

FUCHS Industrial Lubricants

Innovative process media need experienced application engineers

Every lubricant change should be preceded by expert consultation on the application in question. Then the best process media system can be selected. Experienced FUCHS engineers will be glad to advise on products for the application in question and also on our full range of lubricants.



Contact:

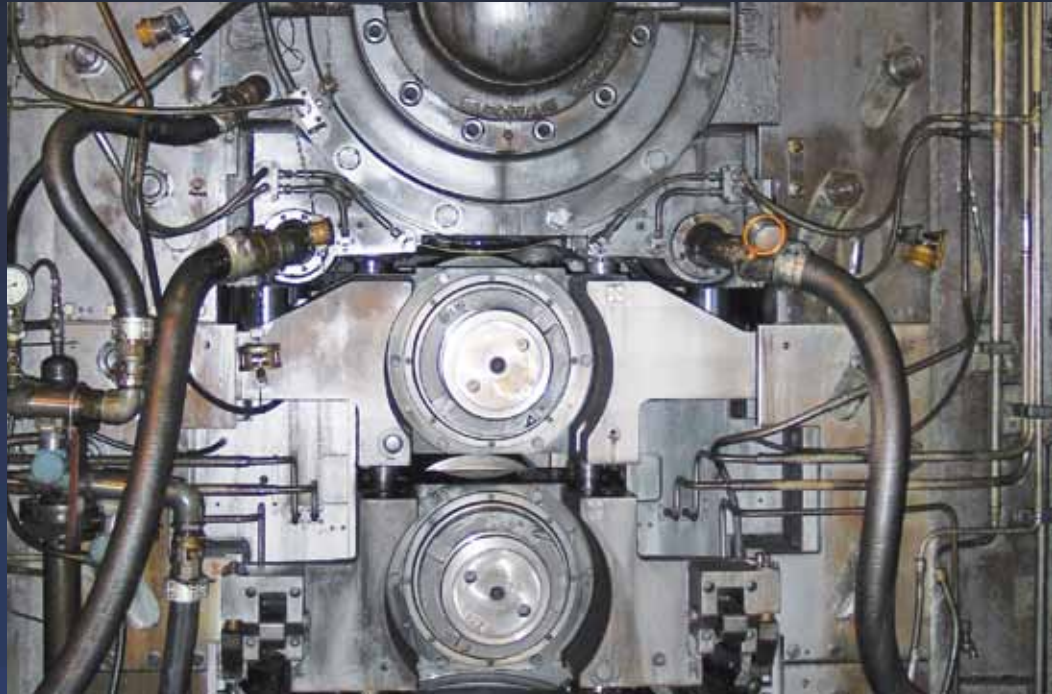


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FUCHS Industrial Lubricants

For ultimate process reliability

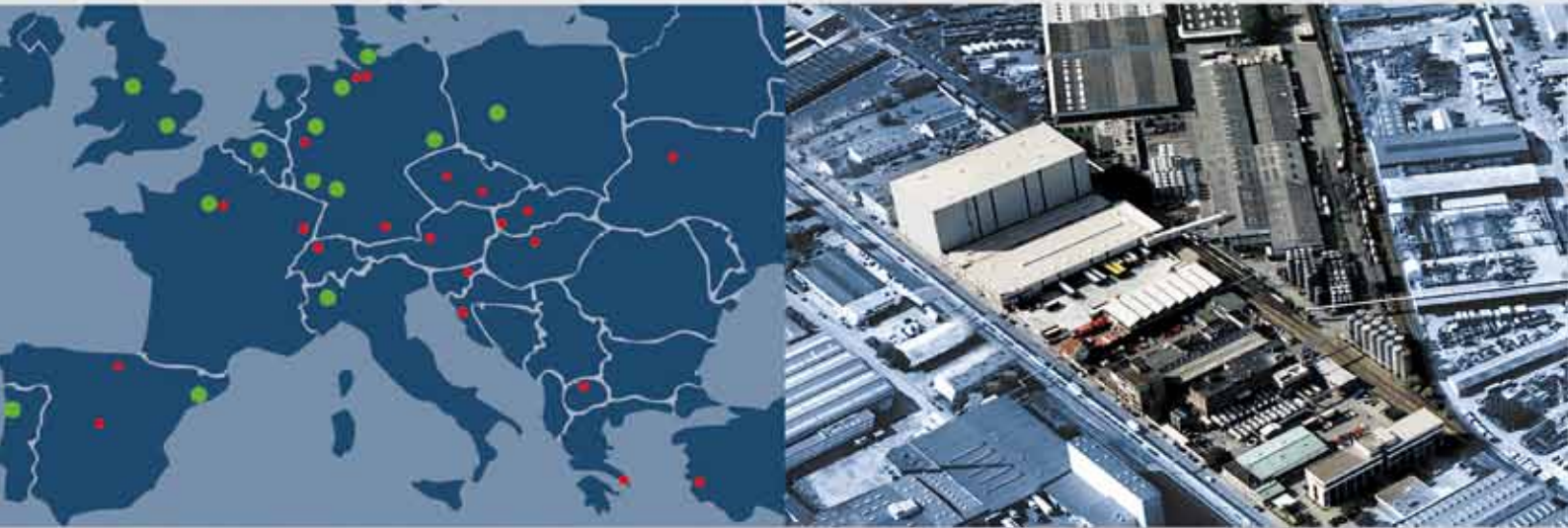


**Process media
specially developed
for steel mills**



FUCHS EUROPE SCHMIERSTOFFE GMBH

YOUR STRONG GLOBAL PARTNER



HOW WE EXCEL

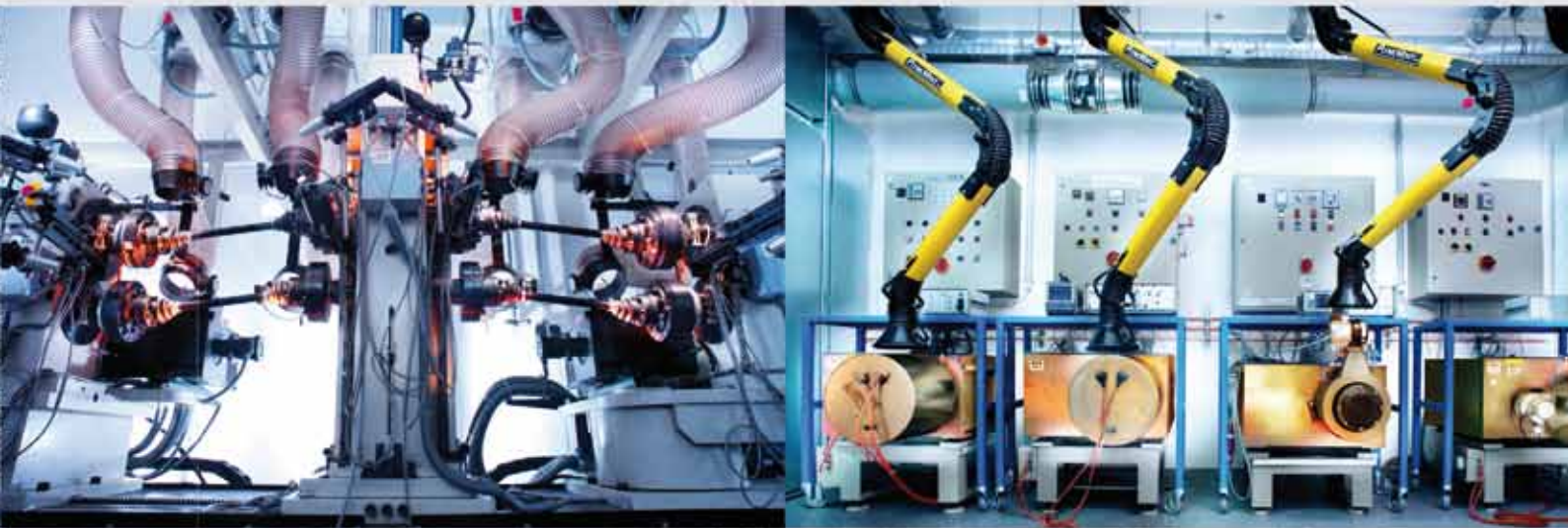
We are a German company whose almost 600 employees manufacture and market a wide range of lubricants and derived specialties. The company, which was founded in 1931 as RUDOLF FUCHS, is located in Mannheim and is a 100 % subsidiary of FUCHS PETROLUB AG, which is the largest independent lubricant manufacturer worldwide.

Our company's degree of specialisation and innovation is way above the industrial average in this field. The full product line includes almost 2,000 lubricants and derived specialties for all walks of life, industrial processes and applications. Our customer's success is also our success. Because partnership to us means passing-on benefits.

The advantage of a strong market presence: FUCHS is the largest independent manufacturer of lubricants in the world. The benefit of premium, innovative products from a full-line manufacturer: With a complete product line as well as tailor-made special solutions, FUCHS has a product for every application. The benefits of reliability: Certified according to DIN EN ISO 9001:2008 and ISO/TS 16949:2009, FUCHS has been continuously upgrading its highly specialised lubricants for decades.

And naturally, partnership for us also means providing our customers with competent support. With comprehensive marketing. With high-performance logistics. With the development of successful service concepts. And qualified consulting. Because together, we can achieve more.

FOR INDUSTRIAL LUBRICANTS



WHAT INCREASES THE VALUE OF OUR PRODUCTS

We develop lubricants: application-specific and tailor-made for our customer's processes. Together we look for the best lubricants for our customers. This cooperation is unique in terms of its form, scope and intensity. We call it **development partnership**. The success of our development partnerships is based on an important fact: FUCHS is not one of the oil-giants.

FUCHS is a multinational, independent lubricant manufacturer. Our independence is the difference. We are open to new solutions, open for visions – the prerequisites for innovations. And innovation is the defining characteristic of FUCHS. 70 % of our products are less than five years old and the great majority of our products are individual solutions. Challenge us and see!



DIN EN ISO 9001:2008
ISO/TS 16949:2009
DIN EN ISO 14001:2004
REG.NR. 2476



Process chain in steel mills

Continuous casting



Hot rolling



Our products also function perfectly in the extreme conditions encountered in continuous casting lines and in hot rolling mills. They are specially formulated to withstand the highest temperatures and pressures.

Fire-resistant hydraulic oils

HYDROTHERM 46 M	Type HFC fire-resistant hydraulic fluid for use in applications subject to fire risks. Fulfills the demands of the 7th Luxembourg Report.
PLANTOFLUX AT - S series	Demulsifying, water-free, Type HFD-U fire-resistant hydraulic fluids, ISO-VG 46/68. For hydraulic applications subject to fire risks, based on synthetically esters, approved factory mutual, USA.

Greases for rolling and plain bearings

RENOLIT CX-FO 20	Calcium complex soap multipurpose EP grease with excellent pumpability in long piping systems to extreme radiated heat, NLGI 2.
RENOLIT CXI series	Heavy-duty calcium-sulphate complex soap grease with excellent corrosion protection, good resistance to aggressive media and radiated heat.
RENOLIT SEB 2 H	Lithium soap EP grease for steel mills with good pumpability and a broad range of applications. Approved to SEB 181 253, NLGI 2.

Special greases for hot rolling

RENOLIT FAP 502	Heavy-duty lithium-calcium soap grease with good corrosion protection, NLGI 2.
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The information contained in this product information is based on the experience and know-how of FUCHS EUROPE SCHMIERSTOFFE GMBH 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 pre-treatment, 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 EUROPE SCHMIERSTOFFE GMBH 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 program, 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.

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Cold rolling



Process-specific rolling emulsions optimize consumption and thus make a direct contribution towards cutting costs.

Skin-passing



Water-miscible and neat products for skin-passing processes generate optimum surface finishes.

Cold rolling oils and emulsions

TRENOIL S 700 series S 800 series

Highly-stable, emulsifiable synthetic oils for the cold rolling of steels. The 800 series allows for simple handling even if the emulsion is unstable. The 700 series excels with its stability against dragged-in contaminants.

RENOFORM WO series

High-quality, annealing residue-free and ageing-stable cold rolling oils. These products are available in various, practical viscosity grades.

Oils for MORGOIL bearings

RENOLIN MORGEAR series

Demulsifying, high-performance general lubricating oils for MORGOIL bearings. Fulfil and exceed the requirements of DANIELI (Italy, 2000) and SMS (2005).

Greases for plain and rolling bearings

RENOLIT LX-PEP 2

High-temperature, EP lithium-complex soap, grease for plain and rolling bearings, NLGI 2.

RENOLIT SEB 2 H

Lithium-soap, EP steel mill grease with good pumpability for a broad range of applications. Approved acc. SEB 181 253, NLGI 2.

Skin-passing oils

ANTICORIT SPO series

Neat, barium-free skin-passing oils for the rolling of steel. The ANTICORIT SPO series offers, in addition, very good corrosion protection.

TRENOIL SP series

Water-miscible, nitrite, amines and boron free oils for use in skin-pass operations. TRENOIL SP Series offers detergency and corrosion protection at a very high level.

Process chain in steel mills

Coil oiling / Coil coating



Our corrosion protection products are used by numerous well-known steel and automobile manufacturers and in many cases are the reference products of the VDA (German Association of the Automotive Industry). By continuously developing its products, FUCHS can also offer corrosion preventives in the future which offer the greatest possible process reliability.

Steel mill piling for automotive apps		General steel mill oiling	
ANTICORIT RP 4107 S	Barium-free standard steel mill oil, run-off inhibiting, excellent protection for indoor storage, in condensation climates and in acidic atmospheres. Fulfils VW A 001, OPEL B 040 12470, DBL 6757.05. VDA 230-201 reference oil.	ANTICORIT 5012 S	Well established and tested corrosion protection oil with good performance in condensation climates. For the indoor and transport protection of cold-rolled steel.
ANTICORIT PL 3802 39 S	VDA-approved barium-free Prelube – thixotropic corrosion preventive with good forming properties, fulfils VDA 230-201.	ANTICORIT PLS 30 N	Barium-free corrosion preventive with forming properties for the protection of sensitive cold-rolled steel surfaces, zinc-coated or non-coated.
ANTICORIT PL 39 SX	Drylube – dry lubricant, highly thixotropic with very good forming properties, fulfils VDA 230-202.	ANTICORIT RP 30 NT	Barium-free corrosion protection oil for the protection of cold-rolled steel during indoor storage and transport.
ANTICORIT PLS 100 T	Forming Prelube – thixotropic corrosion preventive with excellent forming properties. A further development of ANTICORIT PL 3802 39 S.	Vapour phase corrosion inhibitor packaging	
		ANTICORIT VCI UNI FI*	Transparent VCI films in various formats. Also suitable for automated packing lines.
		ANTICORIT VCI FE P*	VCI papers in various qualities, also in crepe form and with single-sided PE coatings.

* ANTICORIT VCI products are completely free of nitrites and secondary amines. They thus surpass the demands of TRGS 615. They do not release any poisonous or easily-flammable vapours. They are also free of heavy metals and thus pose no health risks.



Peripheral applications

Alongside the process chain itself, there are numerous other FUCHS products which are perfect for peripheral applications.

Greases	
RENOLIT CX-HT 0	Heavy-duty calcium sulphonate-complex soap grease for the lubrication of open gears and chains, NLGI 0.
RENOLIT ST-FTM 2	High-temperature grease for plain and rolling bearings as well as guides which are exposed to extremely high temperatures up to T < 250°C, NLGI 2.
RENOLIT LZR 2 H	High-quality, multipurpose EP grease which is especially suitable for central lubrication systems in cranes, etc. NLGI 2.
RENOLIT CX-HT 2	Heavy-duty, calcium sulphonate-complex soap grease containing solid lubricants with outstanding corrosion protection for use in cranes, etc. as well as for plain and rolling bearings which are subject to extremely high temperatures (e.g. furnaces). NLGI 2. Also available in spray cans as RENOLIT UNILOAD.
RENOLIT SEB 2 H	Lithium-soap, EP steel mill grease with good pumpability for a broad range of applications. Especially suitable for sheet steel coiling machines. Approved acc. To SEB 181 253, NLGI 2.
RENOLIT LX-PEP 1/2	Lithium-complex soap special grease for universal shaft knuckle joint bearings, NLGI 1/2.
RENOLIT H 443-HD 88	Vibration-resistant, lithium-soap, EP multipurpose grease with good adhesion for use in electric motors, ventilators and blower bearings, NLGI 2/3.
RENOLIT SO-GFB	EP sodium-soap semi-fluid gear grease, NLGI 00.
RENOLIT CX-EP 0	Calcium-complex soap, EP multipurpose and semi fluid gear grease, NLGI 0.
Cutting-fluids	
ECOCOOL S series	Mineral oil-, nitrite-, chlorine and zinc-free water-miscible cutting fluids. Especially recommended for rollgrinding.
Hydraulic oils	
RENOLIN DTA series	Hydraulic and general lubricating oils (machine oils) offering good oxidation resistance and corrosion protection. CL lubricating oils according to DIN 51517-2 and HL hydraulic oils according to DIN 51524-1, excellent demulsifying.
RENOLIN B series	Lubricating and hydraulic oils with additives to improve ageing resistance, corrosion and wear protection. Demulsifying HLP hydraulic oils according to DIN 51524-2 (B HVI series: DIN 51524-3), ISO 11158-HM.
RENOLIN ZAF B series	Demulsifying zinc- and ash-free hydraulic oils. Fulfil and surpass the minimum demands of HLP hydraulic oils acc. to DIN 51 524-2, ISO 6743/4 HM, ISO 11158 HM.
RENOLIN MR series	Highly detergent general lubricating and hydraulic oils containing zinc. HLP-D acc. to DIN 51 502. Fulfil and surpass the demands of HLPD hydraulic oils acc. to DIN 51524-2, higher corrosion protection.
Industrial oils	
RENOLIN CLP series	Demulsifying, EP/AW zinc- and silicone-free gear and general lubricating oils. Fulfil and surpass the minimum demands of CLP lubricating oils acc. to DIN 51517 Part 3 (2004), ISO 6743-6 and ISO 12925-1: CKC, CKD. US Steel 224, David Brown S1.53.10.
RENOLIN CLP PLUS series	High-performance, EP/AW, detergent, zinc- and silicone-free gear and general lubricating oils. Fulfil the minimum demands of DIN 51517, ISO 6743-6 und ISO 12925-1: CKC, CKD lubricating oils, resistance and corrosion protection.

The complete lubricants program from the specialists.

All from one supplier

Each step of the steel-making process makes specific demands on the process media used. Starting with continuous casting to cold rolling through to coil coating, we offer a wide range of carefully matched and compatible lubricants.

As a long-term partner of all large steel manufacturers and in direct cooperation with leading automobile manufacturers and the VDA (German Association of the Automotive Industry), our products continue to prove their suitability in terms of the highest quality, reliability and performance. This leaflet provides an overview of the full line of products offered FUCHS.

Cross-compatibility is constantly monitored in our own, state-of-the-art research facilities and laboratories. This guarantees a reliable process chain starting with cleaning, to metalworking, through to corrosion protection.

As well as constant monitoring, we regularly add new products to our program.

The consumption and process optimization thus achieved in various application areas contribute to significant cost reductions.

Decades of experience, far-reaching know-how, global approvals from leading manufacturers and our local experts make our product program unique.

The benefits of FUCHS system products:

- Intensive consultation, optimum service – worldwide
- Full range of products – all from one supplier
- Fully compatible products
- No process failures caused by product incompatibility
- Thorough testing in in-house facilities
- Close cooperation in obtaining approvals

For optimum process reliability.



**Simply copy, complete and – if possible – fax to:
+49 621 3701-7401**

Corrosion protection:

Packaging: Normal packaging Overseas packaging Without packaging
 Winter packaging With VCI
 Other: _____

Transport: Regional Within europe Sea transport National

Required corrosion protection: up to 3 months up to 1 year up to 3 years up to 6 months
 up to 1 1/2 years

Corrosion preventive properties: Non-run-off inhibited Run-off inhibited VDA-approval
 Corrosion prevention Prelube Forming Prelube
 Hotmelt

Applikations-possibilities: Electrostatic spraying Rolling
 Temperature range: ____ °C Others: _____

Currently used product: _____

Problem description: _____

Notes: _____

Date: _____

Signature: _____

Application:

Application

Machine: _____ Manufacturer: _____

Friction point:

e.g. rolling bearing, joint, chain, gear, etc

Bearing type and classification: _____ Bearing manufacturer: _____

Bearing speed: _____ Location: _____

Sealing material: _____ Cage material: _____

Ambient temperature: _____

Ambient conditions:

e.g. water, dirt, acids, alkalines, vibration, etc.

Type of lubrication

Lubricated-for-life:

Manual greasing, e.g. with a brush:

grease nipple, e.g. cartridge:

Central Lubrication System:

Manufacturer: _____

Other methods: _____

Currently used product: _____

Problem description: _____

Other: _____

Rolling:

Hot and cold rolling processes require a high degree of application engineering know-how. And in this area we offer customer-specific solutions. We would be pleased to offer personal application engineering advice to customers in this sector. Please don't hesitate to contact us.

Ask the specialist: The FUCHS checklist for your product recommendation.

We can use this questionnaire to determine which is the best lubricant for your needs.

Your address:

Company / Customer: _____ Phone: _____

Street: _____ Fax: _____

City: _____ E-mail: _____

Contact / Contact / Dept.: _____

General lubricating oils / Gear oils, hydraulic oils:

Machine: _____ Manufacturer: _____ Year: _____

Central lubrication: Yes No

Fill volume: _____ Change intervals: _____

Temperature: _____ Speed (gearboxes): _____

Currently used product: _____

Problem: _____

Other: _____