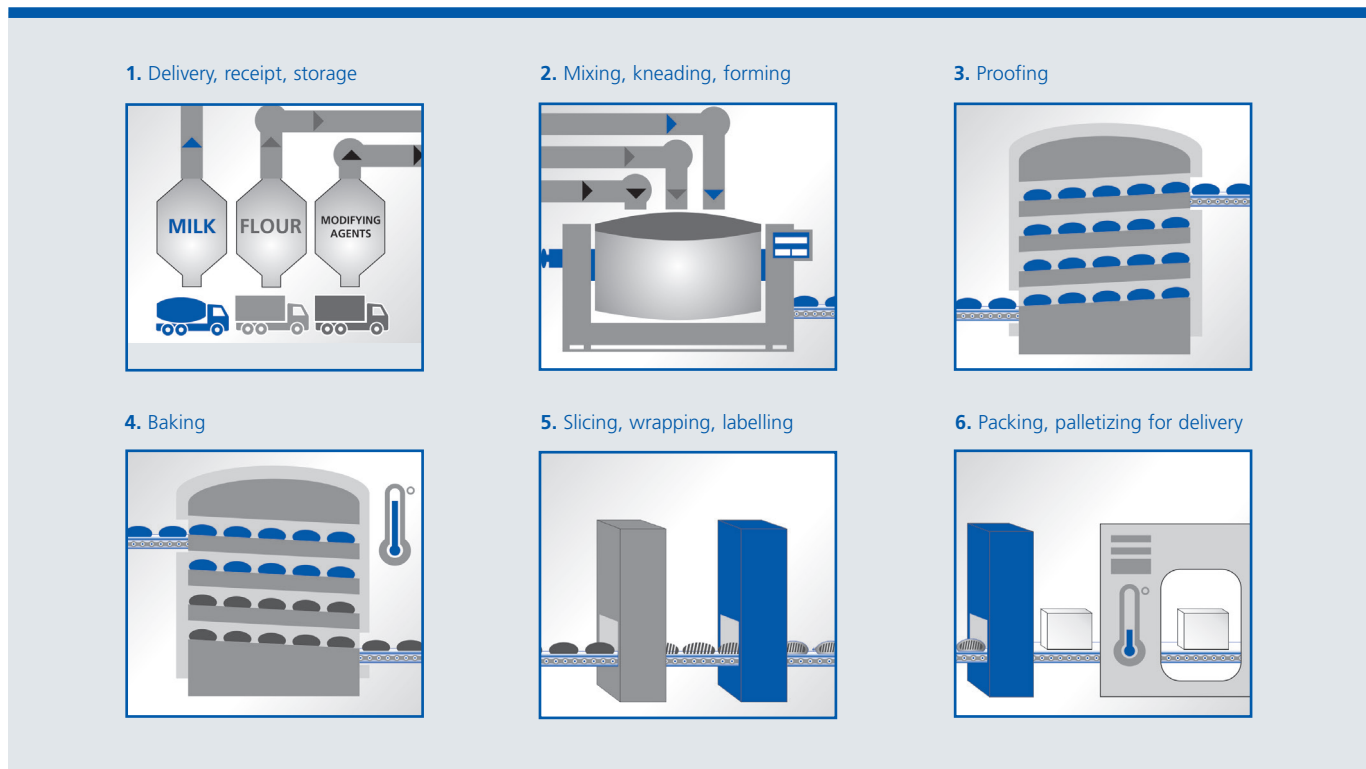
The FUCHS Group has developed, produced, and sold lubricants and related specialties for more than 80 years – for virtually all applications and sectors. With over 100,000 customers and 50 companies worldwide, we are the world's leading independent lubricant supplier.

Within the FUCHS Group, FUCHS LUBRITECH is the expert for Special Application Lubricants. A team of more than 500 specialists around the world work to meet your needs. However demanding the application, we offer a specialized solution. For the bakery industry we offer many benefits for even the most critical lubricating points:

- A complete selection of high-temperature chain lubes to best serve all types of bakery oven
- A long record of successful performance in bakery plants throughout the country
- A broad line of food grade lubricants for the entire plant
- Experienced technical support for on-site assessment and service.

FUCHS LUBRITECH specialty lubricants are synonymous with unsurpassed performance and sustainability, safety and reliability, and efficiency and cost savings. They represent a promise: technology that pays back.

Basic Process Chart



Overview of Products

Process Steps	Main Products	Process Example
Graphited oils for traveling earth tunnel oven chains	STABYLAN Bakoil 100	Fine graphite dispersion in odorless petroleum carrier.
	STABYLAN Bakoil 200	Premium flake graphite in odorless petroleum carrier.
Hot-applied oven chain lubricant	STABYLAN B 50	Unique, highly concentrated blend of self-lubricating solids in a synthetic carrier fluid. Safe and clean, nonflammable, odorless, no buildup, and doesn't increase VOCs. Best applied at 250 –350°F. Extends relube intervals to reduce usage and labor costs. Saves energy, protects better, and increases chain life.
	STABYLAN B 25	With fewer solids than STABYLAN B 50, best suited for occasional use in place of ordinary cold-applied products when production schedules dictate that lubricant must be applied while chain is hot.
Synthetic oil for conveyORIZED baking systems	STABYLAN 500 HT	Fully synthetic, ashless lubricating oil for exceptional high-temperature stability. For application by automatic systems to lubricate conveyor roller bearings in the oven section.
	STABYLAN CL 518	
	CASSIDA CHAIN OIL HT 220 (food grade)	
	CASSIDA CHAIN OIL 130/220 NA	
Food grade lubricants	FM CHAIN OIL 100	Food grade lubricant for use on chain drives or in the proofer section of conveyORIZED baking systems. Anti-drip formulation reduces consumption and minimizes fling-off.
	FM FLUID RO	Fully formulated lube oils, hydraulic fluids, and gearbox oils to provide industrial-grade performance that is safe for use with foods.
	FM HYDRAULIC OIL	
	FM GEAR OIL	
	FM GREASE AX/EP (NLGI grades 0, 1 or 2)	Food grade grease with aluminum complex formulation with high dropping point, superior water resistance, and exceptional anti-wear performance.
	CASSIDA GREASE HTS 2	Non-melting, synthetic food grade grease with inorganic thickener for use in or near ovens.
	FM AIR LUBE AA	Specialty food grade oil for airline lubrication.
	FM Sugar Dissolving Fluid	Sugar dissolving fluid, emulsifiable oil-based cleaning and rust-prevention concentrate.

CASSIDA Food Grade Lubricants



















Product Overview and Application Guide













LUBRITECH
Special Application Lubricants



Overview of CASSIDA Products

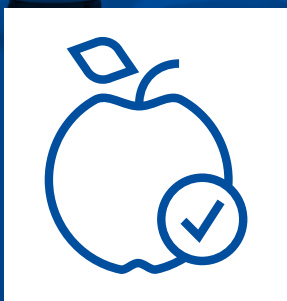
Application	Symbol	Product	Benefits
Bearings – rolling element Regular load		CASSIDA GREASE RLS Series	Multipurpose lubricant for regularly loaded bearings, good adhesive properties and water resistance
		FM GREASE 387	Good anti-corrosion properties and water resistance
		FM GREASE CLEAR Series	Clear / translucent
Bearings – rolling element Extreme pressure	 	CASSIDA GREASE EPS Series	Outstanding protection against wear and rust
		CASSIDA GREASE GTS 2	Calcium sulfonate complex multipurpose grease suitable for bearings under extreme conditions and/or high speed
		FM GREASE AX/EP Series	Outstanding protection against wear and rust
Bearings – rolling element Heavy duty	 	FM GREASE CSC EP Series	Excellent protection against wear and corrosion. Excellent water tolerance
		CASSIDA GREASE HDS 2	Protection for heavily loaded or slow-moving bearings with excellent water resistance
		CASSIDA GREASE GTX 2	Calcium sulfonate complex grease for heavily loaded or slow-moving bearings
Bearings – rolling element High temperature	 	FM GREASE 2	Protection for heavily loaded or slow-moving bearings with excellent water resistance
		CASSIDA GREASE HTS 2	High operating temperature, contains PTFE, operating temperature up to +392°F / 200°C (peak up to +428°F / 220°C)
		CASSIDA GREASE FC 1 & 2	Fully synthetic, high-performance, high-temperature greases for the fill-for-life lubrication of bearings and seals used in extreme temperatures and/or aggressive environments. Temperature range – 25°C to +260°C (-13°F to +500°F) , Short term peak +280°C (+536°F)
Bearings – rolling element Low temperature	 	CASSIDA GREASE LTS 1	Operating temperature down to –58°F / –50°C
Can seamer lubrication systems and gearboxes Can seamer lubrication system, Ferrum Can seamer lubrication systems, PS Angelus	 	CASSIDA FLUID GLE Series	Keeps machine clean and protects against wear and corrosion
		CASSIDA FLUID CR 100	Keeps machine clean and protects against wear and corrosion
		FM GEAR OIL TLS 150	White mineral oil fluid for enhanced performance for total loss systems
Can seamer roll head bearings (grease lubricated)	 	FM SEAMER OIL 150	White mineral oil fluid for enhanced performance for total loss systems
		CASSIDA GREASE RLS 1	Protects against wear and corrosion; good resistance to water washout
Chains and conveyors	 	CASSIDA CHAIN OIL Series	Fully synthetic PAO chain oil, outstanding adhesion to metal surfaces and excellent water resistance
		CASSIDA CHAIN OIL LT	Fully synthetic PAO chain oil, operating temperature down to –58°F / –50°C
		CASSIDA CHAIN OIL HT 220	Fully synthetic Ester, high-temperature chain oil for bakeries (up to +464°F / +240°C)
		CASSIDA CHAIN OIL PG 130 NA 220 NA	Fully synthetic PAG, high-temperature chain oil
		FM CHAIN OIL 100	Excellent adhesion, resists fling-off, and high water resistance
Compressors – rotary vane and screw		CASSIDA FLUID CR Series	Longer oil change intervals with less wear; does not add odor to compressed air
		CASSIDA FLUID CRE 46	Advanced synthetic compressor lubricant for food manufacturing machinery
Gears – enclosed Helical – spur Bevel – worm	 	CASSIDA FLUID GL Series	Excellent load-carrying properties for a wide range of applications
		CASSIDA FLUID PAG Series	Specialty worm gear oils, improved gear efficiency
		CASSIDA GREASE EPS 00	Excellent adhesive qualities – reduces leaks from gearbox
		CASSIDA GREASE SGG 000	Maximum performance – reduces leaks from gearbox
		FM GEAR OIL Series	Fully formulated gear oil

Application	Symbol	Product	Benefits
General-purpose machine oil		FM FLUID RO Series	Excellent corrosion prevention
Gears – open		CASSIDA GREASE HDS 00	Excellent adhesion and water resistance
Heat transfer		FM HEAT TRANSFER FLUID 32	Enhanced formulation. Excellent thermal stability, optimum fluid life
Hydraulics		CASSIDA FLUID HF Series	Long oil life, excellent filterability giving a cleaner system and longer equipment life
		FM HYDRAULIC OIL Series	Fully formulated hydraulic oil
Air-line lubrication		FM AIR LUBE AA	Air-line lubrication, designed to keep lines clean and free of condensate
Maintenance sprays: ▪ Silicone fluid ▪ General-purpose penetrating lubricant		CASSIDA SILICONE FLUID SPRAY	A quick-dry spray to give dry film lubrication on conveyor belts and light machinery
		FM KRYSTALL	Outstanding performance, enhanced bearing life
Refrigeration compressors – ammonia		CASSIDA FLUID RF Series	High-performance fluid, compatible with ammonia and other commonly used refrigeration gases
Slideways, linkages, and pins		CASSIDA GREASE HDS 2	Protection for heavily loaded or slow-moving bearings for long equipment life
		CASSIDA GREASE GTX 2	Calcium sulfonate complex grease – excellent corrosion protection
Vacuum pumps		CASSIDA FLUID VP Series	Extended oil drain intervals, good low-temperature characteristics, excellent anti-wear performance
Valves, taps and fittings		CASSIDA GREASE MD 2	Lubrication of all sorts of taps, flow meters and fittings with EPDM (ethylene-propylene-diene rubber) seals, used for the handling of water, drinks and beer, including drum-filling inflow valves; provides high resistance against chemicals

- Additional products for specialized applications available on request.

CASSIDA: Fully synthetic products | **CASSIDA FM:** Semi-synthetic or white mineral oil based products | Production facility certified by NSF for ISO 21469 | Components approved by the US FDA for incidental contact with food | Registered by NSF International as Class H1 | Meets former USDA H1 requirements | Certified for use in Kosher and Halal food-manufacturing processes

This table is a guide only. Contact FUCHS LUBRITECH to confirm product recommendations. This brochure was correct on the date of printing. Subject to change without notice.



Product Range

CASSIDA

Food Grade

Lubricants



LUBRICANTS.
TECHNOLOGY.
PEOPLE.



LUBRITECH
Special Application Lubricants

LUBRICANTS. TECHNOLOGY. PEOPLE.

**FUCHS LUBRITECH –
Special Application Lubricants**

We focus consistently on high-quality lubricants and related specialties. We develop innovative and holistic solutions for a wide variety of applications. We value the high level of commitment of our employees and their trusting interaction with one another.



LUBRITECH

Special Application Lubricants

Facts and figures

Company: FUCHS Lubricants Co., part of the FUCHS Group, based in Harvey, Illinois

LUBRITECH Division: the Special Application Division of the FUCHS Group

Product range: FUCHS LUBRITECH offers a full range of more than 1,000 special products, including food grade lubricants, adhesive lubricants, lubricating fluids and greases, pastes, solid film lubricants, concrete release agents, aerosols, and metal-forming lubricants

Certifications: ISO 9001: 2008, NSF ISO 21469, Halal, Kosher

FUCHS has developed, produced, and sold lubricants and related specialties for more than 80 years – for virtually all applications and sectors. With over 100,000 customers and 50 companies worldwide, the FUCHS Group is the world's leading independent lubricant supplier.

Within the FUCHS Group, **FUCHS LUBRITECH** is the expert for Special Application Lubricants. A team of more than 500 specialists around the world work to meet your needs. However demanding the application, we offer a specialized solution. Service is a crucial and fundamental component of our offering. Our experts offer on-site technical consultation to assure performance, efficiency, and process reliability.

FUCHS LUBRITECH special lubricants stand for highest performance and sustainability, safety and reliability, and efficiency and cost savings. They represent a promise: **technology that pays back.**



CASSIDA – Food Grade Lubricants

The CASSIDA line offers a comprehensive range of high-performance lubricants for the food and beverage industries, including fully synthetic as well as semi-synthetic and white-oil-based products. Each product's composition is always optimized to ensure maximum suitability for their respective application.

This product catalog introduces our product portfolio and gives an overview of the wide range of CASSIDA products, including CASSIDA Fluids (fully synthetic), CASSIDA Greases (fully synthetic), and FM Lubricants (white-oil-based and semi-synthetic).

The FUCHS LUBRITECH Food Division team or your local sales partner will be happy to assist you in finding the best products for your application. You will receive individual, competent advice and recommendations for products that are best suited for fulfilling your particular requirements.



CASSIDA

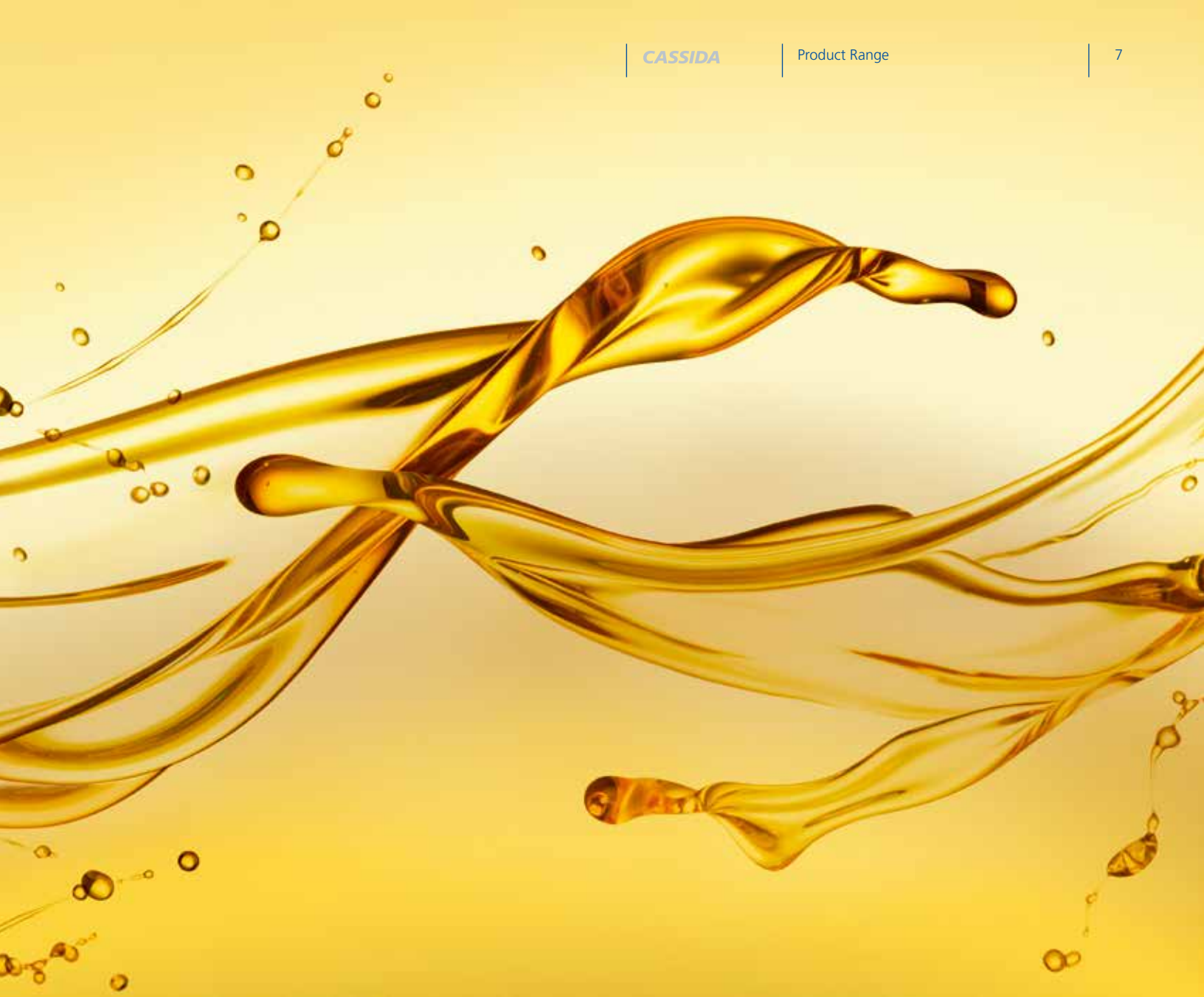
Contents

ABOUT *CASSIDA* 8-11

Industries Served	8
Highest Safety Standards	10

CASSIDA FLUIDS 12-17

Chain Oils	14
Compressor Fluids	15
Gear Fluids	15
Hydraulic Fluids	16
Maintenance Fluid	17
Vacuum Pump Fluid	17



Contents

CASSIDA GREASES **18-23**

Regular Load	20
Extreme Pressure	20
Heavy Duty	20
Specialties	21

FM RANGE **24-27**

Hydraulic Oils	26
Gear Oils	26
Chain Oil	27
Specialties	27
Greases	29

Industries Served by CASSIDA Food Grade Lubricants



Beverage and brewing industry

The production of food, beverages and related products puts the strictest requirements on the lubricants used in the manufacturing process. Consumer protection is absolutely essential. Incidental oil contamination during the bottling and canning process must be avoided by breweries and beverage manufacturers, who brew, mix, can and bottle millions of gallons of beverages for global markets every year.



Meat and poultry industry

Millions of pounds of meat and poultry are processed every year. Just as in all other food industries, the safety of the production process is crucial. CASSIDA food grade lubricants support this safety. In addition, ensuring that the production process runs smoothly and is highly effective (meaning longer component lifetimes and extended maintenance intervals) is our number one priority.



Dairy industry

Customers from the dairy industry as well as the other food-related industries benefit from the excellent quality of the CASSIDA portfolio, which has been confirmed by numerous OEM approvals given by well-known manufacturers of production and manufacturing equipment. This assures that the highest demands of the industry are met.



Bakery and confectionery industry

With the high temperatures required by the bakery and confectionery industry, high heat resistance and stability of the lubricant is crucial. FUCHS LUBRITECH's research into extreme applications ensures that CASSIDA food grade lubricants perform at the highest level to allow for safe and reliable production and manufacturing processes.



Animal feed industry

Only safe feed will allow safe food to be produced. CASSIDA food grade lubricants provide this safety to the producers of animal feed. The products comply with the vast variety of feed requirements for livestock and other animals – from dairy cows and poultry to pets and fish.



Edible oil processing industry

In modern cuisine and with changing eating habits, edible oil, such as olive oil, sunflower oil and rapeseed oil, play an integral role in our diets. With CASSIDA food grade lubricants, FUCHS LUBRITECH offers a wide choice of lubricating fluids and greases for safe and efficient lubrication of the production processes.

Serving the Highest Safety Standards of the Food and Beverage Industry

Our product portfolio – at a glance

Lubricants for the production, processing, and packaging of food, beverages, medications, and cosmetic products must fulfill stringent requirements. Consumer protection is crucial, which is why FUCHS LUBRITECH practices the highest safety standards in all aspects of development, production, sales, and after-sales service.

FUCHS LUBRITECH products outperform many of the industrial non-food-grade lubricants on the market, while conforming to US FDA regulations. They are formulated with the most advanced rust and oxidation, anti-wear, and extreme-pressure additives available, all of which provide the maximum level of protection for your expensive food processing equipment.

FUCHS LUBRITECH customers benefit from the excellent quality of the CASSIDA product line, which has OEM approvals from well-known manufacturers of production and manufacturing equipment.

Safety, our number one priority

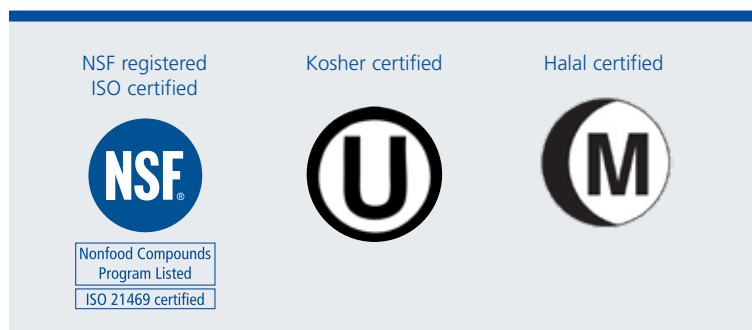
Our manufacturing plants in Kansas City, KS, and Kaiserslautern, Germany, as well as the food grade lubricants produced there, are certified in accordance with the international standard ISO 21469. This standard determines the hygienic requirements for the composition, manufacturing, and use of lubricants that may have incidental contact with food products – assuring that our products fulfill the highest possible safety standard. Additionally, our CASSIDA products fulfill the strict requirements of both Jewish and Muslim laws and regulations. The respective Kosher and Halal certificates guarantee the highest possible level of product and food safety.

Our most important product: individual consulting and service

We set standards not only with our high-performance products, but also with our exceptional service! This includes providing advice on how to optimize the use of food grade lubricants taking into account stringent QA management procedures in order to avoid food contamination (in accordance with HACCP = Hazard Analysis and Critical Control Points), examination of used lubricants, development of lubrication and maintenance schedules, support in changing lubricants, active support for practical testing, careful documentation of all measures, and much more.

Finding comprehensive, sustainable, and safe solutions for all tribological issues arising from our customers' requirements and their applications is our declared goal. Customer seminars and training sessions held globally complete our service program.

With its competent technical advice and widespread sales network, our global Food Division team supports you in your production and processing activities to ensure that you will always achieve optimal results.



Guide to Symbols



Roller bearings



Plain bearings



Flushing



High temperature



Low temperature

Can seamers
and sterilisers

Chains



Conveyors



Gears – open



Gears – enclosed



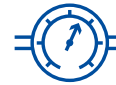
Extreme pressure



Industrial coolants



Heat transfer



Hydraulics

Valves, taps
and fittings

Compressors



Direct food contact



Sugar dissolving



Vacuum pumps



Maintenance spray



Slideways

Mounting/assembling/
disassembling aid

Maintenance aid



Worm gears



Linkages, pins



Anti-corrosive



NSF registered



CASSIDA FLUIDS

CASSIDA lubricating fluids based on fully synthetic base oils are developed to meet related industry specifications and to fulfill the stringent guidelines governing food-compatible lubricants. The high-performance lubricating fluids of the CASSIDA range enable the efficient operation of demanding manufacturing processes, a higher degree of utilization of machines, and a reduction in maintenance costs. They are used in various branches of the food and beverage industry.

FUCHS LUBRITECH's extensive range of food grade lubricating fluids offers the user a wide choice of CASSIDA-branded products for lifetime and total loss lubrication.

In addition to mineral-oil-based fluids, a very diverse selection of synthetic lubricating fluids are available for a wide range of applications in the food and beverage industry.


These high-performance lubricating fluids enable the efficient operation of demanding production and manufacturing processes, a higher degree of utilization of machines, and a reduction in maintenance.

FUCHS LUBRITECH researches constantly to increase performance and offer optimum lubricating fluids for maximum safety in food grade applications.

Chain oils	CASSIDA CHAIN OIL 150 1500 SPRAY	14
	CASSIDA CHAIN OIL LT	14
	CASSIDA CHAIN OIL HT 220	14
	CASSIDA CHAIN OIL PG 130 NA 220 NA	14
Compressor fluids	CASSIDA FLUID CR 46 100	15
	CASSIDA FLUID CRE 46	15
	CASSIDA FLUID RF 68	15
Gear fluids	CASSIDA FLUID GL 150 220 320 460 680	15
	CASSIDA FLUID GLE 150 220	16
	CASSIDA FLUID PAG 220 460 680	16
Hydraulic fluids	CASSIDA FLUID HF 15 32 46 68 100	16
Maintenance fluid	CASSIDA SILICONE FLUID SPRAY	17
Vacuum pump fluid	CASSIDA FLUID VP 100	17

CHAIN OILS


CASSIDA CHAIN OIL 150 | 1500 Spray

		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
Fully synthetic, very high-performance chain oils. Highly resistant to fling-off or wash-off. Excellent protection against wear and corrosion.	CASSIDA CHAIN OIL 150	150	19
	CASSIDA CHAIN OIL 1500 Spray	1500	135*

Main application: Lubrication of drive and transport chains in the food industry. Can be applied by brush, bath, automatic lubrication systems, or spraying.


* after evaporation of solvent

CASSIDA CHAIN OIL LT

		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
Fully synthetic, high-performance anti-wear chain oil suitable for a wide range of temperatures, including sub-zero conditions.	CASSIDA CHAIN OIL LT	32	6.5


Main application: Transport mechanisms inside food freezers such as spiral freezers. Lubrication of metal-metal and metal-ceramic contact points in open machinery, such as slideways and chains. Plain and anti-friction bearings.

CASSIDA CHAIN OIL HT 220

		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
Fully synthetic, ester-based, high-temperature chain lubricant suitable for temperatures of up to 464°F (240°C).	CASSIDA CHAIN OIL HT 220	220	20

Main application: Drive and transport chains in the food industry. Also intended for use in equipment for manufacturing food packaging.


CASSIDA CHAIN OIL PG 130 NA | 220 NA

		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
Fully synthetic, high-performance chain oils.	CASSIDA CHAIN OIL PG 130 NA	130	22
	CASSIDA CHAIN OIL PG 220 NA	220	33


Main application: High temperature drive and transport chain in food industry. Circulation systems, bearings, way oils, and powder metal bearings.

COMPRESSOR FLUIDS


CASSIDA FLUID CR 46 | 100

		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
Fully synthetic, very high-performance, long-life compressor oils. Meet DIN 51524 HLP and ISO 6743-3A. Main application: Oil-flooded rotary vane and screw air compressors in food processing plants.	CASSIDA FLUID CR 46	46	8.0
	CASSIDA FLUID CR 100	100	14

CASSIDA FLUID CRE 46


		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
Advanced synthetic compressor lubricant for food manufacturing machinery. Main application: Rotary screw compressor, vacuum pumps, and circulating systems.	CASSIDA CRE 46	42	7.3

CASSIDA FLUID RF 68

		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
Fully synthetic lubricants for refrigeration compressors used in the food industry. Main application: Recommended for use in open and semi-open compressors, both screw and reciprocating types. Designed for applications with ammonia (R717), offering excellent performance under high and low evaporation temperatures. Can also be used with halogenated hydrocarbons (R22) and isobutane (R600a).	CASSIDA FLUID RF 68	68	9.7





GEAR FLUIDS

CASSIDA FLUID GL 150 | 220 | 320 | 460 | 680




		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
Fully synthetic, very high-performance, long-life, anti-wear gear oils. Meet DIN 51517 CLP and ISO 6743/6 specifications. Main application: Suitable for gearboxes on food handling and processing equipment. Can also be used for general machine lubrication, e.g. chains.	CASSIDA FLUID GL 150	150	19
	CASSIDA FLUID GL 220	220	25
	CASSIDA FLUID GL 320	320	33
	CASSIDA FLUID GL 460	460	44
	CASSIDA FLUID GL 680	680	59

GEAR FLUIDS

CASSIDA FLUID GLE 150 | 220




   		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
Fully synthetic, high-performance, anti-wear gear fluids for use in the food canning industry. Provide excellent lubrication, even when operating in locations where the product may be subject to contamination with water, juice, and food. CASSIDA FLUID GLE holds these contaminants in suspension, thus protecting metal surfaces from wear and corrosion. Approved by Angelus Sanitary Can Seaming Company for can seamer lubrication.	CASSIDA FLUID GLE 150	150	19
	CASSIDA FLUID GLE 220	220	25
Main application: Lubrication of rotary can seaming machines, including both enclosed and total loss systems, and for circulating and bearing oil systems where contamination with water or food juices can occur.			

CASSIDA FLUID PAG 220 | 460 | 680

  		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
Fully synthetic, high-performance gear lubricants for worm gearboxes. High resistance to micro-pitting. Provide exceptional thermal stability and corrosion protection. Exceptional low-friction characteristics providing efficient power transmission.	CASSIDA FLUID PAG 220	220	42
	CASSIDA FLUID PAG 460	460	83
	CASSIDA FLUID PAG 680	680	122
Main application: For the lubrication of worm gearboxes in food processing plants. Ideal for all worm gear applications. Suitable for use in situations where equipment is routinely cleaned before and after use and where water might enter the lubricant.			

HYDRAULIC FLUIDS

CASSIDA FLUID HF 15 | 32 | 46 | 68 | 100

  		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
Fully synthetic, high-performance, long-life, anti-wear hydraulic oils. Meets ISO 6743/4 HM, DIN 51524 HLP, HVLP, and DIN 51517 CLP (ISO 68 and ISO 100) specifications.	CASSIDA FLUID HF 15	15	3.6
	CASSIDA FLUID HF 32	32	6
	CASSIDA FLUID HF 46	46	8
	CASSIDA FLUID HF 68	68	11
	CASSIDA FLUID HF 100	100	14
Main application: Hydraulic systems, hydrostatic gears and control systems, plain and anti-friction bearings on food handling and processing equipment.			

MAINTENANCE FLUID

CASSIDA SILICONE FLUID Spray



Silicone-based, fully synthetic, multipurpose fluid. Thermal stability up to 484°F (250°C). Excellent adhesive properties minimize fling-off in use and wash-off by both cold and hot water. Readily displaces water. Formulated for use on metal-non-metal or non-metal-non-metal contact surfaces.

Main application: For lubrication of conveyors; slow rotating machinery; small, slow-speed bearings and pivot points found in equipment in the food industry.

CASSIDA SILICONE FLUID Spray

Typical Viscosity at
40°C [mm²/s]

1000*

Typical Viscosity at
100°C [mm²/s]

730*

*without propellant

VACUUM PUMP FLUID

CASSIDA FLUID VP 100



Fully synthetic, high-performance vacuum pump oil.

CASSIDA FLUID VP 100

Typical Viscosity at
40°C [mm²/s]

100

Typical Viscosity at
100°C [mm²/s]

14

Main application: Vacuum pumps producing a medium vacuum, used in the food and beverage processing and packing industry.





CASSIDA GREASES

CASSIDA greases are fully based on synthetics and fulfill the same technical requirements as non-food grade lubricants – i.e. to reduce friction and wear or to protect against corrosion. For the food and beverage industry they support maximum food safety. With our range of CASSIDA greases we cover all of the applications where there is potential for incidental food contact – as found in various branches of the food and beverage industry.

Included in the CASSIDA range of greases are direct contact lubricants which are both NSF H1 and also 3H registered for safety. This means the lubricants are acceptable for incidental contact with food as well as for use as release agents on hard surfaces which are in direct contact with meat and poultry.

Our CASSIDA GREASE EPS range of lubricants has been developed to provide high performance and wear protection for machinery operating at high pressures and loads.

At slower speeds, high pressures, and high loads, a heavy-duty grease is required which helps protect machinery. We provide CASSIDA greases that are specifically designed for heavy-loaded and shock-loaded applications.


Other product series include highly water-resistant greases, assembly pastes, and low-temperature greases.

Overview of CASSIDA Greases

Regular load	CASSIDA GREASE RLS 00 0 1 2	20
Extreme pressure	CASSIDA GREASE EPS 00 0 1 2	20
Heavy duty	CASSIDA GREASE HDS 00 2	20
Specialties	CASSIDA GREASE GTS 2	21
	CASSIDA GREASE GTX 2	21
	CASSIDA GREASE HTS 2	21
	CASSIDA GREASE LTS 1	21
	CASSIDA GREASE MD 2	22
	CASSIDA GREASE SGG 000	22
	CASSIDA GREASE FC 1 2	22
	CASSIDA FM GREASE 930-2	23


REGULAR LOAD

CASSIDA GREASE RLS 00 | 0 | 1 | 2

		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
<p>High-performance, regular-load aluminum complex greases with synthetic base fluid.</p> <p>Main application: For use on bearings, bushings, and linkages on food manufacturing equipment. CASSIDA GREASE RLS 0 and 00 are particularly recommended for centralized lube systems or other similar systems where an NLGI 2 grease may be difficult to dispense.</p>	CASSIDA GREASE RLS 00	100	13	00
	CASSIDA GREASE RLS 0	150	18	0
	CASSIDA GREASE RLS 1	150	18	1
	CASSIDA GREASE RLS 2	150	18	1


EXTREME PRESSURE

CASSIDA GREASE EPS 00 | 0 | 1 | 2

		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
<p>High-performance, extreme-pressure aluminum complex greases with synthetic base fluid.</p> <p>Main application: For use on bearings, bushings, and linkages on food manufacturing equipment, particularly where high pressure and loads, high temperatures, and water spray occur. CASSIDA GREASE EPS 00 is especially recommended for centralized lube systems and enclosed gears.</p>	CASSIDA GREASE EPS 00	220	25	00
	CASSIDA GREASE EPS 0	220	25	0
	CASSIDA GREASE EPS 1	220	25	1
	CASSIDA GREASE EPS 2	220	25	1





HEAVY DUTY

CASSIDA GREASE HDS 00 | 2







		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
<p>High-performance, high-viscosity heavy-duty aluminum complex greases with synthetic base fluid.</p> <p>Main application: For use on bearings, bushings, and linkages on food manufacturing equipment, particularly where slower speeds, high pressure and loads, high temperatures, and water spray are present. CASSIDA GREASE HDS 00 is recommended for open gears and centralized lube systems.</p>	CASSIDA GREASE HDS 00	800	68	00
	CASSIDA GREASE HDS 2	800	68	2

SPECIALTIES





CASSIDA GREASE GTS 2

   		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
<p>Specialty extreme-pressure calcium sulfonate complex greases with synthetic base fluid. Excellent extreme pressure, anti-wear, and corrosion prevention properties.</p> <p>Main application: For use on bearings of electric motors, pumps, conveyors, mixers, gear units, and medium- to high-speed bearings operating at up to 340 °F (170°C).</p>	CASSIDA GREASE GTS 2	50	8.6	2





CASSIDA GREASE GTX 2

     		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
<p>High-performance, extreme-pressure calcium sulfonate complex grease with synthetic base fluid. Excellent extreme pressure, anti-wear, and corrosion prevention properties.</p> <p>Main application: For use on bearings of electric motors, pumps, conveyors, mixers, gear units, and bearings. Heavy-loaded and shock-loaded applications with low- to medium-speed bearings operating at up to 360°F (180°C), such as machines used to process pet food and animal feed.</p>	CASSIDA GREASE GTX 2	400	40	2

CASSIDA GREASE HTS 2


   		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
<p>Inorganically thickened grease with synthetic base fluid and PTFE</p> <p>Main application: Suitable for high-temperature applications up to 392°F (200°C). Short term peak of 428°F (+220°C)</p>	CASSIDA GREASE HTS 2	400	40	2

CASSIDA GREASE LTS 1


   		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
<p>High-performance aluminum complex grease with low- viscosity synthetic base fluid.</p> <p>Main application: For use on bearings, bushings, and linkages on food manufacturing equipment. Particularly recommended for use in cold storage situations with temperatures down to -58°F (-50°C).</p>	CASSIDA GREASE LTS 1	20	4.5	1

SPECIALTIES


CASSIDA GREASE MD 2

		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
High-performance, silicone-based specialty grease specially developed for the lubrication and sealing of taps, valves, and fittings with EPDM seals. Suitable for use with other seal materials normally used in food machinery lubrication systems. Good resistance to hot water, steam, and disinfectant solutions.	CASSIDA GREASE MD 2	650	250	2-3
Main application: Taps, flow meters, and fittings used for the handling of water, drinks, and beer. Seals on autoclaves and sterilizers. Suitable for continuous operation at temperatures of up to 365°F (180°C) and short-term exposure to temperatures not exceeding 480°F (250°C).				

CASSIDA GREASE SGG 000

		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
High-performance, aluminum complex grease with synthetic base fluid.	CASSIDA GREASE SGG 000	460	46	000
Main application: For use in gearboxes where fill-for-life lubrication is required. CASSIDA GREASE SGG 000 is also recommended for centralized lube systems that call for fluid grease with a heavy base oil viscosity and maximum performance.				

CASSIDA GREASE FC 1 | 2

		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
Fully synthetic, high-performance, high-temperature greases for the fill-for-life lubrication of bearings and seals used in extreme temperatures and/or aggressive environments. Effective anti-corrosion prevention characteristics. Excellent elastomer compatibility. Suitable for applications where components might be exposed to reactive chemicals and gases; chemically inert or non-reactive in the event of contact with strong acids, alkalis, and halogens.	CASSIDA GREASE FC 1	510	47	1
	CASSIDA GREASE FC 2	510	47	2
Main application: Plain/roller-bearing elements, joints, micro-bearings, precision tools, linkages, and mechanical seals. Suitable for continuous operation at temperatures of up to 500°F (260°C) and short-term exposure to temperatures not exceeding 572°F (300°C).				

SPECIALTIES

CASSIDA FM GREASE 930-2



High-temperature extreme pressure lubricating grease.

CASSIDA FM GREASE 930-2

Typical Viscosity at
40°C [mm²/s]

130

Typical Viscosity at
100°C [mm²/s]

2

Main application: Designed for a multitude of general plant lubrication requirements including plain or anti friction bearings, slides, cam tracks, lead pins, chucks and bearings.





CASSIDA FM RANGE




The FM Series of the CASSIDA product portfolio are white-oil-based or semi-synthetic-based food grade lubricating fluids and greases. They are used in similar applications as the CASSIDA products. Especially in cases of total loss lubrication FM lubricants are preferred – as found for example in the animal feed and beverage industry.

Overview of FM Range

Hydraulic oils	FM HYDRAULIC OIL 32 46 68 100	26
Gear oils	FM GEAR OIL TLS 150	26
	FM SEAMER OIL 150	26
	FM GEAR OIL 150 220 460 680	26
Chain oil	FM CHAIN OIL 100	27
Specialties	FM FLUID RC 150 220	27
	FM FLUID RO 15 32 46 68 100	27
	FM COOLANT	28
	FM HEAT TRANSFER FLUID 32	28
	FM KRYSTALL	28
	FM AIR LUBE AA	29
	FM SUGAR DISSOLVING FLUID	29
Greases	FM GREASE CLEAR 1 2	29
	FM GREASE AX/EP 0 1 2	30
	FM GREASE CSC EP 1 2	30
	FM GREASE 387	30
	FM GREASE 2	31
	FM GREASE HD 2	31






HYDRAULIC OILS

FM HYDRAULIC OIL 32 | 46 | 68 | 100






  		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
<p>Hydraulic fluids for food and beverage processing equipment.</p> <p>Main application: Hydraulic systems, hydrostatic gears and control systems, plain and anti-friction bearings on food handling and processing equipment.</p>	FM HYDRAULIC OIL 32	32	6
	FM HYDRAULIC OIL 46	46	7
	FM HYDRAULIC OIL 68	68	9
	FM HYDRAULIC OIL 100	100	11.6

GEAR OILS


FM GEAR OIL TLS 150

<div></div>		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
<p>Specialty anti-wear gear lubricant specifically designed for use in the food and beverage canning industry. Provides good lubrication even when operating in locations where it is subject to contamination with water, juice, and food. Holds these contaminants in suspension, thus protecting metal surfaces from wear and corrosion. Only to be used for total loss systems.</p> <p>Main application: Suitable for can seamer gearboxes on food handling and processing equipment. Can also be used for general machine lubrication.</p>	FM GEAR OIL TLS 150	150	15

FM SEAMER OIL 150




<div></div>		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
A food-grade lubricant designed for use in seaming equipment where incidental food contact may occur. Only to be used for total loss systems.	FM SEAMER OIL 150	150	15
Main application: Suitable for can seamer gearboxes on food handling and processing equipment. Can also be used for general machine lubrication.			

FM GEAR OIL 150 | 220 | 460 | 680

		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
<p>Gear lubricant for food and beverage processing equipment</p> <p>Main application: Suitable for gearboxes on food handling and processing equipment. Can also be used for general machine lubrication or as flushing fluid.</p>	FM GEAR OIL 150	150	16
	FM GEAR OIL 220	220	22
	FM GEAR OIL 460	460	38
	FM GEAR OIL 680	680	52



CHAIN OIL

FM CHAIN OIL 100





  		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
White oil, adhesive, anti-wear chain oil. Minimizes fling- off in use and wash-off by both cold and hot water.	FM CHAIN OIL 100	100	14
Main application: Drive and transport chains in the food industry. Also intended for use in equipment manufacturing and food packaging.			

SPECIALTIES

FM FLUID RC 150 | 220




 		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
Special high-performance fluids specially developed for use in rotary cooking equipment in food and beverage canning plants. Provide good lubrication even when operating in locations where they are subject to contamination with water.	FM FLUID RC 150	150	15.5
	FM FLUID RC 220	220	20.4
Main application: For use in the centralized systems of rotary cookers and sterilizers which lubricate the can exchange valves and other moving components.			

FM FLUID RO 15 | 32 | 46 | 68 | 100




   		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
<p>General-purpose machine oils with high-quality rust and oxidation inhibitors for long-term service.</p> <p>Main application: Bearings, slides, chains, circulating systems.</p>	FM FLUID RO 15	15	3.3
	FM FLUID RO 32	32	6
	FM FLUID RO 46	46	7.1
	FM FLUID RO 68	68	9
	FM FLUID RO 100	100	14

SPECIALTIES




FM COOLANT

  		Typical Viscosity at 40°C [mm ² /s]	Typical Viscosity at 100°C [mm ² /s]
<p>Propylene-glycol-based fluid containing anti-corrosion additives, for use in closed systems to chill, cool, or heat food or beverages in food industry applications. Designed to be used in mixtures with potable water. Suitable for operation in the range of –49°F (–45°C) to 250°F (120°C).</p> <p>Main application: Secondary cooling, or heating, in the food and beverage industry. For use in closed cooling systems, including those where there is a potential for incidental food contact. Not to be used for applications where there is direct contact between food and the coolant.</p>	FM COOLANT	47	17

FM HEAT TRANSFER FLUID 32



  		Typical Viscosity at 40°C [mm ² /s]	Typical Viscosity at 100°C [mm ² /s]
<p>High-performance heat transfer fluid. Can handle a wide range of application temperatures and has excellent thermal and oxidative stability to minimize cracking and promote long service life.</p> <p>Main application: For closed-circuit and pressureless heat transfer systems with a bulk oil temperature range of ~14°F (–10°C) to max. ~620°F (325°C) where the surface temperature of the heating elements (oil film temperature) should not exceed ~645°F (340°C).</p>	FM HEAT TRANSFER FLUID 32	35	6

FM KRYSTALL



  		Typical Viscosity at 40°C [mm ² /s]	Typical Viscosity at 100°C [mm ² /s]
<p>Food-grade penetrating and flushing oil with rust-inhibiting and lubricating properties.</p> <p>Main application: Cleans and lubricates conveyor surfaces, processing tables, and packaging machines; flushing agent for bearings, gearboxes, and hydraulic systems; release agent for cutting blades, punches, and dies; protects parts against corrosion.</p>	FM KRYSTALL	4.5	1.6

SPECIALTIES

FM AIR LUBE AA



 		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
Special food-grade oil for air-line lubrication. Formulated with proprietary package of emulsifiers, detergents, and dispersants.	FM AIR LUBE AA	18	3.8
Main application: Rolling element and plain bearings. Heavy-loaded and shock-loaded applications. Joints, linkages, and slides. Lubricates pneumatic actuators and lifters, air motors, and air tools.			

FM SUGAR DISSOLVING FLUID

 		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]
Emulsifiable oil-based cleaning and rust-inhibiting concentrate. Designed to be used in mixtures with potable water on machine surfaces in the food and sugar manufacturing industry.	FM SUGAR DISSOLVING FLUID	100	11
Main application: For cleaning and flushing sugar or sugar-based deposits from food and beverage manufacturing equipment. For freeing moving parts or screws and bolts that are stuck with sugar deposits. For lubrication of lightly loaded bearings and slideways, especially where sugar deposits are likely to form.			




GREASES

FM GREASE CLEAR 1 | 2







 		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
High-performance, regular-load aluminum complex grease.	FM GREASE CLEAR 1	100	11	1
	FM GREASE CLEAR 2	100	11	2
Main application: Rolling element and plain bearings. Joints and linkages open to the atmosphere. Automatic, centralized lubrication systems.				

GREASES




FM GREASE AX/EP 0 | 1 | 2

  		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
High-performance, regular-load aluminum complex grease. Main application: Rolling element and plain bearings. Joints and linkages open to the atmosphere. Automatic, centralized lubrication systems.	FM GREASE AX/EP 0	180	20	0
	FM GREASE AX/EP 1	180	20	1
	FM GREASE AX/EP 2	180	20	2

FM GREASE CSC EP 1 | 2





     		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
High-performance, extreme-pressure calcium sulfonate complex grease. Main application: Multipurpose versatile grease. Plain and rolling element bearings. Joints, linkages, and slides. Electric motor bearings. Suitable for many grease-lubricated machinery canneries, beverage bottlers and canners, potato/corn chip processors, candy manufacturers, meat and poultry packers, frozen food processors, and other food producers and processors.	FM GREASE CSC 1	100	11	1
	FM GREASE CSC 2	100	11	2

FM GREASE 387





  		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
High-performance multipurpose grease with calcium thickener. Good water resistance, resists emulsification with water. Main application: Plain and rolling element bearings especially in wet environments. Also for slides, cams, and open gears.	FM GREASE 387	68	10	2

GREASES

FM GREASE 2

   		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
Multipurpose heavy-duty aluminum complex grease. Adhesive and resists water washout.	FM GREASE 2	570	46	2
Main application: Rolling element and plain bearings. Heavy-loaded and shock-loaded applications for example pellet mills. Joints, linkages, and slides.				

FM GREASE HD 2

   		Typical Viscosity at 40°C [mm²/s]	Typical Viscosity at 100°C [mm²/s]	NLGI-Grade
Modified aluminum complex heavy-duty, extreme-pressure grease.	FM GREASE HD 2	550	38	2
Main application: For use on slow-to-medium-speed plain and rolling element bearings in heavy-loaded and shock-loaded applications. Recommended for use in machinery requiring frequent changes of the grease charge or with a high product consumption rate, such as machines used to process pet food and animal feed.				

The information contained in this product information is based on the experience and know-how of FUCHS LUBRITECH Co. in the development and manufacturing of lubricants and represents the current state of the art. The performance of our products can be influenced by a series of factors, especially the specific use, the method of application, the operational environment, component pretreatment, possible external contamination, etc. For this reason, universally valid statements about the function of our products are not possible. The information given in this product information represents general, non-binding guidelines. No warranty expressed or implied is given concerning the properties of the product or its suitability for any given application.

We therefore recommend that you consult a FUCHS LUBRITECH Co. application engineer to discuss application conditions and the performance criteria of the products before the product is used. It is the responsibility of the user to test the functional suitability of the product and to use it with the corresponding care.

Our products undergo continuous improvement. We therefore retain the right to change our product range, the products, and their manufacturing processes as well as all details of our product information sheets at any time and without warning. With the publication of this product information, all previous editions cease to be valid.

Any form of reproduction requires express prior written permission from FUCHS LUBRITECH Co.

© FUCHS LUBRITECH Co. All rights reserved.