

**FUCHS Industrial Lubricants**

**For extra process reliability**



**Lubricants for roller bearing  
and guide rail manufacturing**



FUCHS EUROPE SCHMIERSTOFFE GMBH

# YOUR STRONG GLOBAL PARTNER



## HOW WE EXCEL

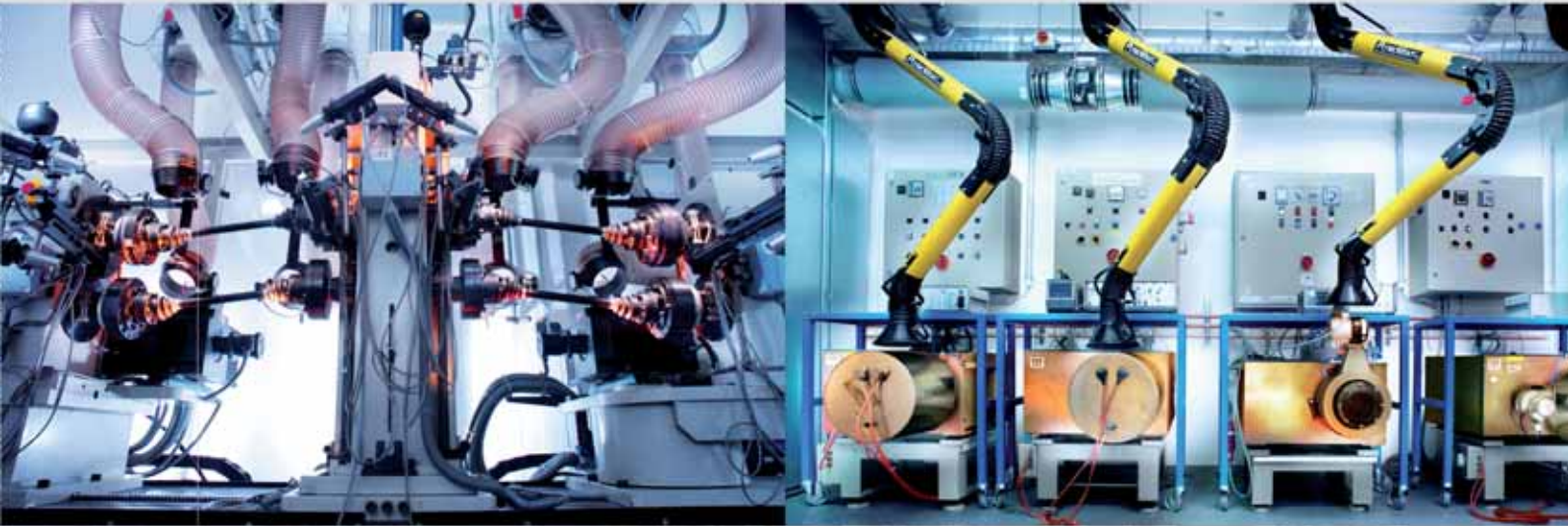
We are a German company whose almost 600 employees manufacture and market a wide range of lubricants and derived specialties. The company, which was founded in 1931 as RUDOLF FUCHS, is located in Mannheim and is a 100 % subsidiary of FUCHS PETROLUB AG, which is the largest independent lubricants manufacturer 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 9001:2000 and ISO/TS 16949:2002, 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 9001:2000  
ISO/TS 16949:2002  
DIN EN ISO 14001:2004  
REG.NR. 2476





# Lubricants for roller bearing and guide rail manufacturing.

## Machining



A whole series of high-performance and proven metalworking fluids are available for the machining of roller bearings and linear guide rails. Depending on the cutting fluid concept in use, fluids from the following product lines can be used.

Metalworking fluids, water-miscible	
ECOCOOL 2215 BF-FAG	Turning, milling, grinding.
ECOCOOL 2510 N-INA	Turning, milling, grinding.

Metalworking fluids, non water-miscible	
<b>ECOCUT SERIES</b>	
ECOCUT HFN 7 LE And HFN 10 LE-HC	Grinding, finishing.
ECOCUT HFN 3 LE	Honing.
ECOCUT 232	Turning, milling.
ECOCUT 715 LE	Deep-hole drilling.
ECOCUT 216	High-speed machining, turning, milling.
<b>PLANTOCUT SERIES</b>	
PLANTOCUT 10 SR	Broaching.

Further fully-synthetic metalworking fluids for specific applications are available on request.

While the information and figures given here are typical of current production and confirm to specification, minor variations may occur. Subject to amendment.  
Edition 07/2008



## Cleaning



Surfaces for subsequent manufacturing processes may have to be oil-free and clean. There are a number of different types of cleaners available.

### Water-rinsable cleaners

RENOCLEAN UWF	Water-rinsable cleaner. Free of aromatics. Contains VOC*.
RENOCLEAN KU	Odor-optimized, water-rinsable cleaner. Free of aromatics. Contains VOC*.
RENOCLEAN KLV	VOC*-free, universal solvent-based cleaner. Perfect for industrial, workshop and domestic applications.

### Water-based alkaline (sprayable cleaners)

RENOCLEAN VR 1021 SERIES	Medium-alkalinity. For use at temperatures between +35 °C and +60 °C.
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### Water-based alkaline (submersion cleaners)

RENOCLEAN SPEZIAL 2000	Medium-alkalinity. Universal application such as components, floors, etc.
RENOCLEAN VR 1798/2	Medium-alkalinity. Universally suitable for steel and aluminium. Also for ultrasonic cleaners.

\*VOC = Volatile Organic Compounds.

## Corrosion protection



Corrosion protection products must be fully compatible with previously-applied lubricants. We recommend: ANTICORIT corrosion preventives.

### Dewatering fluids

ANTICORIT DF SERIES	High-speed dewatering fluids. Form thin, highly-effective, oily-, waxy- or lacquer-like corrosion protection films.
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### Corrosion protection oils

ANTICORIT 03 W SERIES 04 W SERIES	Corrosion protection concentrates miscible with white spirits and isoparaffins. Offer outstanding protection and smooth running.
ANTICORIT BG SERIES	Corrosion protection oils for interim and final protection. Some with VCI characteristics.

### Water-based

ANTICORIT MKR SERIES	Water-miscible corrosion preventives for the cleaning and interim protection of semi-finished components, phosphated parts and components used in the potable water sector. Also a hydraulic water and coolant additive.
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### Vapour phase inhibitors

ANTICORIT VCI SERIES	Advanced VCI technology for the protection of all metals. Available as VCI paper, film, powder, tablets or oils. Tailor-made solutions for corrosion protection and packaging.
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### Thixotropic products

ANTICORIT TX SERIES	Run-off resistant oils, specially formulated for final protection and for the requirements of the roller bearing industry.
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# The optimum lubricant for every stage in the process.

## Greases



A whole series of high-performance and proven metalworking fluids are available for the lubrication of roller bearings and linear guide rails. Depending on the application and performance required, greases from the following product lines can be used.

Bearings	
<b>RENOLIT GP/MP SERIES</b>	Standard multipurpose greases for roller bearings.
<b>RENOLIT LZR 2 H</b>	EP multipurpose grease with very good corrosion protection.
<b>RENOLIT DURAPLEX EP SERIES</b>	Multipurpose, EP, lithium-complex-soap greases for a wide range of temperatures, -30 °C to +160 °C (even up to +200 °C for short periods).
<b>RENOLIT LX/PEP SERIES</b>	Ageing-resistant, lithium-complex-soap, long-life and high-temperature greases for, e.g. electric motors, and wheel bearings in cars and trucks, -30 °C to +150 °C.
<b>RENOLIT CX SERIES</b>	Calcium complex greases for highly-stressed rolling bearings in difficult ambient conditions.
<b>RENOLIT FEP/FAP SERIES</b>	Lithium-soap greases with various base oil viscosities for high mechanical loads.
<b>RENOLIT LX-NHU 2</b>	Semi-synthetic, lithium complex-soap, EP greases for a wide range of temperatures. Outstanding corrosion protection, shear-stable, NLGI 2/1, -30 °C to +160 °C.
<b>RENOLIT HLT/RHF SERIES</b>	Synthetic, lithium-soap greases for a wide range of temperatures. For long-term lubrication.
<b>RENOLIT ST/V SERIES</b>	Special synthetic oil-based greases for very high-temperature, grease-for-life applications.
<b>PLANTOGEL SERIES</b>	Rapidly biodegradable greases.

Linear guide rails	
Free-flowing greases:	
<b>RENOLIT DURAPLEX EP 00</b>	Lithium-complex-soap, EP free-flowing grease for a wide range of temperatures, NLGI 00/000, -30 °C to +140 °C.
<b>RENOLIT SF 7-041</b>	Lithium-soap, EP, free-flowing grease for central lubrication systems on machine tools and machinery. NLGI 000, -30 °C to +120 °C.
Special greases:	
<b>RENOLIT GL 1</b>	Friction and wear-optimized, special grease with noise-suppressing properties, NLGI 1, -30 °C to +140 °C. Available in aerosol form as <b>RENAX GLEITSPRAY</b> .
<b>PLANTOGEL 2 S</b>	Rapidly biodegradable, synthetic ester-based, EP grease. Water-resistant, -40 °C to +120 °C. Available in aerosol form as <b>PLANTO MULTISPRAY S</b> .
High-speed greases:	
<b>RENOLIT HLT SERIES/RHF 1</b>	Ageing resistant, PAO-based, lithium-soap greases for high thermal and mechanical loads. Good elastomer compatibility, wide temperature range from -40 °C/-50 °C to +140 °C.
<b>RENOLIT JP 1619</b>	Lithium-soap, low-temperature grease for high mechanical loads. Also suitable for high speeds. Very good sliding properties, NLGI Grade 1, -50 °C to +120 °C.



# The complete lubricants program from the specialists.

## All from one supplier

The manufacturing of roller bearings and guide rails involves a great many complex steps. These steps are interdependent on each other and must be carefully matched. And, in particular, the lubricants used have to guarantee optimum process compatibility. 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.

Apart from conventional products and solutions, we also offer products which conform to national environmental legislation and/or VOC regulations.

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.



## Ask the specialists:

### The FUCHS check list for a product recommendation.

Based on this questionnaire, we can tell you which is the best lubricant for your particular needs.

#### Your address

Company/customer: \_\_\_\_\_

Phone: \_\_\_\_\_

Street: \_\_\_\_\_

Fax: \_\_\_\_\_

City: \_\_\_\_\_

E-mail: \_\_\_\_\_

Contact/function/dept.: \_\_\_\_\_

#### Which product do you currently use?

Forming lubricant: \_\_\_\_\_

Cleaner: \_\_\_\_\_

Corrosion protection: \_\_\_\_\_

#### Forming

Material (blank):  Steel  Stainless steel  Aluminium  Nonferrous metal

Other: \_\_\_\_\_

Material thickness:  $s_0 =$  \_\_\_\_\_ mm

Tool: Material: \_\_\_\_\_ Coating: \_\_\_\_\_

Machine: Manufacturer: \_\_\_\_\_ Type: \_\_\_\_\_

#### Specification of the desired forming lubricant:

Mineral oil-based  Chlorine-free  Corrosion protection  
 Synthetic  Pigments

Viscosity at +40 °C:  $\nu_{40} =$  \_\_\_\_\_ mm<sup>2</sup>/s Concentration: \_\_\_\_\_ %

#### Application:

Spraying on the material  Run-off  
 Spraying the tool  Flooding

Other: \_\_\_\_\_



# Simply copy, complete – as far as possible – and fax back to +49 621 3701-414.

## Corrosion protection

### Application:

Description of the application

**Material:**  Steel  Electrogalvanize  Aluminium  \_\_\_\_\_  
 Ferric  Hot-galvanize  Gray cast iron

**Surface of the parts:**  Dry  Wet  Chemical clean  Rough  Blank  
 Clean  Dirty  Sand blasted  Polished  \_\_\_\_\_

**Packing:**  None  In  $\mu\text{m}$  PE film  Individual packaging  Closed packaging  
 In greaseproof paper  In  $\mu\text{m}$  VCI film  In racks  Open packaging  
 With VCI  On greaseproof paper  \_\_\_\_\_

**Transport:**  No transport  National  Sea freight on deck  \_\_\_\_\_  
 Regional  Within Europe  Sea freight below deck

**Storage conditions:**  Warehouse  Tropical climate  Cold climate  Temperature: \_\_\_\_\_  
 Shed  Subtropical climate  Monsoon conditions  Humidity: \_\_\_\_\_  
 Outdoors  Temperate climate  Coastal region  \_\_\_\_\_

**Desired time of corrosion protection:**  Up to 1 week  Up to 3 month  Up to 1 year  Up to 3 year  
 Up to 1 month  Up to 6 month  Up to 1 1/2 year  Over 5 year

**Coating:**  No coating  Waxy   $< 2 \mu\text{m}$    $> 5 \mu\text{m}$   
 Oily  Vaseline   $2 - 5 \mu\text{m}$   \_\_\_\_\_

**Characteristics of the corrosion preventive:**  Non-thixotropic  VCI agent  Solvent A II  Aqueous  \_\_\_\_\_  
 Thixotropic  VOC-free  Solvent A I  Ba-free

**Application:**  Dipping  Brushing  Hot application  Temperature: \_\_\_\_\_  
 Spraying  Wiping  Drying possible  \_\_\_\_\_

### Process:

Kind of process before corrosion protection

### Approvals:

Kind of process after corrosion protection

Needed approvals

**Competitor product:** Product: \_\_\_\_\_ Trading unit: \_\_\_\_\_  Sample available

### Problems:

Are there any problems with the actually used corrosion protection product?

### Demand p.a.:

### Packaging unit:

### Photo or drawing of the part:

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**FUCHS Industrial Lubricants**

## **Innovative lubricants need experienced application engineers**

Every lubricant change should be preceded by expert consultation on the application in question. Only then can the best lubricant system 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:



### **FUCHS EUROPE SCHMIERSTOFFE GMBH**

Friesenheimer Straße 15  
68169 Mannheim / Germany  
Phone: +49 621 3701-0  
Fax: +49 621 3701-570  
E-mail: [zentrale@fuchs-europe.de](mailto:zentrale@fuchs-europe.de)  
[www.fuchs-europe.de](http://www.fuchs-europe.de)

Export Division  
Friesenheimer Straße 9  
68169 Mannheim / Germany  
Phone: +49 621 3701-703  
Fax: +49 621 3701-719