OKS®

Speciality lubricants for the *bakery industry*

www.oks-germany.com

CERTIFIED PRODUCTS

FOR MAXIMAL CONSUMER SAFETY

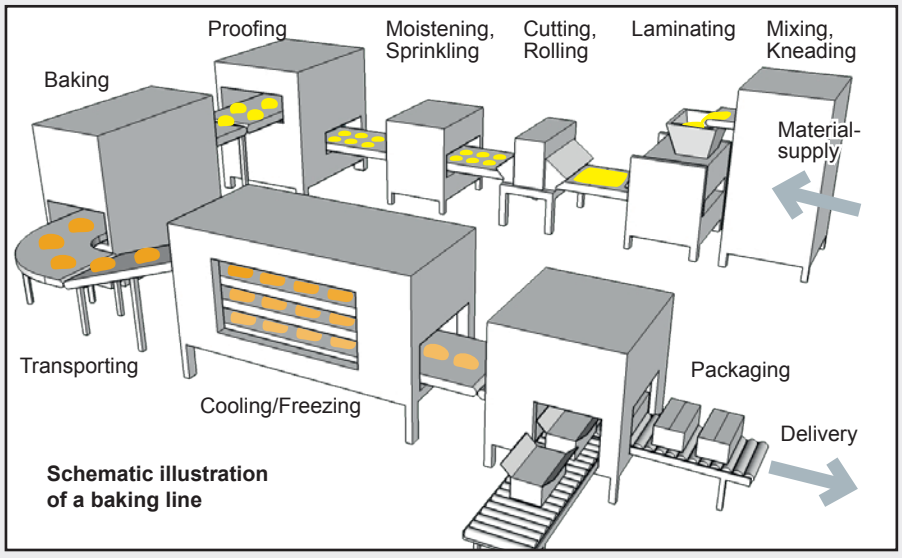
Speciality Lubricants
Maintenance Products

Consumer safety and process reliability through certified high-performance lubricants

The industrial mass production of baked goods places highest demands both on the internal company process operations and on the production plants of modern industrial bakeries. Stable operation in 24-hour 7-day mode, extreme production conditions, strict hygiene standards and brief cleaning and maintenance periods are the main challenges for machines and plants in baking industry production sites.

Production process in industrial bakeries

In view of the systematic process workflows in modern industrial bakeries these are mostly automated to a high degree. Conveyor and roller belts and other transporting devices transport raw materials, dough, semi-finished and finished baked goods automatically between the individual production stages within the baking plant. This means that such production plants often have mechanical components such as chains, roller bearings and sliding bearings in addition to such classical plant components such as pumps, gears, blowers, air compressors and hydraulic systems.



Schematic illustration of a baking line

Lubricants for industrial bakeries

Speciality lubricants tailored especially to these components and applications, which do not only fulfil the technical demands but also the statutory requirements for lubricants for the food processing industry, contribute decisively to an efficient production workflow during the production of baked goods.

High humidity and dust levels, very high and very low operating temperatures stress the production plants in daily operation. Therefore reliable lubrication of all the moving mechanical parts is indispensable in these plants in particular in order to avoid wear and corrosion.

A lack of lubrication or insufficient lubrication results not only in unplanned standstill of the plants and sudden production breakdowns, but through higher wear, energy consumption and maintenance requirements in higher production costs as well.

In addition, the baked goods should not contain any lubricant residues, e.g. through dripping lubricating points. In the case of unforeseen contact with the food, it has to be ensured that only physiologically harmless lubricants are used in the production and further processing of foods.

SPECIALITY LUBRICANTS FOR MAXIMUM REQUIREMENTS

Physiologically harmless lubricants
In accordance with **ISO 21469** the most important criterion for the selection of lubricants to be used in food producing and processing companies is the approval of the lubricant by the American NSF (National Sanitation Foundation).

NSF H1 certified lubricants may be used when contact with food cannot be excluded in the event of failure. **NSF H2** lubricants may be used when contact with food is technically excluded.

Technical selection criteria
The further selection depends on the type of machine components and plants to be lubricated and the operating and ambient conditions arising such as the operating temperatures, throughput speeds, moisture, humidity and dust influences.

Because of the high demands particularly in the temperature operating range and under consideration of the physiological harmlessness, lubricants for food processing technology are often based on high-quality synthetic base oils that were adapted to the special application field with special additives.

Optimal cleaning of machines and plant components
As a rule, cleaning is carried out dry in production areas with flour and at plants sensitive to water such as ovens. By contrast, wet cleaning is carried in highly soiled production areas with dough caking, grease and coating residues, as well as at watertight machines and plants.

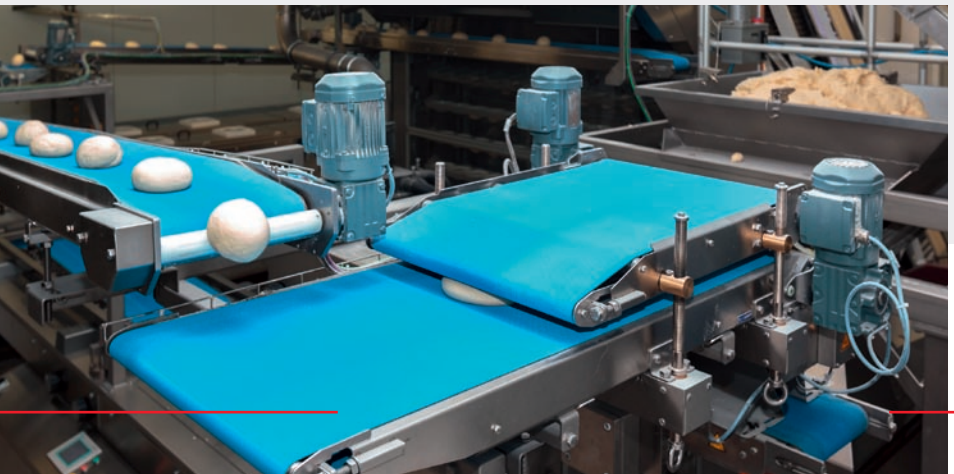
Cleaning agents for use in food processing are subject to the approval criteria of **NSF A1**. Cleaning agents containing solvents which are to be used outside the production area for food, for example in the context of maintenance and servicing work, are certified in accordance with **NSF K1** or **NSF K3** respectively.

OKS speciality lubricants for food processing technology
OKS provides of the right speciality lubricants for operation of your plants in compliance with regulations for all fields of application in the food processing technology.

OKS speciality lubricants, chemo-technical maintenance products and cleaning agents contribute towards increasing your process reliability, avoiding downtimes and increasing the efficiency of your machines and plants.

The enclosed selection table provides a selection of NSF H1 and H2 lubricants and NSF A1 and K1/K3 cleaning agents for use in the bakery industry.

In order to achieve the maximum of process reliability and thus consumer safety no other field of lubrication is as strongly regulated by law as the use of operating and auxiliary materials in the production and processing of foods.



Our Technical Service team is available to answer any further questions you may have on the subject of lubricants for the food processing industry.

www.oks-germany.com

Over 150 high-performance products from one supplier

OKS – Quality made in Germany

The OKS brand stands for high-performance products for reducing friction, wear and corrosion. The success of OKS, which has continued uninterrupted for over 35 years, is decisively shaped by the high quality and reliability of our products developed and produced by experience experts at our headquarters in Maisach near Munich with modern testing systems and equipment.

OKS – your professional partner

Our high tribologic expertise, our comprehensive technical service, smooth availability and our innovative solutions for specific lubricant requirements make us a preferred partner to demanding customers all over the world.

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OKS SPECIALITY LUBRICANTS FOR THE BAKERY INDUSTRY

Lubrication	Fields of application	Products for food processing technology	NSF	Main components	Technical data
Screws	Assembly of machinery equipment	**White High-Temperature Paste for FP Technology OKS 252**	• H1 Reg. No. 135748	• light grey • white solid lubricants • polyglycol • silicate	• Operating temperature: −30 °C → +160 °C/+1.200 °C (lubrication/separation) • Press-fit: μ = 0.12, no chatter • Thread friction (M10/8.8): μ = 0.15
Chains	Transporting, Mixing, Laminating, Cutting/Rolling, Packaging	**Multipurpose Oil for Food Processing Technology OKS 370/371**	• H1 Reg. No. 124382 (OKS 370) • H1 Reg. No. 124384 (OKS 371)	• colourless • White oil	• Operating temperature: −10 °C → +180 °C • Density (20 °C): 0.87 g/ml • Viscosity (40 °C): 14 mm²/s
	Transporting, Baking	**High-Temperature Chain Lubricant for FP Technology OKS 387**	• H1 Reg. No. 126583	• black • Graphit • polyglycol	• Operating temperature: max. +600 °C • Density (20 °C): 1.04 g/ml • Viscosity (40 °C): 190 mm²/s • Four-ball test rig (welding load): 2,800 N
		High-Temperature Chain Oil for FP Technology OKS 3570/3571	• H1 Reg. No. 145347 (OKS 3570) • H1 Reg. No. 147769 (OKS 3571)	• yellowish-red • synthetic oil	• Operating temperature: −10 °C → +250 °C • Density (20 °C): 0.87 g/ml • Viscosity (40 °C): 300 mm²/s
	Transporting, Cooling/ Freezing	**Low-Temperature Oil for FP Technology OKS 3710**	• H1 Reg. No. 142477	• colourless • polyalphaolefin (PAO)	• Operating temperature: −60 °C → +135 °C • Density (20 °C): 0.80 g/ml • Viscosity (40 °C): 9 mm²/s
Roller bearings	Transporting, Mixing, Laminating, Cutting/Rolling, Packaging	**Multipurpose Grease for Food Processing Technology OKS 476**	• H1 Reg. No. 137619	• white • semi-synthetic oil • aluminium-complex soap	• Operating temperature: −30 °C → +110 °C • NLGI grade: 2 • DN factor (dm x n): 400,000 mm/min • Base oil viscosity (40 °C): 240 mm²/s • Four-ball test rig (welding load): 2,200 N
		Waterproof High-Pressure Grease for FP Technology OKS 480/481	• H1 Reg. No. 148971	• cream-coloured • polyalphaolefin (PAO) • calcium sulphonate complex soap	• Operating temperature: −30 °C → +160 °C • NLGI grade: 2 • DN factor (dm x n): 400,000 mm/min • Base oil viscosity (40 °C): 100 mm²/s
	Transporting, Proofing, Baking	**High-Temperature Grease for FP Technology OKS 479**	• H1 Reg. No. 135675	• beige • polyalphaolefin (PAO) • aluminium-complex soap	• Operating temperature: −35 °C → +120 °C/+160 °C • NLGI grade: 1 • DN factor (dm x n): 500,000 mm/min • Base oil viscosity (40 °C): 360 mm²/s
		Extreme-Temperature Bearing Grease OKS 4220	• H1 Reg. No. 124380	• white • PTFE • perfluoropolyether (PFPE)	• Operating temperature: −20 °C → +280 °C • NLGI grade: 2 • DN factor (dm x n): 300,000 mm/min • Base oil viscosity (40 °C): 510 mm²/s • Four-ball test rig (welding load): >10,000 N
	Transporting, Cooling/ Freezing	**Low-Temperature Grease for FP Technology OKS 472**	• H1 Reg. No. 135749	• white • polyalphaolefin (PAO) • ester • aluminium-complex soap	• Operating temperature: −45 °C → +120 °C • NLGI grade: 1 • DN factor (dm x n): 800.000 mm/min • Base oil viscosity (40 °C): 30 mm²/s
Levers, joints, slideways	Transporting, Mixing, Laminating, Cutting/Rolling, Packaging	**Multipurpose Oil for Food Processing Technology OKS 370/371**	• H1 Reg. No. 124382 (OKS 370) • H1 Reg. No. 124384 (OKS 371)	• colourless • White oil	• Operating temperature: −10 °C → +180 °C • Density (20 °C): 0.87 g/ml • Viscosity (40 °C): 14 mm²/s
		Adhesive Lubricant with PTFE OKS 3750/3751	• H1 Reg. No. 124383 (OKS 3750) Reg. No. 124801 (OKS 3751)	• whitish • PTFE • polyalphaolefin (PAO)	• Operating temperature: −35 °C → +135 °C • Density (20 °C): 0,85 g/ml • Viscosity (40 °C): 110 mm²/s • Four-ball test rig (welding load): 2,600 N
		Multipurpose Oil for Food Processing Technology OKS 3760	• H1 Reg. No. 129964	• colourless • polyalphaolefin (PAO)	• Operating temperature: −35 °C → +135 °C • Density (20 °C): 0.84 g/ml • Viscosity (40 °C): 100 mm²/s
	Transporting, Baking.	**Adhesive Lubricant with PTFE OKS 3750/3751**	• H1 Reg. No. 124383 (OKS 3750) Reg. No. 124801 (OKS 3751)	• whitish • PTFE • polyalphaolefin (PAO)	• Operating temperature: −35 °C → +135 °C • Density (20 °C): 0,85 g/ml • Viscosity (40 °C): 110 mm²/s • Four-ball test rig (welding load): 2,600 N
	Transporting, Cooling/ Freezing	**Low-Temperature Grease for FP Technology OKS 472**	• H1 Reg. No. 135749	• white • polyalphaolefin (PAO) • ester • aluminium-complex soap	• Operating temperature: −45 °C → +120 °C • NLGI grade: 1 • DN factor (dm x n): 800,000 mm/min • Base oil viscosity (40 °C): 30 mm²/s

OKS SPECIALITY LUBRICANTS FOR THE BAKERY INDUSTRY

Lubrication	Fields of application	Products for food processing technology	NSF	Main components	Technical data
Fittings, seals	Mixing, Laminating, Cutting/Rolling	**Valve Grease for Food Processing Technology OKS 477**	• H1 Reg. No. 135750 • Tested for beer foam compatibility	• light brown • polyalphaolefin (PAO) • silicate	• Operating temperature: −10 °C → +140 °C • NLGI grade: 3 • DN factor (dm x n): n.a. • Base oil viscosity (40 °C): 1.600 mm²/s
		Multi-Silicone Grease OKS 1110	• H1 Reg. No. 124381 • DVGW DIN EN 377 Reg. No. NG-5162BL0482	• transparent • silicone oil • inorganic thickener	• Operating temperature: −40 °C → +200 °C • NLGI grade: 3 • Base oil viscosity (40 °C): 9,500 mm²/s
Plastic parts	Mixing, Laminating, Cutting/Rolling	**Plastic and Elastomer Grease OKS 468**	• H1 Reg. No. 135591	• colourless-transparent • synthetic oil • inorganic thickener	• Operating temperature: −25 °C → +150 °C • Base oil viscosity (40 °C): 1,700 mm²/s
		Plastic and Elastomer Grease OKS 469	• H1 Reg. No. 131380 • Tested for beer foam compatibility	• colourless-transparent • polyalphaolefin (PAO) • inorganic thickener	• Operating temperature: −25 °C → +150 °C • NLGI grade: 2 • Base oil viscosity (40 °C): 400 mm²/s
	Transporting	**Silicone Release Agent OKS 1361**	• H1 Reg. No. 129481	• colourless • silicone oil	• For optimum effect, apply or spray on an even, thin layer of the product and avoid excessive lubrication. • Operating temperature: −60°C → +200°C
Gears	Transporting, Mixing, Laminating, Cutting/Rolling, Proofing	**Gear Oil for Food Processing Technology OKS 3720, OKS 3725, OKS 3730, OKS 3740**	• H1 Reg. No. 135753	• colourless • synthetic oilgemisch	• Operating temperature: −30 °C → +120 °C • Density (20 °C): 0,85 g/ml • Viscosity (40 °C): verschiedene, from 220 to 680 mm²/s • FZG damage level: power level >12
		Fluid Grease for Food Processing Technology OKS 473	• H1 Reg. No. 140485	• light yellow • polyalphaolefin (PAO) • aluminium-complex soap	• Operating temperature: −45 °C → +120 °C • NLGI grade: 0 – 00 • DN factor (dm x n): 500,000 mm/min • Base oil viscosity (40 °C): 160 mm²/s
Hydraulics	Mixing, Laminating	**Multipurpose Oil for Food Processing Technology OKS 3760**	• H1 Reg. No. 129964	• colourless • polyalphaolefin (PAO)	• Operating temperature: −35 °C → +135 °C • Density (20 °C): 0.84 g/ml • Viscosity (40 °C): 100 mm²/s
		Hydraulic Oil for Food Processing Technology OKS 3770, OKS 3775, OKS 3780	• H1 Reg. No. 129962	• colourless • polyalphaolefin (PAO)	• Operating temperature: −40 °C → +135 °C • Density (20 °C): 0.83 g/ml • Viscosity (40 °C): verschiedene, from 32 to 68 mm²/s
Compressors		**Multipurpose Oil for Food Processing Technology OKS 3760**	• H1 Reg. No. 129964	• colourless • polyalphaolefin (PAO)	• Operating temperature: −35 °C → +135 °C • Density (20 °C): 0.84 g/ml • Viscosity (40 °C): 100 mm²/s
		Hydraulic Oil for Food Processing Technology OKS 3770, OKS 3775, OKS 3780	• H1 Reg. No. 129962	• colourless • polyalphaolefin (PAO)	• Operating temperature: −40 °C → +135 °C • Density (20 °C): 0.83 g/ml • Viscosity (40 °C): verschiedene, from 32 to 68 mm²/s
Corrosion protection	All machinery equipment	**Protective Film for Metals OKS 2100**	• H2 Reg. No. 142256	• light-coloured • synthetic wax • Corrosion protection additive • solvent	• Operating temperature: −40°C → +70°C • Salt spray test: > 1,000 h bei 50 µm layer thickness • Optimal layer thickness: 40 µm
Cleaning	Water-based	**BIOlogic Industrial Cleaner, concentrate OKS 2650**	• A1 Reg. No. 129003	• red • non-ionic surfactants • silicates	• Depending on the degree of soiling can be diluted with water up to a maximum of 1:10. • pH-Wert: 11.0 (concentrate)
	Solvent basis	**Intensive Cleaner for the Food Processing Industry OKS 2670/2671**	• K1 / K3 Reg. No. 149997 (OKS 2670) Reg. No. 149998 (OKS 2671)	• colourless • solvent mixture	• Do not use at surfaces made of EPDM elastomers and silicones. Caution: Observe the specifications of the NSF when used in the food processing industry.
	Sugar deposits	**Sugar-Dissolving Oil, fully synthetic OKS 3790**	• H1 Reg. No. 128470	• colourless • Wasser • polyglycol	• Operating temperature: −5 °C → +80 °C • Density (20 °C): 1.06 g/ml • Viscosity (40 °C): 20 – 24 mm²/s