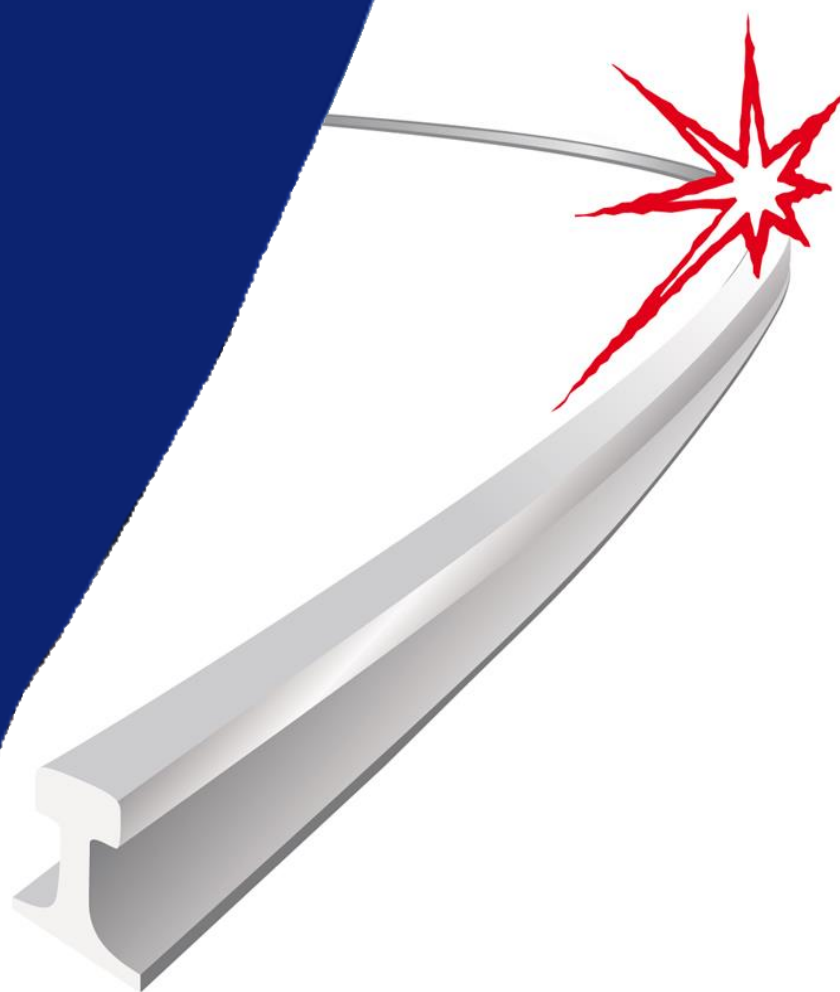
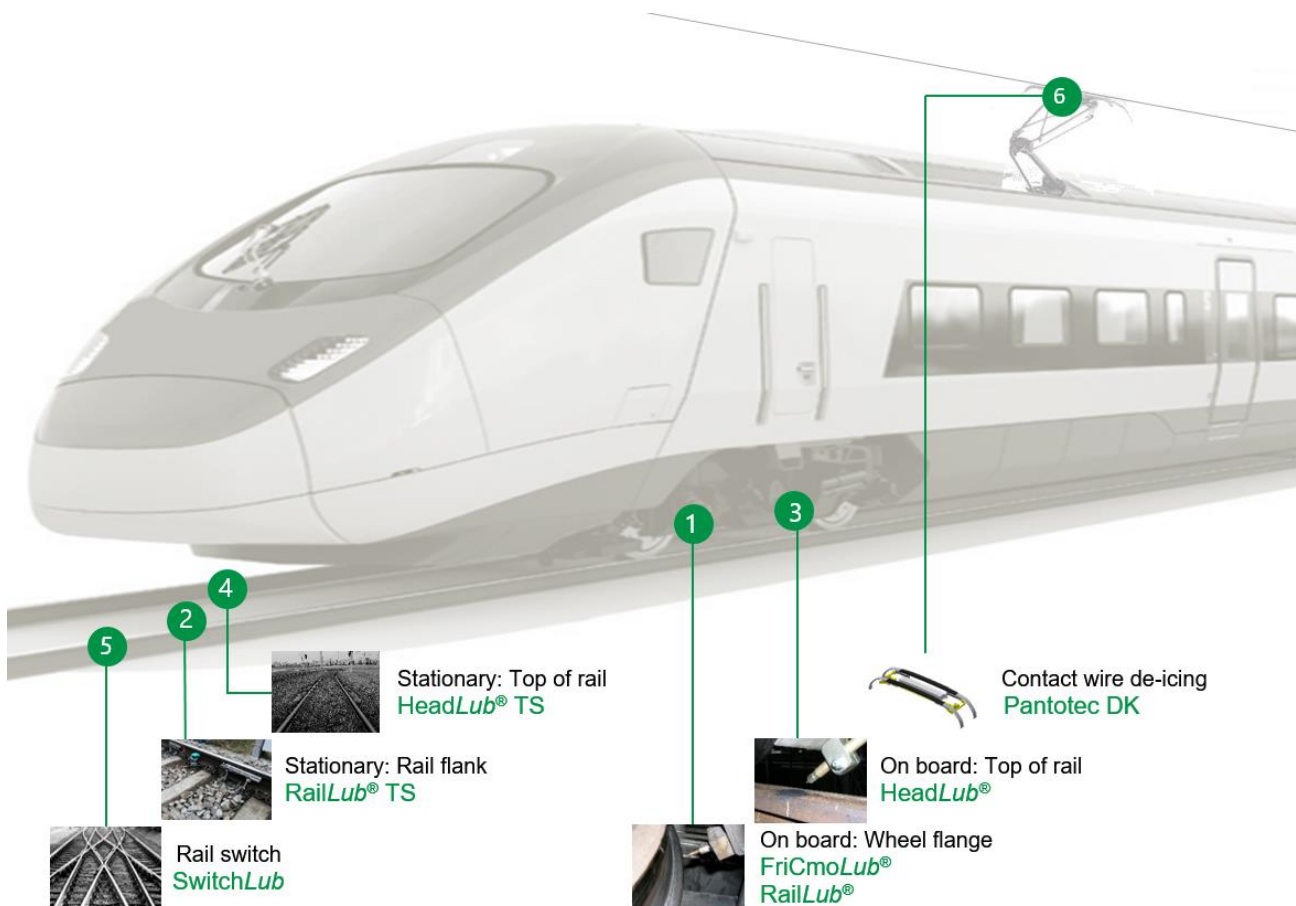


HIGH PERFORMANCE SPECIALTY
LUBRICANTS

for Railway Technology



Rail transport - railroad structures



1 Wheel flange *on-board*

FriCmoLub®



is for use in on-board wheel flange lubricators wherever there is a requirement for a high performance and environmentally friendly products.

- Extends the service life of wheels and rails considerably
- stable grease ensures good fixation
- uniform spray pattern and volume over the entire temperature range
- excellent wear and corrosion protection under extreme pressure conditions and high loads
- successfully tested by device OEMs
- biodegradable – easily degradable in accordance with OECD 301 B (60% in 10 days)

RailLub®

was developed to reduce the roll and sliding friction between wheel flange and rail flanks that occur under extreme pressure stresses during the operation of rail vehicles. Thus, the life cycle can be effectively extended.

- Achieves substantial wear reduction
- low dosing, high performance
- strongly adhesive, no slinging off
- carry-over effect wheel – rail – wheel
- increases safety, reduces derailment risk
- SBB CFF FFS List-No. 913-22-191
- biodegradable – easily degradable in accordance with OECD 301 B

2 Rail flank *stationary*

RailLub® TS

has been tested and approved by well-known users. The consistency was especially designed for these installations. The application is problem-free and with machine filling no air inclusions occur.

- Prevents curve squealing at the rail flanks
- thin film suffices, thanks to extraordinary adhesion
- passing wheels distribute the lubrication film evenly at a length of up to 3000 meters (1.86 miles)
- biodegradable – easily degradable in accordance with OECD 301 B

Rail transport - railroad structures

3 Top of rail *on-board*

HeadLub®

HeadLub Top-of-Rail Conditioner against curve squealing. High-pressure lubricant compound, contains selective, chemically treated solid lubricants which cause a conditioning effect upon the rail.

- Reduces wear and abrasion
- squealing is immediately eliminated
- extraordinary adhesion
- obtains a dry surface coating with depth effect
- obtains a dry surface coating with depth effect
- adheres to a wet rail over prolonged periods
- water repellent, long-term protection



biodegradable – easily degradable according to OECD 301 B

4 Top of rail *stationary*

HeadLub® TS

is a Top-of-Rail Conditioner against curve squealing for stationary installations and consists of synthetic esters, fatty soaps, fatty lubricants and additives. Its properties accelerate the surface smoothing between the top of the rail and the wheel surface.

- reduces wear and abrasion to a minimum
- the unpleasant squealing is immediately eliminated
- a very thin application offers long-term protection due to excellent adhesion
- achieves dry surface coating with depth effect, which adheres longer to the wet rails and acts water repellent
- the passing wheels distribute the film evenly at a length of up to 1000 meters (0.62 miles)



biodegradable – easily degradable according to OECD 301 B

5 Switch Point

SwitchLub

ist eine Kombination aus chemisch behandelten Festschmierstoffen und einem lösungsmittelfreien, synthetischen Trägermittel. Es wurde entwickelt um die sensibelsten Teile der Geleise, die Weichen, zu schützen.

- Vermindert die auftretende Gleitreibung
- reduziert den Verschleiss aussergewöhnlich
- schon bei geringer Dosierung bildet sich ein stark haftender Schmier- und Trennfilm zwischen den Reibpartien
- reduziert die Nachschmierung wesentlich
- bietet hervorragenden Korrosionsschutz
- gleichbleibende Funktion von -40°C bis +550°C garantiert
- verhindert Vereisungen und kann bis -25°C appliziert werden
- ist bei extremer Druck- und Wärmebelastung über einen langen Zeitraum beständig
- garantiert eine konstante Schmierung



biodegradable – easily degradable according to OECD 301 B

SwitchLub 60/35

Langzeitschmierstoff für Gleitstuhlplatten von Eisenbahnweichen. erfüllt die neusten biologischen Anforderungen. Es reduziert die Reibung auf den Weichenplatten und ermöglicht lange Nachschmierintervalle.

Vorteile:

Nachdem Aufbringen erzeugt das rasch bioabbaubare SwitchLub einen gut haftenden und wasserresistenten Schmierfilm. Das Produkt hat sehr gute UV Resistenz und verharzt nicht. Der weite Temperaturbereich ermöglicht auch in kälteren Regionen einen ganzjährigen Einsatz.

Anwendung:

Das Produkt kann entweder mit einem Rückenspritzgerät aufgesprüht oder mit einem Pinsel appliziert werden. Typische Nachschmierintervalle betragen 1-2 Monate abhängig von der Anzahl Weichenbewegungen. Verhindert während der Winterzeit funktionsstörende Vereisungen und kann bis -30°C appliziert werden.



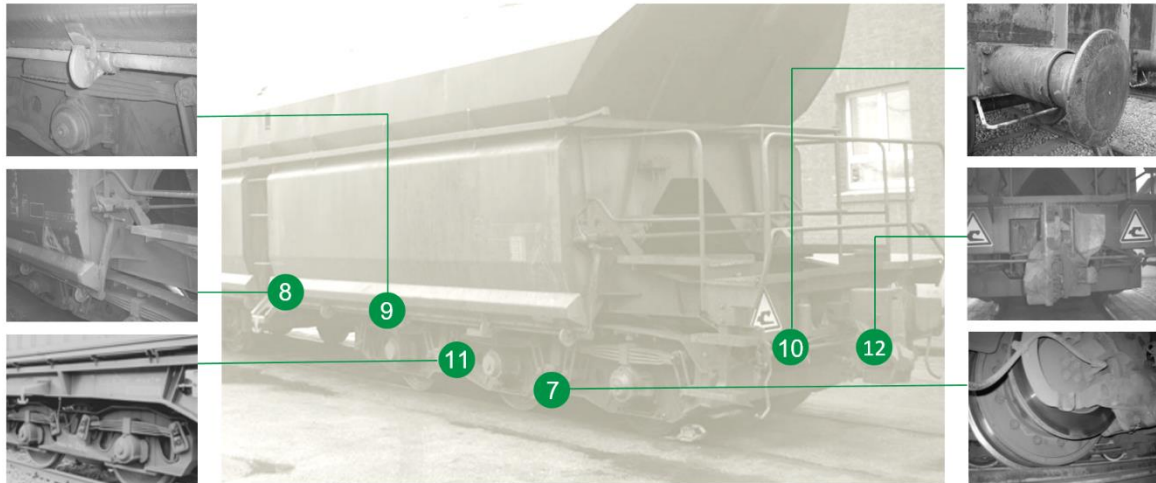
biodegradable – easily degradable according to OECD 301 B (60% in 10 days)

6 Contact Wire De-icing

Pantotec DK

During the winter months, prevents icing of the contact wire of trolley buses, Trams and other rail vehicles with overhead wire.

- Mixture of glycols, polymers and additives
- no resin formation at the contact wire
- very high adhesion and sticks to the contact wire in dry weather for several days
- can be mixed with water
- environmentally friendly
- upon heavy rain or snowfall the process has to be repeated
- can be sprayed on accurately over a contact wire de-icing structure upon request,
- IGRALUB offers suitable systems.



7 Disk brakes eliminate squeaking


8 Valve activation mechanism

9 Thumbs waves stock agency

PasteLub® 10/12

Separating and lubrication agent on metallic basis developed according to the most recent findings in tribology.

- 🌿 Effective at temperatures from -180° to +1300°C
- 🌿 anti-oxidation additive with wear reducing and corrosion preventing inhibitors
- 🌿 excellent long-term protection against seizing
- 🌿 resistant against moisture, spray and salt water
- 🌿 protects against corrosion and is water repellent
- 🌿 pressure-resistant, strongly adhesive, does not gum up
- 🌿 eliminates squealing, noise dampening
- 🌿 increases sealing effect
- 🌿 prevents freezing, seizing and fusing.

 Substance Number: SAP 744 132

 biologisch Abbaubar – leicht abbaubar nach OECD 301 B


10 Buffer

12 Clutch

PasteLub® R

Consists of synthetic esters, polymers, solid lubricants and additives.

- 🌿 reduces occurring friction losses at extreme pressure stresses
- 🌿 substantially reduces material wear
- 🌿 excellent long-term protection against seizing and corrosion
- 🌿 very suitable for buffers and rolling mill pins
- 🌿 free of lead, chlorine, sulphur, phosphor, mineral oil and canola oil
- 🌿 solid lubricant share > 25%
- 🌿 thin application forms a insoluble lubricant film
- 🌿 extremely strong adhering on buffer plates
- 🌿 economical in consumption
- 🌿 film is not washable in a washing facility.


 Substance Number: SAP 954 065

11 Prevention of bearing spring fractures

HT PU 680

High temperature lubrication fat with synergetic acting EP-supplements.

- 🌿 excellent pressure absorption capacity
- 🌿 water-proof
- 🌿 strong adhesion
- 🌿 corrosion protection
- 🌿 high oxidation stability
- 🌿 aging-resistant
- 🌿 increased pressure resistance <350 bar
- 🌿 good sealing effect
- 🌿 resistant against aggressive media
- 🌿 special use at the Railroad for spring bolt lubrication and corrosion protection.

 Substance Number: SAP 815 846

All data and values correspond to the current state of knowledge and are for guidance only, subject to change without notice.