

For more than 45 years we develop special lubricants and maintenance products in close cooperation with our customers and partners for almost every application in the industry.

Setral® PFPE lubricants generate **high performance** combinations in the field of special lubricants. They are the first and best choice when it comes to performance, safety, quality and cost efficiency.

Setral® PFPE lubricants have high resistances:

- High pressure resistance
- High oxidation stability
- High radiation resistance
- High vacuum resistance
- High temperature stability partially more than +300°C
- High chemical resistance even against aggressive media like e.g. acid, lye

Setral® PFPE lubricants guarantee excellent compatibilities:

- Outstanding material compatibility even with diverse material combinations
- Compatible with almost every common plastics
- Compatible with most sealings (except fluorinated rubber)

Setral® PFPE lubricants show optimum physical characteristics:

- Low surface tension creates excellent thin and even surface wetting
- Low vapor pressure results in very low evaporation losses
- Low setting point implies good low temperature characteristics
- Excellent lubricity lowers the coefficient of friction and the energy input
- Good dielectric characteristics
- No flash point

Setral® PFPE lubricants ensure safety in application:

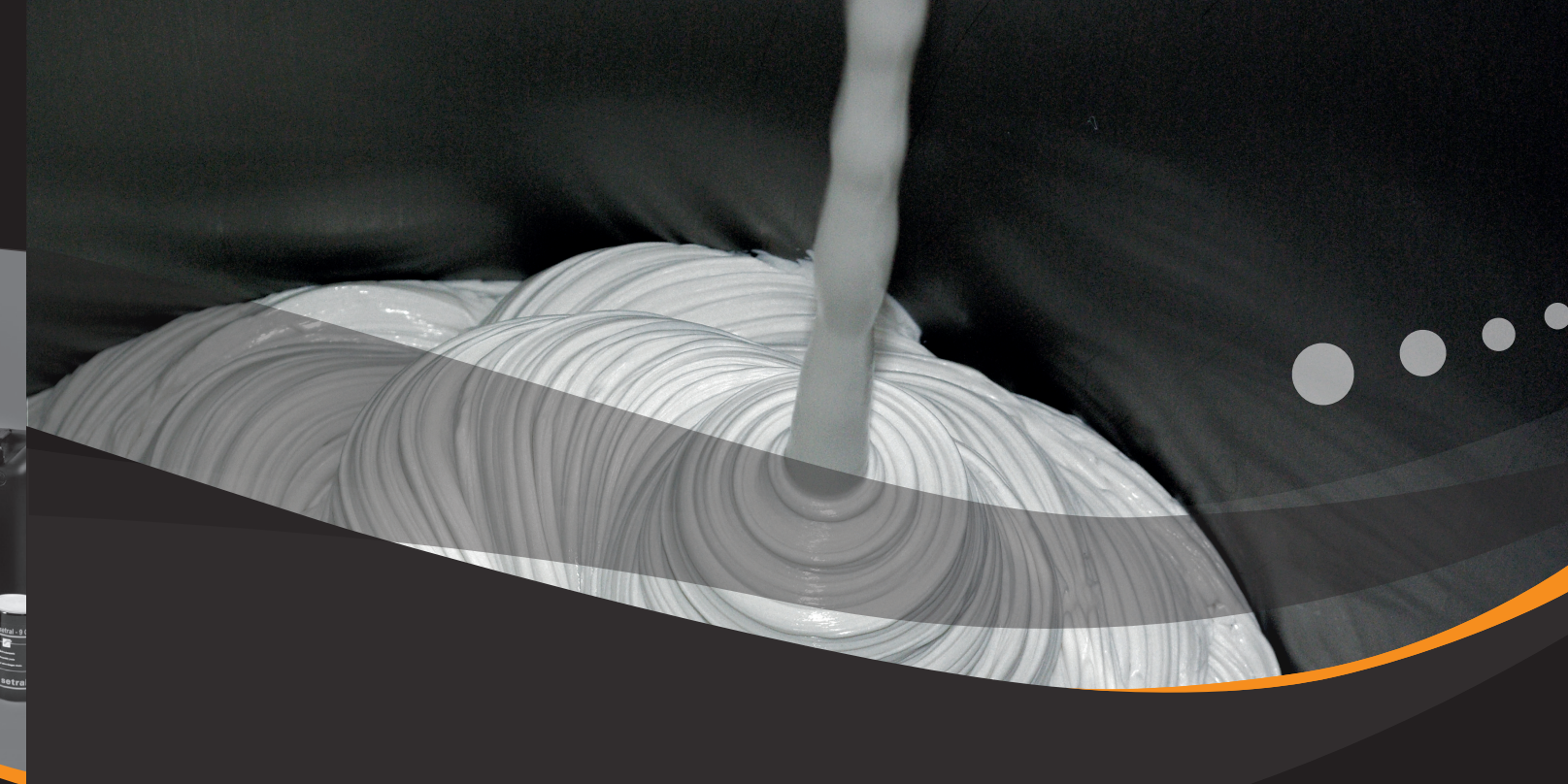
- Non-inflammable
- No labeling according to ordination of hazardous substances (GefStoffV)
- Partially with international H1 registration for the food industry
- Physiologically harmless
- Perfectly suited for life time lubrication
- Extremely long re-lubrication intervals compared to conventional lubricants

Setral® PFPE lubricants display its entire benefits if a good adherence on the lubrication surface is allowed. Therefore a clean and residue-free surface is inevitable. This is achieved by a thorough cleaning. The use of CLEAN-setral-AN/U or CLEAN-setral-FD with mechanical support, followed by CLEAN-setral-INT/648 is recommended. Residues of used lubricants or corrosion protection have to be eliminated because the pure PFPE lubricant is not miscible in any ratio with other lubricants. Thus residues would avoid the surface wetting of the friction point.

Further information is available on the material data sheets. Our experts will consult you on request and find the right solution for your application.

With more than 800 lubricants besides PFPE lubricants we offer a solution for almost every lubrication application.

Successful in more than 55 countries with satisfied customers



PFPE–LUBRICANTS

for extreme demands



Setral® PFPE lubricants for extreme demands

PFPE stands for perfluoropolyether and its chemical composition creates an uttermost inert material with excellent lubricating effect. PFPE base oils are the basis of modern formulations of lubricants for extreme demands like e.g. low or very high temperatures and in contact with aggressive media like e.g. acids and cleaning agents. Furthermore they are used for sensitive materials and friction pairings liable to wear especially if a long term or life time lubrication is required. This is exactly what Setral® PFPE lubricants have been developed for more than decades ago.

Friction points for which PFPE lubricants are the only and most economical lubrication solution exist in almost every industry. Our continuously growing customer base makes us to one of the leading manufacturer of PFPE greases. Typical applications are e.g. friction pairings of metal and/or plastic, slide and roller bearings, guide bars, valves, sealings, fittings and electrical contacts in more than the following industries:



TYPE	PRODUCTS	NLGI GRADE	BASE OIL VISCOSITY AT 40 °C (MM2/S)	TEMPERATURE RANGE	SPEED FACTOR ¹	LOAD CARRYING CAPACITY ²	H1 REGISTRATION	SPECIAL FEATURES	TYPICAL APPLICATIONS
GREASES	SYN-setral-INT/250 S-1 (Art.-No. 030316)	1	500	-40 up to +260°C (short +280°C)	250000	high	-	Lowest evaporation values	Long term lubrication of plain and roller bearings e.g. in film stretching machines, circle conveyors, paint lines, calenders, fans, and kiln cars in various industries. Amongst others, approved and recommended for the lubrication of thermally high loaded tire containers and continuous wood-press systems.
	SYN-setral-INT/250 S-2 (Art.-No. 030313)	2	500	-40 up to +260°C (short +280°C)	250000	high	-	Lowest evaporation values	Long term lubrication of plain and roller bearings e.g. in circle conveyors, paint lines, calenders, fans, kiln cars and rotary feedthroughs in various industries. Amongst others, approved and recommended for the lubrication of thermally high loaded roller bearings in veneer dryers as well as ball screws operating under vacuum.
	SYN-setral-INT/250 A-1 (Art.-No. 030319)	1	510	-40 up to +250°C (short +280°C)	250000	high	-	Numerous approvals and references	Long term lubrication of plain and roller bearings e.g. in circle conveyors, paint lines, calenders, fans and kiln cars in various industries. Amongst others, approved and recommended for the lubrication of fan motor systems in dryers.
	SYN-setral-INT/250 A-2 (Art.-No. 030315)	2	510	-40 up to +250°C (short +280°C)	250000	high	-	Numerous approvals and references	Long term lubrication of plain and roller bearings e.g. in textile tenter frames, circle conveyors, paint lines, calenders, fans, kiln cars and rotary feedthroughs in various industries. Amongst others, approved and recommended by numerous manufacturers in mechanical and plant engineering as well as for the lubrication of crucial sliding pairs in the automotive industry.
	SYN-setral-INT/250 FD-00 (Art.-No. 030394)	00	500	-40 up to +260°C (short +280°C)	300000	high	NSF #125439	Especially for the food and pharmaceutical industry	Long term lubrication of crucial friction pairings especially in the food, beverage, pharmaceutical, cosmetic and packaging industry that require a fluid consistency.
	SYN-setral-INT/250 FD-0 (Art.-No. 030392)	0	500	-40 up to +260°C (short +280°C)	250000	high	NSF #125440	Especially for the food and pharmaceutical industry	Long term lubrication of crucial friction pairings especially in the food, beverage, pharmaceutical, cosmetic and packaging industry that require a fluid consistency.
	SYN-setral-INT/250 FD-1 (Art.-No. 030398)	1	500	-40 up to +260°C (short +280°C)	250000	high	NSF #125441	Especially for the food and pharmaceutical industry	Long term lubrication of plain and roller bearings and all friction pairings liable to wear e.g. baking ovens, guide pulleys of conveyor chains, kiln cars etc. in the food, beverage, pharmaceutical, cosmetic and packaging industry.
	SYN-setral-INT/250 FD-2 (Art.-No. 030397)	2	500	-40 up to +260°C (short +280°C)	250000	high	NSF #125442	Especially for the food and pharmaceutical industry	Long term lubrication of plain and roller bearings and all friction pairings liable to wear e.g. pellet presses, baking ovens, guide pulleys of conveyor chains, kiln cars etc. in the food, beverage, pharmaceutical, cosmetic, and packaging industry.
	SYN-setral-INT/250 L-2 (Art.-No. 033014)	2	420	-40 up to +250°C (short +280°C)	250000	high	-	Especially for the automotive industry	For the lubrication of slide and roller bearings at increased loads as well as medium speeds and slide pairings of plastic/plastic or plastic/metal in many industries like e.g. in the automotive industry for the lubrication of conveyor systems.
	SYN-setral-INT/90 M-2 (Art.-No. 033354)	2	85	-75 up to +220°C (short +240°C)	600000	high	-	Excellent low temperature characteristics	Life time lubrication of plain and roller bearings and further friction points that require a low starting resistance even at extremely low temperatures like e.g. in precision engineering, electrical and automotive industry.
	SYN-setral-INT/190 R-2 (Art.-No. 033353)	2	190	-45 up to +250°C	400000	high	-	Wide temperature range	Long term lubrication of plain and roller bearings and further elements in applications with a particularly wide temperature range and/or aggressive conditions like e.g. in precision engineering, electrical and automotive industry.
	SYN-setral-INT/1000 (Art.-No. 030325)	2	500	-20 up to >+300°C	200000	high	-	Without PTFE	Long term lubrication of metallic surfaces, plain and roller bearings at low speed, fire protection fittings, locking systems, slideways, joints and other sliding surfaces exposed to permanent temperatures above +300°C. Does not contain PTFE compared to common PFPE greases.
	SYN-setral-INT/300 (Art.-No. 030302)	2	500	-30 up to approx. +300°C	300000	medium	NSF #135550	Without solid lubricants	Especially suited for ejector pins, slides, folding units, latch locking units as well as all sliding surfaces in plastic injection molding tools. Especially dedicated for the production of visible parts of all kinds and plastic parts for the food and pharmaceutical industry. Does not contain solid lubricants compared to common PFPE greases.
	SYN-setral-INT/310 FD (Art.-No. 033370)	1	575	-20 up to +310 °C (short +320°C)	150000	medium	NSF #152588	Innovative lubrication technology; without PTFE	Versatile use in high-temperature applications in which classical PFPE/PTFE greases are not presumed to create satisfactory results. Typical application: slide guides and running wheels in oven systems, slide and roller bearings at low speed like e.g. in dryers as well as joints and other sliding surfaces.
	SYN-setral-INT/Special (Art.-No. 030396)	3	500	-20 up to +280°C	250000	medium	-	Without solid lubricants	Sliding surfaces in injection molding and die-casting tools. Does not contain solid lubricants compared to common PFPE greases.
	SYN-setral-INT/330 Special (Art.-No. 03351)	2	1000	-10 up to +300°C (short +330°C)	75000	high	conform	Without PTFE; for extreme conditions	Extremely thermally loaded surfaces with short-term temperatures above +300°C e.g. plain and roller bearings at low speed, slideways, hinges and joints in various industries. Does not contain PTFE compared to common PFPE greases.
	SYN-setral-INT/110 OX (Art.-No. 030303)	2	480	-20 up to +250°C	250000	high	InS #1796527	Resistant at 110 bar / 60 °C to gaseous oxygen	Plain and roller bearings and all friction pairings liable to wear and/or under extreme conditions like e.g. oxygen fittings and other oxygen plant components up to max. 110 bar and max. 60°C for gaseous oxygen.
	SYN-setral-INT/200 OX (Art.-No. 033350)	2	24	-50 up to +200°C (short +230°C)	400000	medium	conform	BAM approval 80 bar / 60°C for gaseous oxygen	Oxygen fittings and plant components for gaseous oxygen as well as gadgets and devices for diving and breathing engineering up to max. 80 bar and max. 60°C. Also for friction pairings plastic/plastic in precision engineering and automotive industry.
	SYN-setral-SINT/125 CST-2 FD (Art.-No. 033360)	2	90	-55 up to +200°C (short +220°C)	600000	high	InS #1796856	Innovative lubrication technology	Especially for the lubrication of friction pairings under extreme conditions and high wear potential, difficult ambience like moisture, acids, lye etc.
	SYN-setral-SINT/325 CST-2 FD (Art.-No. 033361)	2	400	-25 up to + approx. 250°C	250000	high	conform	Innovative lubrication technology	Especially for the lubrication of friction pairings under extreme conditions and high wear potential, difficult ambience like moisture, acids, lye etc.
SYN-setral-SINT/425 CST-2 (Art.-No. 033357)	2	425	-20 up to + approx. 250°C	250000	high	-	Innovative lubrication technology	Especially for the lubrication of friction pairings under extreme conditions and high wear potential, difficult ambience like moisture, acids, lye etc.	
OIL	FLUID-setral-INT/80 N (Art.-No. 070767)	liquid	80	-35 up to +220°C (short +250°C)	-	low	-	Especially for electrical elements	Long term lubrication of slide and roller bearings and slideways at adverse conditions like e.g. high temperatures or under the influence of chemicals as well as for wear reduction of electrical elements.
	FLUID-setral-INT/500 (Art.-No. 070702)	liquid	500	-20 up to 300°C	-	medium	NSF #152750	Especially for chains	Long term lubrication of plain and roller bearings also chains and ropes at extremely high temperatures. For the protection of electrical contacts especially for hard gold and gold alloys. For the lubrication of sliding pairs plastic/plastic.
SPRAY	FLUID-setral-INT (Spray) (Art.-No. 050541)	liquid	80	-30 up to +220°C (short +250 °C)	-	medium	conform	Very thin lubrication layer	Lubrication and separating agent for extremely high temperatures. Separating agent for the production of plastic parts for the food industry and medical engineering.
CLEANER	CLEAN-setral-INT/648 (Art.-No. 090924)	liquid	0,4	-20 up to +70°C	-	-	InS #1796739	Evaporates fast and without residues	For residue-free basic cleaning prior to new greasing or re-lubrication with PFPE lubricants. Suitable for use on plain and roller bearings and other machine elements. Also suitable as thinner for PFPE greases.

¹Speed factor values are estimated empirically. Depending on the bearing the real speed factor in praxis can be lower or higher than the stated value. Calculate by multiplication of the average bearing diameter d_m [mm] with the rotary speed n [min⁻¹].

²The load carrying capacity C/P of a bearing is the ratio of dynamic load rating C [N] and the actual dynamic equivalent bearing load P [N] at the operating point.