Speciality lubricants for
food processing technology

www.oks-germany.com

BECAUSE OF YOUR RESPONSIBILITY TO PEOPLE.

Speciality Lubricants
Maintenance Products

SPECIALITY LUBRICANTS
FOR YOUR SAFETY

Intelligent lubricant technology from OKS. For all industries related to food processing.

OKS lubricants for food processing technology can be used in all areas in which human beings could come into indirect contact with lubricants. This goes far beyond the food processing and beverage industry. Typical users include:

- Manufacturers of food packaging
- Machine and system builders for the food processing industry
- Operators of logistics centres for foodstuffs
- Producers of household appliances like baking ovens, refrigerators etc.
- Manufacturers of household products
- Toy industry
- Pharmaceuticals industry

With OKS Speciality Lubricants you're on the safe side. There is currently no binding European or international legislation for lubricants approved for use in the food processing industry. As a result, in food processing technology and related areas, it is primarily the US regulations, which are the world's strictest, that are utilised.

Positive list of the FDA (Food and Drug Administration). This list recognised around the world contains all ingredients permissible in lubricants approved for use in food processing. All lubricants tested by the NSF (National Sanitation Foundation) are published in the white book of the NSF based on this list. You can find the list of these lubricants at www.nsf.org in the chapter entitled "Nonfood Compounds Listings Directory", arranged by company name.

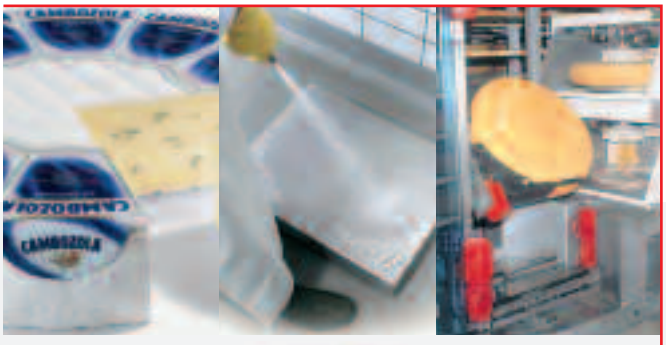
The classification NSF H1 stands for lubricants which may be used when contact with food cannot be technically excluded.

The lubricants that may be used when contact with food is technically excluded are summarised **under NSF H2**.

EC Directive 93/43/EEC (from 14.6.93). This directive requires food processing plants to use the HACCP (Hazard Analysis Critical Control Point) method. This preventative system ensures that every contamination-relevant step in the manufacturing process of a foodstuff can be identified and monitored. Even if this directive contains no regulations with regard to the ingredients of lubricants approved for use in food processing, the HACCP method covers the handling of lubricants in food processing technology.

By using OKS Speciality Lubricants for food processing technology, you ensure compliance with national and international regulations – because of your responsibility to people.

LEADING BRANDS RELY ON OKS



1 2 3

1 Champignon cheese dairy, Hofmeister GmbH & Co. KG
2 Weighing systems from METTLER-TOLEDO
3 Specialty machines from LEU Anlagenbau AG
***Cover photo** KRONES AG*
We would like to express our thanks for the kind permission to use these photos.

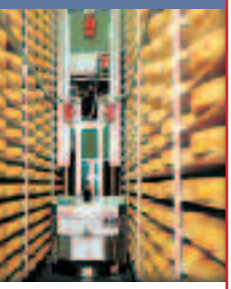
Convince yourself based on practical experience reports on the use of OKS speciality lubricants.

Specialities from the Allgäu region (1)
Since 1909 the logo with the three button mushrooms (champignons) has stood for high-quality dairy products. Today the Hofmeister corporate group is one of the leading suppliers of milk and cheese specialities - both in Germany and internationally. Familiar brands like Cambozola, Rougette and Champignon Camembert stand for the success of the Champignon cheese dairy.
A decisive factor in this success is also the orientation toward the strictest hygiene standards. The use of gear oils in production – like OKS 3720, OKS 3730 und OKS 3740 – ensures compliance with all hygiene standards.

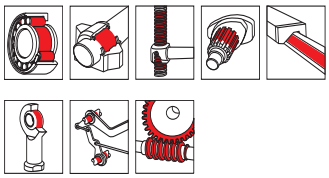
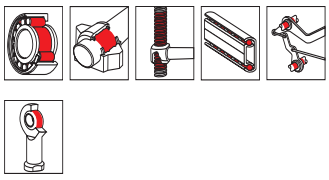
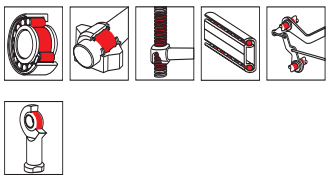
Precision under the toughest everyday conditions (2)
Highly sensitive weighing technology and precision electronics, packaged in rugged industrial hardware - these are the weighing systems from METTLER-TOLEDO. Systems that weigh precisely and reliably, despite extreme working conditions like high moisture levels and temperature fluctuations.
Due to these environmental influences, METTLER protects its products from harmful corrosion – with OKS 370. Thanks to the excellent capillary property of the oil, even poorly accessible areas are shielded from jet water and high-pressure steam. At the same time, cleaning with OKS 370 renews the protective film.

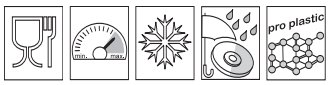
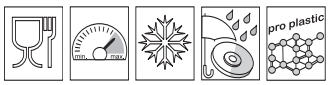
Systems and speciality machines for cheese production and care (3)
"We perfect with high-tech engineering, what nature has entrusted us with", is the motto of the Swiss company LEU Anlagenbau AG. In the process, the specialist for cheese care robots, cleaning machines, conveyor systems and special designs always has the extremely difficult external conditions of its customers in mind. Because salty air, sensitive cultures and high humidity place very special technical and hygienic demands on machines and lubricants during cheese storage and care. OKS 3751 has proven itself here for the lubrication of chains and guides for many years now.

GREASES FOR FOOD PROCESSING TECHNOLOGY



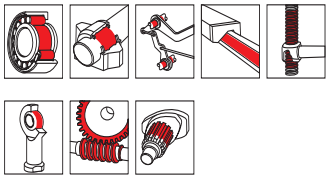
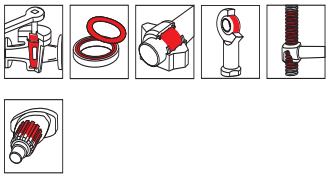
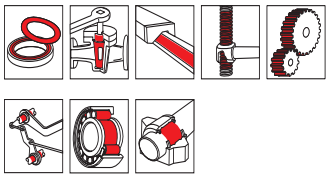
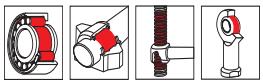
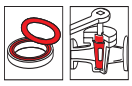
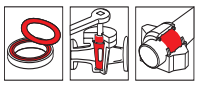
Greases

Product	Designation	Fields of Application	Purpose
OKS 4220	Extreme-temperature bearing grease **DIN 51 502: KFFK2U-20**		For highest temperatures, aggressive media, critical plastics and elastomers.
OKS 468	Plastic and elastomer lubricant **DIN 51 502: MHC1-2N-20**		Highly adhesive lubricating and sealing grease with good compatibility to elastomers and plastics. EPDM-compatible. Does not affect the quality properties of beer foam.
OKS 469	Plastic and elastomer lubricant **DIN 51 502: MHC2N-20**		Highly adhesive lubricating and sealing grease with good compatibility to elastomers and plastics. Does not affect the quality properties of beer foam.
OKS 470	White universal high-performance grease (also for food processing technology) **DIN 51 502: KF2K-30**		Lubrication of heavily loaded plain, roller and pivoting bearings, spindles and guides.
OKS 472	Low-temperature grease for food processing technology **DIN 51 502: KHC1K-40**		Lubrication of roller and plain bearings with minimal bearing play and high speeds, at low temperatures and low coasting torques.
OKS 475	High-performance grease (also for food processing technology) **DIN 51 502: KFHC2N-50**		For roller and plain bearings with minimal bearing play and high speeds, at low and high temperatures and for bearings with low coasting torque. Good compatibility to plastics.

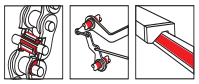
Properties / Approvals	Main components	Technical Data	Packaging
 NSF H1 Reg. No. 124380	white/ PFPE, PTFE	Temp. range: -20°C → +280°C NLGI grade: 2 DN factor (d_m x n): 300.000 mm/min Base oil viscosity (40°C): 500 mm²/s Four-ball test rig (welding load): > 10.000 N	100 g tube 500 g tin 800 g cartridge 1 kg tin 5 kg hobbock 25 kg hobbock
 NSF H1 Reg. No. 135591 Beer foam	light-coloured/ PAO, inorganic thickener	Temp. range: -25°C → +150°C NLGI grade: 2 DN factor: not applicable Base oil viscosity (40°C): 1.500 mm²/s Four-ball test rig: not applicable	1 kg tin 5 kg hobbock 25 kg hobbock 180 kg drum
 NSF H1 Reg. No. 131380 Beer foam	colourless-transparent/ PAO, inorganic thickener,	Temp. range: -25°C → +150°C NLGI grade: 2 DN factor: not applicable Base oil viscosity (40°C): 400 mm²/s Four-ball test rig: not applicable	1 kg tin 5 kg hobbock 25 kg hobbock
 NSF H2 Reg. No. 137707	light-coloured/ white oil, lithium soap, white solid lubricants	Temp. range: -30°C → +120°C NLGI grade: 2 DN factor (d_m x n): 300.000 mm/min Base oil viscosity (40°C): 108 mm²/s Four-ball test rig (welding load): 3.800 N	100 g tube 400 g cartridge 1 kg tin 5 kg hobbock 25 kg hobbock 180 kg drum
 NSF H1 Reg. No. 135749	whitish/ PAO, aluminium-complex soap	Temp. range: -70°C/-40°C → +120°C NLGI grade: 1 DN factor (d_m x n): 800.000 mm/min Base oil viscosity (40°C): 30 mm²/s Four-ball test rig: not applicable	400 g cartridge 1 kg tin 5 kg hobbock 25 kg hobbock 180 kg drum
 NSF H2 Reg. No. 137708	light-coloured/ PAO, lithium soap, PTFE	Temp. range: -50°C → +140°C NLGI grade: 2 DN factor (d_m x n): 1.000.000 mm/min Base oil viscosity (40°C): 35 mm²/s Four-ball test rig (welding load): 1.700 N	400 g cartridge 1 kg tin 5 kg hobbock 25 kg hobbock 180 kg drum

GREASES AND DRY LUBRICANTS FOR FOOD PROCESSING TECHNOLOGY

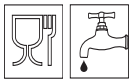
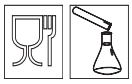
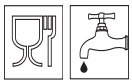
Greases

Product	Designation	Fields of Application	Purpose
OKS 476	Multipurpose grease for food processing technology **DIN 51 502: KF2K-20**		Roller bearing grease for universal use.
OKS 477	Valve grease for food processing technology **DIN 51 502: MHC3N-10**		Sealing lubrication of adapted sliding surfaces. Maintenance lubrication of plastics and elastomers. Lubrication of slow-running roller and plain bearings. Can be pasteurised and sterilised. Does not affect the quality properties of beer foam.
OKS 478	Adherent grease for food processing technology **DIN 51 502: K2N-20**		Highly adhesive grease for lubricating roller and plain bearings and many other mechanisms.
OKS 479	High-temperature grease for food processing technology ChronoLube System **DIN 51 502: KPFHC1P-20**		Lubrication of roller and plain bearings subjected to increased temperatures.
OKS 1110	Multi-silicone grease, physiologically harmless **DIN 51 502: MSI3S-40**		Sealant and lubricant for valves, gaskets, O-rings and rubber seals for assembly and during operation. Lubrication of plastic parts.
OKS 1120	Hot and cold-water fitting grease **DIN 51 502: MFSI3P-50**		Sealant and lubricant for valves, gaskets, O-rings and rubber seals for assembly and during operation. Lubrication of plastic parts. Sealing of tap cocks, fittings.

Dry Lubricants

Product	Designation	Fields of Application	Purpose
OKS 536	Graphite bonded coating, water-based, air-drying		Lubrication of heavily loaded chains in temperature ranges in which oil and grease lubrication is no longer possible. Can be diluted in a ratio of up to 1 : 5 with water.

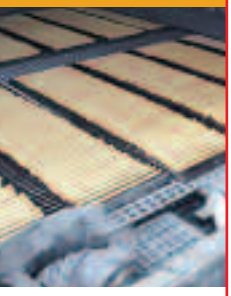
Greases

Properties / Approvals	Main components	Technical Data	Packaging
 NSF H1 Reg. No. 137619	light-coloured/ white oil, aluminium-complex soap, white solid lubricants	Temp. range: -20°C → +120°C NLGI grade: 2 DN factor (d_m x n): 400.000 mm/min Base oil viscosity (40°C): 67 mm²/s Four-ball test rig (welding load): 2.200 N	400 g cartridge 1 kg tin 5 kg hobbock 25 kg hobbock 180 kg drum
 NSF H1 Reg. No. 135750 Beer foam as per DVGW DIN EN 377 as per KTW/NSF 61/WRC	light-coloured/ PAO, bentonite	Temp. range: -10°C → +140°C NLGI grade: 3 DN factor: not applicable Base oil viscosity (40°C): 1.600 mm²/s Four-ball test rig: not applicable	100 g tube 1 kg tin 5 kg hobbock 25 kg hobbock
 NSF H1 Reg. No. 129960	light-coloured/ white oil, aluminium-complex soap, adhesive additives	Temp. range: -20°C → +150°C NLGI grade: 2 DN factor (d_m x n): 500.000 mm/min Base oil viscosity (40°C): 67 mm²/s	1 kg tin 5 kg hobbock 25 kg hobbock 180 kg drum
 NSF H1 Reg. No. 135675	light-coloured/ PAO, aluminium-complex soap	Temp. range: -25°C → +160°C NLGI grade: 1 DN factor (d_m x n): 350.000 mm/min Base oil viscosity (40°C): 400 mm²/s Four-ball test rig (welding load): 2.200 N	120 cm³ CL-cartridge 400 g cartridge 1 kg tin 5 kg hobbock 25 kg hobbock 180 kg drum
 NSF H1 Reg. No. 124381 Beer foam; KTW seals D2 DVGW DIN EN 377 Reg. No. NG-5162BL0482	transparent/ silicone oil, inorganic thickener	Temp. range: -40°C → +200°C NLGI grade: 3 DN factor: not applicable Base oil viscosity (40°C): 9.500 mm²/s Four-ball test rig: not applicable	10 g tube 100 g tube 400 g cartridge 500 g tin 5 kg hobbock 25 kg hobbock 180 kg drum
 NSF H1 Reg. No. 135751 as per NSF 51 as per NSF 61	white/ silicone oil, inorganic thickener	Temp. range: -50°C → +150°C NLGI grade: 3 DN factor: not applicable Base oil viscosity (40°C): 1.000 mm²/s Four-ball test rig: not applicable	1 kg tin 5 kg hobbock 25 kg hobbock

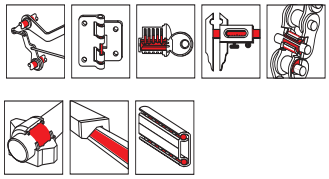
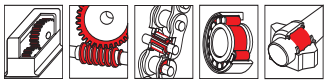
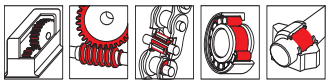
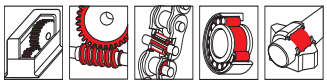
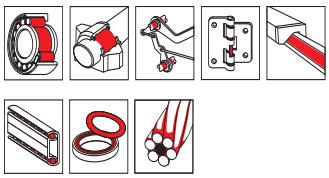
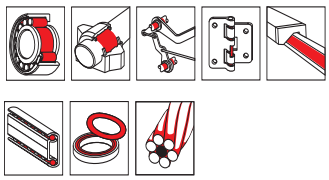
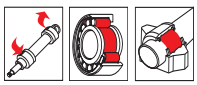
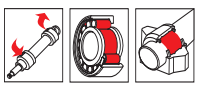
Dry Lubricants

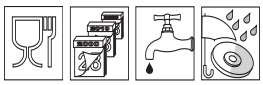
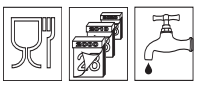
Properties / Approvals	Main components	Technical Data	Packaging
 NSF H2 Reg. No. 130416	black/ graphite, organic binder, water	Temp. range: -35°C → +600°C Press-fit test: μ = 0,12, no chatter Thread friction coefficient: μ = 0,08	5 kg canister 25 kg canister

OILS FOR FOOD PROCESSING TECHNOLOGY



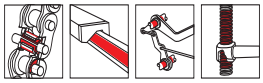
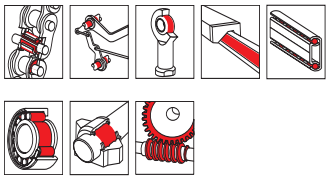
Oils

Product	Designation	Fields of Application	Purpose
OKS 370 **OKS 371***	Multipurpose oil for food processing technology **ISO VG 15** **DIN 51 502: CL 15**		Low-viscosity, colourless oil with good lubricating properties. Broad range of uses.
OKS 3720	Gear oil for food processing technology **ISO VG 220** **DIN 51 502: CLP HC 220**		Fully synthetic gear oil. Also for lubricating chains and other mechanisms.
OKS 3730	Gear oil for food processing technology **ISO VG 460** **DIN 51 502: CLP HC 460**		Fully synthetic gear oil. Also for lubricating chains and other mechanisms.
OKS 3740	Gear oil for food processing technology **ISO VG 680** **DIN 51 502: CLP HC 680**		Fully synthetic gear oil. Also for lubricating chains and other mechanisms.
OKS 3750 **OKS 3751***	Adhesive lubricant with PTFE **ISO VG 100** **DIN 51 502: CLF HC 100**		Lubricating oil with good adhesive properties and PTFE for chains, guides and other mechanisms.
OKS 3760	Multipurpose oil for food processing technology ChronoLube System **ISO VG 100** **DIN 51 502: CL HC 100**		Fully synthetic, lubricating oil for universal use.
OKS 3770	Hydraulic oil for food processing technology **ISO VG 46** **DIN 51 502: HLP HC 46**		Fully synthetic hydraulic oil. Also as low-viscosity machine oil for general use.
OKS 3780	Hydraulic oil for food processing technology **ISO VG 68** **DIN 51 502: HLP HC 68**		Fully synthetic hydraulic oil. Also as low-viscosity machine oil for general use.

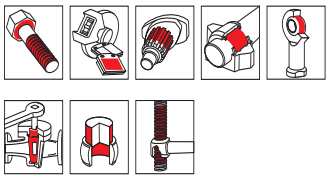
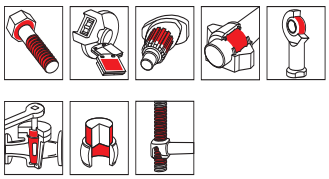
Properties / Approvals	Main components	Technical Data	Packaging
 NSF H1 Reg. No. 124382 NSF H1 Reg. No. 124384*	colourless/ white oil	Temp. range: -10°C → +180°C Density: ρ = 0,86 g/ml Viscosity (40°C): 14 mm²/s	100 ml pump spray 5 l canister 25 l canister 200 l drum 500 ml aerosol*
 NSF H1 Reg. No. 135752	light-coloured/ PAO	Temp. range: -30°C → +120°C Density: ρ = 0,85 g/ml Viscosity (40°C): 209 mm²/s FZG gear-test rig: scuff load >12	5 l canister 25 l canister 200 l drum
 NSF H1 Reg. No. 135753	light-coloured/ PAO	Temp. range: -30°C → +120°C Density: ρ = 0,86 g/ml Viscosity (40°C): 460 mm²/s FZG gear-test rig: scuff load >12	5 l canister 25 l canister 200 l drum
 NSF H1 Reg. No. 135754	light-coloured/ PAO	Temp. range: -30°C → +120°C Density: ρ = 0,85 g/ml Viscosity (40°C): 680 mm²/s FZG gear-test rig: scuff load >12	5 l canister 25 l canister 200 l drum
 NSF H1 Reg. No. 124383 NSF H1 Reg. No. 124801*	whitish/ PAO, PTFE, adhesive additives	Temp. range: -35°C → +135°C Density: ρ = 0,87 g/ml Viscosity (40°C): 100 mm²/s Four-ball test rig (welding load): 2.600 N	5 l canister 25 l canister 200 l drum 500 ml aerosol*
 NSF H1 Reg. No. 129964	colourless/ PAO	Temp. range: -35°C → +135°C Density: ρ = 0,84 g/ml Viscosity (40°C): 100 mm²/s	120 cm³ CL-cartridge 5 l canister 25 l canister 200 l drum
 NSF H1 Reg. No. 129962	light-coloured/ PAO	Temp. range: -40°C → +135°C Density: ρ = 0,84 g/ml Viscosity (40°C): 50 mm²/s	5 l canister 25 l canister 200 l drum
 NSF H1 Reg. No. 136036	light-coloured/ PAO	Temp. range: -40°C → +135°C Density: ρ = 0,85 g/ml Viscosity (40°C): 68 mm²/s	5 l canister 25 l canister 200 l drum

OILS, PASTES AND MAINTENANCE PRODUCTS FOR FOOD PROCESSING TECHNOLOGY

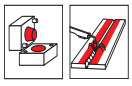
Oils

Product	Designation	Fields of Application	Purpose
OKS 3790	Fully synthetic sugar-dissolving oil		Cleaning of soiling, softening and removal of sugar deposits in the sweets industry. Lubrication of precision mechanisms. Forming lubricant for packaging.
OKS 387	High-temperature chain lubricant for food processing technology		Fully synthetic chain lubricant for high temperatures and loads. Base oil that evaporates odourlessly and residue-free above +200°C. Dry lubrication up to +600°C. Suitable for central lubricating systems.

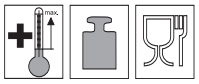
Pastes

Product	Designation	Fields of Application	Purpose
OKS 250	White all-round paste, metal-free		Lubrication of heavily loaded sliding surfaces at low speeds or oscillating movements. Separation of connections subject to heavy thermal loading. Excellent corrosion protection.
OKS 252	White high-temperature paste for food processing technology		Lubrication of heavily loaded sliding surfaces at low speeds or oscillating movements which may have direct contact with foodstuffs. Separation of connections subject to heavy thermal loading.

Maintenance products

Product	Designation	Fields of Application	Purpose
OKS 1361	Silicon release agent, aerosol		Release agent and lubricating film with excellent surface wetting and antistatic properties. Mounting aid for threading in profiles. Lubricant for cutting edges. Care and impregnating agent.
OKS 2650	BIOlogic industrial cleaner, water-based concentrate		Solvent-free cleaner for removing heavy oily, greasy and sooty soiling. Biodegradable, with good separation behaviour. Can be diluted with water in a ratio of from 1:5 to 1:40. Suitable for use in high-pressure devices.

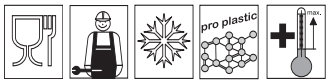
Oils

Properties / Approvals	Main components	Technical Data	Packaging
 NSF H1 Reg. No. 128470	colourless-clear/ water, glycol	Temp. range: -5°C → +80°C Density: ρ = 1,05 g/ml Viscosity (40°C): 10 -14 mm²/s	5 l canister 25 l canister
 NSF H1 Reg. No. 126583	black/ polyglycol, graphite	Temp. range: +200°C → +650°C Density: ρ = 1,04 g/ml Viscosity (40°C): 190 mm²/s	5 l canister 25 l canister

Pastes

Properties / Approvals	Main components	Technical Data	Packaging
 NSF H2 Reg. No. 131379	white/ Mo_x-Active, polyurea, white solid lubricants	Temp. range: -40°C → +200°C/+1.400°C Press-fit: μ = 0,08, no chatter Four-ball test rig (welding load): 4.000 N Thread friction: μ = 0,10	10 g tube 100 g tube 250 g brush tin 1 kg tin 5 kg hobbock 25 kg hobbock
 NSF H1 Reg. No. 135748	white/ polyglycol, silicate, white solid lubricants	Temp. range: -40°C → +160°C/+1.200°C Press-fit: μ = 0,12, no chatter Four-ball test rig (welding load): > 2.500 N Thread friction: μ = 0,14	250 g brush tin 1 kg tin 5 kg hobbock 25 kg hobbock

Maintenance products

Properties / Approvals	Main components	Technical Data	Packaging
 NSF H1 Reg. No. 129481	light-coloured/ silicone oil	Temp. range: -50°C → +200°C Viscosity (25°C): 350 mm²/s	500 ml aerosol
 NSF A1 Reg. No. 129003 LGA Quality Certificate	reddish/ water, tensides		5 l canister 25 l canister 200 l drum

SELECTION GUIDE

Fields of Application

- Valves
- Brakes
- Seals
- Wire ropes
- Precision mechanics
- Ball bearings
- Enclosed gears
- Threaded connections
- Slideways
- Plain bearings
- Levers
- Hydraulics
- Splined shafts
- Chains
- Linear guide systems
- Measuring devices
- Open gears
- Press fittings
- Cleaning
- Hinges
- Worm gears
- Spindles
- Mould release
- Weld release
- Roller bearings

Properties

- Sprayable with airspray system
- Workplace-friendly
- Effect of chemicals
- Heavy load
- High speed
- High temperatures
- Corrosion protection
- Compatible with plastics
- Long-term effective
- For food processing technology
- Low temperatures
- Environmentally friendly
- Humid conditions

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Pastes

Oils

Greases

Dry Lubricants

Corrosion Protection

Maintenance Products

NEW

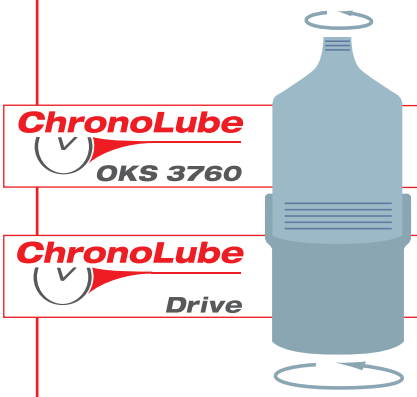
AUTOMATIC RELUBRICATION

ChronoLube is the ideal combination of OKS speciality lubricants with an electromechanical lubricator. This enables the automatic supply of lubricating points with oil and grease. And that in the dosage you require and at the right time – without under or over-lubrication.

Simply install the ChronoLube Drive together with the suitable ChronoLube Cartridge at the lubricating point and set the dispensing time (1/3/6/12 months) in accordance with your requirements.

For food processing applications, the ChronoLube System is available in combination with the OKS 3760 and OKS 479. Additional food processing lubricants in the ChronoLube System are available on request.

ChronoLube System



Simple installation at the lubricating point

ChronoLube OKS 3760

Speciality lubricants from OKS

ChronoLube Drive

Battery-powered drive

ChronoLube Cartridge easily replaceable by screwing drive unit on and off

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How to change from conventional lubricant to lubricant approved for use in food processing.

We recommend changing over during a regular service shut-down. When doing so, it must be ensured that the new lubricant is compatible with the old one. All parts to be lubricated must be cleaned and checked for residue-free cleanliness. A cleaner approved for use with food processing technology is suitable for cleaning (e.g. OKS 2650 with NSF A1 registration) or a residue-free evaporating cleaner. The limits required for the respective system must be defined at critical inspection points in accordance with the HACCP method.

Change with oil lubrication

The oil should be at operating temperature during draining if possible. After the oil has been drained, experience shows that used oil, wear particles and oxidation products amounting to approx. 10 % of the filling capacity remain in the system. Then the system should be thoroughly cleaned. Special attention should be paid to tanks, central lubricating circuits, gearboxes etc. Then the corresponding operating oil is poured in and the system is operated at normal working temperature. To reduce contamination of the NSF H1-registered new lubricant, it is advisable to use a cleaning oil.

Change with grease lubrication

Following cleaning, the system is filled with the required quantity of the corresponding OKS grease. Should it not be possible to dismantle and clean the system, relubrication can also be carried out with the new grease. Then the regreasing interval must be shortened in comparison to the usual regreasing period to press out the old grease. Please make sure the bearings are not overfilled and that the used grease can be channelled off.

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