



# LUBCON<sup>®</sup> Special Lubricants for Train, Rail and Wheel



biodegradable

**High-Tech Lubricants  
for Improved Safety and Reliability**

# LUBCON Special Lubricants

# for Train, Rail and Wheel



**Clutches  
Buffers**

*Grizzlygrease No. 3  
Grizzlygrease Bio 1-1000*



**Wheelset bearings**

*Turmogrease Li 802 EP  
Turmoplex 3 EP*



**Ball screws  
Seals  
Guiding systems**

*Turmotemp N 182  
Turmogrease SKL series  
Turmogrease PP 300*



**Panthographs**

*Terrasol 40 CW  
Turmogrease HDC 2*



**Switches**

*Terrasol SWA series  
Terrasol 100 WT  
Sintono Terra W DB*



**Connections  
Traction motors**

*Turmogrease L 802 EP plus*



**Top of Rail**

*Sintono Terra HLK*



**Rail edge  
Wheel flange**

*Sintono Terra SK-RE series  
Sintono Terra HLK*

# Rail Flange Lubricants

All lubricants listed below fulfill the following criteria:

- ✓ biodegradable by OECD 301
- ✓ approved/tested by most producers of wheel flange lubricating systems
- ✓ available in different packaging sizes



Application	Product	Operating Temperature Range	Consistency class at 40 °C	Water resistance (DIN 51807 T1)	Friction Coefficient	Drop Point (DIN 2176 °C)	Solid Additives	Base Oil/Thickener	Unit	Features & Benefits
Wear reduction	Sintono Terra SK 1	-40 °C up to +120 °C	1	0-90	--	160	--	Synthetic oil/lithium-calcium soap	Tram	This grease has been developed for the application on grooved rails within cities (clean lubrication). It is adhesive, resistant to water, suitable for axle load up to 11 to and can be used in all grease application systems.
	Sintono Terra SK 2	-40 °C up to +120 °C	2	0-90	--	170	--	Synthetic oil/lithium-calcium soap	Light rail, metro	This lubricant has been developed for the application on vignol rails outside cities. The distribution is approx. 1.000 m. It is adhesive, resistant to water, suitable for axle load up to 20 to and can be used in all grease application systems.
	Sintono Terra SK-RE 1	-40 °C up to +120 °C	1	1-90	--	>200	--	Synthetic oil/silicate thickener	Main line, HST*	Innovative grease with very good adhesive properties for the lubrication of long distances up to 7.000 m. It can be applied at high rail temperatures up to 120 °C. The universal grease performs very good and is suitable for axle load up to 30 to. Moreover, it can be used in all grease application systems.
	Grizzlygrease Bio 1-1000	-40 °C up to +140 °C	1	0-90	--	>190	--	Ester oil/ca-sulfonate complex soap	Main line, HST*, metro, high load	Grease for the lubrication of guide rails and rails in industrial plants, e.g. steel plants, with very high axle load and side pressure. This grease has an outstanding wear reduction performance.
Noise reduction, wear reduction on top of rail	Sintono Terra HLK (00/0/1)	-40 °C up to +120 °C	00/0/1	0-90	0.33	>200	different soft metals	Synthetic oil/silicate thickener	all	Special grease mainly designed for noise reduction without influencing brake efficiency. Specially designed pumps, distributors and nozzles are needed for grease application. The grease is sprayed or pressed on top of rail and must be handled and applied very carefully. This way it can reduce curve squeeling by almost 100 %. <b>DB-material no. 991 955</b>

\* HST = high-speed trains

## Special Lubricants and Lubrication Technology:

### Successful Duo against Wear!

- ✓ increased safety and reliability
- ✓ cost savings
- ✓ higher efficiency



## Two in One: Special Rail Lubricant Reduces Wear and Noise on Check Rails

**Grizzlygrease Bio 1-1000** serves perfectly to reduce wear on check rails. The ageing resistant special grease shows good adhesion, high pressure absorption capability and has a wide operating temperature range. This special grease minimises wear and significantly reduces noise accumulations on check rails, the latter being a special benefit for rail lines in residential areas.

### Lubricant and Lubrication Technology: Successful Duo against Wear

In railway systems manual lubrication is often limited due to the rail network complexity. Lubrication experts, therefore, recommend the use of automatic lubrication systems. Check rails, for example, can be lubricated using the intelligent single point lubricator **MicroMax® 120** filled with **Grizzlygrease Bio 1-1000**. Appropriate lubrication technology reduces maintenance (labour) costs and prevents over and/or under lubrication due to precise grease application and automatic lubrication cycle adjustment.



MicroMax® 120 installed at check rail

# Wheel Flange Lubricants

All lubricants listed below fulfill the following criteria:

- ✓ biodegradable by OECD 301
- ✓ approved/tested by most producers of wheel flange lubricating systems
- ✓ available in different packaging sizes



Application	Product	Operating Temperature Range	Consistency class at 40 °C	Water resistance (DIN 51807 T1)	Friction Coefficient	Drop Point (DIN 2176 °C)	Solid Additives	Base Oil/Thickener	Unit	Features & Benefits
Wear reduction	Sintono Terra SK	-40 °C up to +120 °C	000	0-90	--	130	--	Synthetic oil/lithium-calcium soap	Tram	This grease is adhesive, resistant to water and suitable for axle load up to 11 to. It has been developed for the application at low speed (< 50 km/h).
	Sintono Terra SK-RE	-40 °C up to +120 °C	00	1-90	--	>250	--	Synthetic oil/silicate thickener	Light rail, Metro	Innovative grease with high temperature stability and remarkable adhesive properties. It is suitable for light rails with a maximum speed of 160 km/h and locomotives with wheel block brakes that have an axle load up to 25 to/axle.
	Sintono Terra SK-RE LT	-50 °C up to +120 °C	00	1-90	--	>250	--	Synthetic oil/silicate thickener	Light rail, Main Line	Innovative grease developed for the application at very low temperatures. The grease is sprayable in the whole temperature range and is suitable for high speeds up to 220 km/h. It can also be used for rack railways.
	Sintono Terra SK-RE DB	-40 °C up to +120 °C	00	1-90	--	>250	--	Synthetic oil/silicate thickener	Main Line, HST	Special grease with very good adhesive properties for the lubrication of long distances. The grease sticks well to the wheel even at speeds of up to 250 km/h. By applying the grease to the rail the following bogies are lubricated as well. The lubricant is very temperature-stable and adhesive even at rail temperatures of more than 80 °C. The compatibility with elastomers commonly used in folding bellows or industrial paint for bogies has been successfully tested. The product can be used for all types of trains/light rails, trams and locomotives. <b>DB-material no. 517 718</b>
Noise reduction, wear reduction on top of rail	Sintono Terra HLK	-40 °C up to +120 °C	00	0-90	0.33	>200	different soft metals	Synthetic oil/silicate thickener	all	Special grease mainly designed for noise reduction without influencing brake efficiency. Specially designed pumps, distributors and nozzles are needed for grease application. The grease is sprayed or pressed on top of rail and must be handled and applied very carefully. This way it can reduce curve squeeling by almost 100 %. <b>DB-material no. 991 955</b>

\* HST = high-speed trains

## Top of Rail Conditioning instead of Curve Squeeling

Local residents, passengers and conductors - all of them know the unpleasant sound released by rail-bound traffic, especially in curves. This high pitched sound is also known as curve squeeling. To reduce this sound LUBCON developed **Sintono® Terra HLK** in collaboration with maintenance operators and plant technicians. The friction modifier helps to control the vibrations between wheel flange and rail edge and can therefore effectively reduce noise.

**Sintono® Terra HLK** can be applied on top of rail as well as on rail edges. It fulfills the criteria for braking and traction capability and is biologically degradable. It forms a lubricating film that is resistant to water and oxidation and sticks well to all surfaces. Moreover, the lubricant has a very good load carrying capacity.

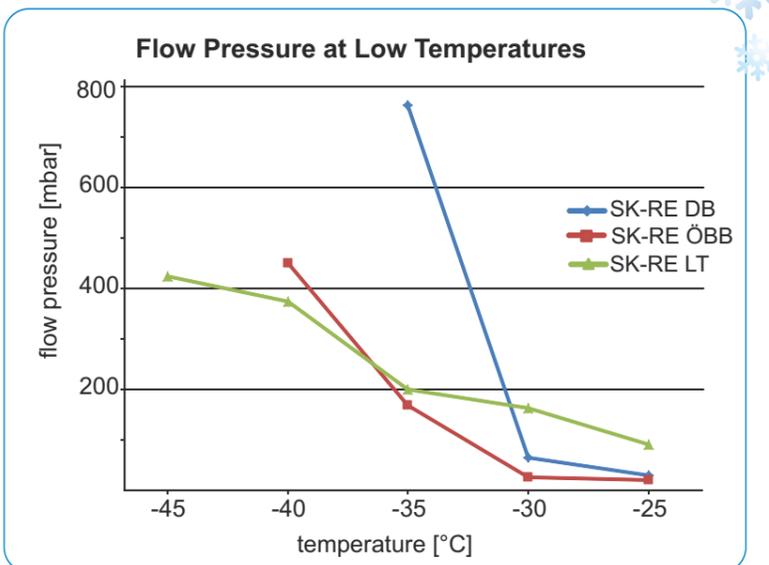


Evidently effective against squeaking and screeching: measurement prior to lubrication (left) and after application of Sintono® Terra HLK (right).

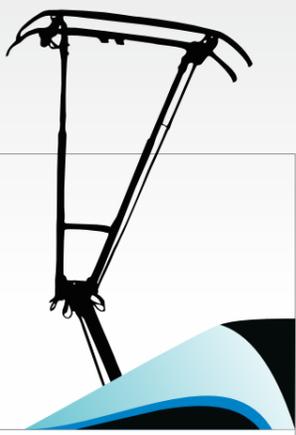
## Sintono Terra SK-RE LT - Safe Lubrication at Freezing Temperatures

As temperature falls the flow pressure of grease usually increases. More pressure is needed to pump grease through a nozzle. Thus, we need a special grease for optimum pumpability in a lubrication system.

**SINTONO TERRA SK-RE LT** is suitable for temperatures from -50 °C up to +120 °C. Due to its very good pumpability within the whole operating temperature range it can be used in wheel flange lubrication systems all year long, even under extreme conditions as they exist in Russian winter, for example. The very good resistance to water and very high load carrying capacity are persuasive.



# Other Railway Products



Application	Product	Operating Temperature Range	Consistency class at 40° C	Water resistance (DIN 51807 T1)	Drop Point (DIN 2176 °C)	Flashpoint (DIN EN ISO 2592 °C)	Solid-Additives	Base Oil/Thickener	Unit	Features & Benefits
Switches	Terrasol SWA series 	-20 °C up to +140 °C	--	--	--	--	graphite/ MoS <sub>2</sub>	Esteroil	Metro, tram	Special lubricants for the treatment of switch blades and switch controls. Solid lubricants do not leave any residues but provide optimum surface coating. The oils can be applied without prior cleaning, they damp mechanical pressures on the switches and offer outstanding protection against wear.
	Terrasol 100 WT 	-25 °C up to +120 °C	--	--	--	>240	--	Esteroil	Main line, light rail	Due to special additives the lubricant is resistant to oxidation, reduces wear while it has very good lubricating properties and adhesive capacities.
	Sintono Terra W DB 	-40 °C up to +120 °C	000	0-90	>200	--	--	Ester/silicate	Main line, light rail	Semifluid grease with very good flowability at low temperatures and high lubricating film consistency at high temperatures. It is very adhesive with a high UV-resistance.
Contact wire	Terrasol 40 CW 	-30 °C up to +120 °C	--	--	--	>250	PTFE	Esteroil	Tram/train	This oil protects reliably against wear and prevents initial ice formations. It supports the use of automatic spray systems or can be applied manually at the contact wire.
Panthograph (bearings)	Turmogrease HDC 2	-30 °C up to +150 °C	2	1-80	>250	--	--	Mineral oil/ ca-complex	Tram/train	Special grease with resistance to water and other media. This grease is neither washed out nor softening even under constant exposure to water. It is designed for low rotational speed and provides good corrosion protection.
Door closing systems	Turmogrease SKL 18 VTF	-50 °C up to +130 °C	2	0-90	>190	--	PTFE	SHC/ lithium soap	all	Synthetic long-life grease for the lubrication of ball screws in door closing mechanisms. It provides a low frictional resistance, high wear protection and enables the safe functioning of door systems in all kind of trains.
	Turmogrease PP 300	-40 °C up to +150 °C	1-2	0-90	--	--	--	Polyglycol/ inert inorganic thickener	all	Resistant to aqueous acids, basic solvents, elastomers and to natural or synthetic rubber. It is suitable for the lubrication and care of door seals. This grease can be removed easily from surfaces, leaving no sticky residues.
	Turmotemp N 182	-50 °C up to +120 °C	2	0-90	>250	--	--	PFPE/ polyurea	Main line, HST	Special lubricant for the lubrication of door seals. The grease is extremely resistant to pressure and vacuum, it is compatible with EPDM and silicone seals and offers a very good UV-protection for long-life functionality in door mechanisms.
Connecting bolts, clutches, joint, fittings	Grizzlygrease No. 3	-20 °C up to +150 °C	2	0-90	>280	--	--	Mineral oil/ li-ca-complex	all	Special grease with high pressure stability. It offers extremely high load carrying capacity due to its special high-load additives (EP) and reduces significantly friction at the contact points. It is very resistant to corrosion and ageing.
	Grizzlygrease Bio 1-1000 	-40 °C up to +140 °C	1	0-90	--	>190	--	Synthetic oil/ ca-complex	all	The grease very effectively reduces wear, especially in combination with the lubricator MicroMax 120. It can be applied at all kind of trains and locomotives.
Wheelset bearing	Turmogrease Li 802 EP	-40 °C up to +140°C	2	1-90	>190	--	--	SHC, mineral oil/ li-soap	all	Long-life grease for the lubrication of wheelset bearings to cover all speed and load ranges with only one product. It reduces frictional loads, protects against corrosion and provides continuous lubricity. This bearing grease offers high load carrying capacity and good ageing protection.
	Turmoplex 3 EP	-30 °C up to +140°C	3	1-90	>190	--	--	Mineral oil/ lithium soap	Tram	Oxidation and temperature resistant grease for long-term lubrication of wheel bearings. It is very resistant to water, suitable for low and high speeds, provides good lubricity as well as corrosion protection even in humid environment. This lubricant is easy to apply and particularly suitable for the use in automatic lubricators.
Engine bearing	Turmogrease L 802 EP plus	-35 °C up to +140°C	2-3	0-90	>250	--	--	SHC, min. oil/ li-special soap	all	This grease is extremely corrosion and ageing resistant, it shows good thermal resistance and extends lubrication intervals due to its lubricant-film stability.

\* HST = high-speed trains



Your application is not mentioned?



### Contact us!

Your LUBCON application engineer will help you to choose the right lubricant and provide on-side support!

[www.lubcon.com](http://www.lubcon.com)



# LUBCON® SL 100 Switch Lubricator

## Accurate Lubrication of Switches - Easy and Quick

The switch lubricator **LUBCON SL 100** is designed for fast, accurate and smooth application of high-viscosity lubricating oils on switch blades.

The innovative nozzle design allows the concentrated oil application in wide and narrow areas. A short interruption of the material flow in the nozzle provides an optimum spray effect and a clean and smooth distribution of the lubricant, without clogging the nozzles. As a result, solid-containing lubricants and oils are processed up to 150 mm<sup>2</sup>/s. An integrated display informs the user about the status of the battery.

With a working pressure of 130 bar, it is not only possible to achieve a high cleaning effect, but also a high surface wetting ability in a short time. The handy and compact design offers a quick and easy operation as well as a clean refilling of the lubricant within seconds.



The 75 cm long nozzle extension allows an ergonomic adjustment of the device to any body size. Thus, the lubricator **LUBCON SL 100** is an ideal tool for the maintenance of rail route networks.

The nozzle extension allows a selective application of the lubricant without problems and within short time. Sand, dirt and also tinder are blown away by the powerful cleaning ability of the nozzle, and it leaves a clean and stable lubricating film.



### Advantages:

- ✓ Easy operation within seconds
- ✓ Optimum dosage of the lubricant
- ✓ Accurate lubrication even in areas which are difficult to access
- ✓ Clean and exact handling
- ✓ Individually adjustable
- ✓ Ergonomically designed
- ✓ Portable, lightweight and flexible

### Double Protection against Friction and Wear

Due to diverting energies switches are affected by high loads and vibrations leading to significant wear.

**LUBCON** switch oils of the series **Terrasol SWA** are solids-containing lubricants for the treatment of switch blades, tailored to meet their critical requirements.

Even after longer usage, the specially chosen solid lubricants do not leave any residues but provide optimum surface wetting. In case of a long lubricating interval, emergency running properties provide sufficient lubrication. The lubricating oils of the series **Terrasol SWA** can be applied without prior cleaning, they damp mechanical pressures of the switches and therefore offer outstanding protection against wear.

The switch lubricator **LUBCON SL 100** and the resistant switch oils of the series **Terrasol SWA** allow a reliable and quick maintenance of the switches, which improves their steady function and their safety.

### Technical Data

Applicable lubricants	Processes oil and low-viscosity grease to NLGI 0
Adjustable pressure range	69 – 276 bar/6.9 – 27.6 Mpa (1000 to 4000 psi)
Battery	28 V DC, Lithium-Ion Capacity: 2.4 Ah, 67 Wh
Weight (empty)	3.9 kg (8.6 lb)



## Quick Overview of Lubricant Range for Train, Rail and Wheel

Rail and Wheel:  
Sintono Terra SK-RE Series  
Sintono Terra HLK

Top of Rail/Running Surfaces on Wheels  
Sintono Terra HLK Series

Switches  
Sintono Terra W DB  
Terrasol SWA  
Terrasol 100 WT

Wheelset Bearings  
Turmogrease Li 802 EP  
Turmoplex 3 EP

Engine Bearings  
Turmogrease L 802 EP plus

Door Closing Systems  
Turmogrease SKL Series  
Turmogrease N 182  
Turmogrease PP 300

Pins/Clutches/Hinges  
Grizzlygrease Bio 1-000  
Grizzlygrease No. 3

Discover LUBCON Railway Lubricants  
in a short movie:



### LUBRICANT CONSULT GMBH

Lubricants ▪ Lubrication Systems

Gutenbergstraße 11-13 ▪ 63477 Maintal ▪ GERMANY ▪ P.O. Box 200 240 ▪ 63469 Maintal ▪ GERMANY  
Tel.: +49 6109/7650-0 ▪ Fax: +49 6109/7650-51 ▪ Email: [webmaster@lubcon.com](mailto:webmaster@lubcon.com) ▪ [www.lubcon.com](http://www.lubcon.com)

This brochure contains only general product information. For specific information please refer to our technical data and safety data sheets. The content represents the actual state of development and knowledge of LUBRICANT CONSULT GmbH that can be subject to change without notification. The products mentioned fully comply with the specifications defined by our company, but due to the multitude of different applications and influencing factors, we cannot guarantee suitability for the individual application. To determine the suitability of a lubricant we, therefore, recommend contacting an application engineer and, if necessary, performing individual field tests. Any further liability by LUBRICANT CONSULT GmbH is expressly excluded.