



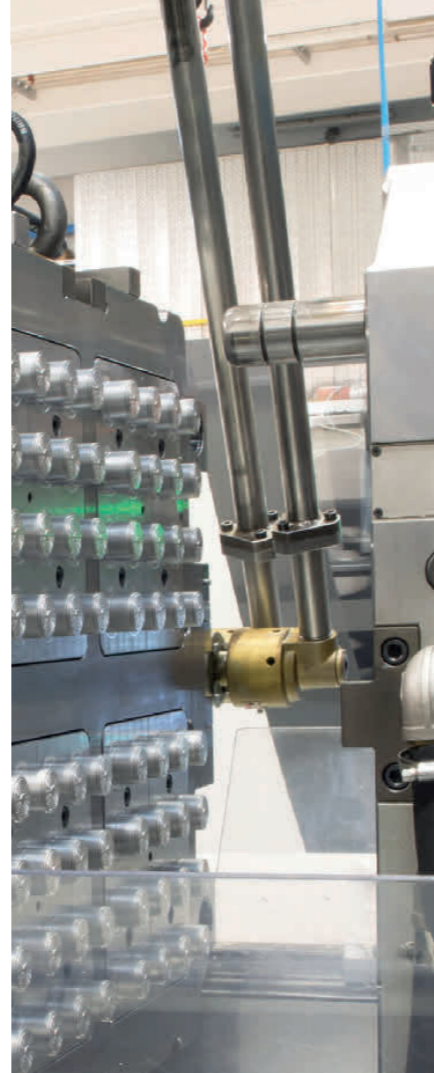
SPECIAL LUBRICANTS & MAINTENANCE PRODUCTS

Plastic injection molding and tool construction

Long-term lubrication of challenging tool elements

Increasingly stringent requirements for all types of high-tech tool elements, e.g. used in plastic injection molding, necessitate the use of high-tech lubricants. It is the prior aim to enable high shot numbers in combination with low reject rates and minimum maintenance effort. This keeps the production and follow-up costs at a minimum. In addition, complex geometries, new material combinations, high-temperature-resistant plastics, consequently high process temperatures as well as aggressive outgassing of plastics extremely challenge the lubricants in use. Thereby, conventional lubricants often fail.

Due to our many years of experience in the field of special lubricant production, we at setral® offer both, products of the highest standard as well as the necessary know-how. This enables an individual solution to your problems and provides tailor-made lubricants for your plastic injection molding machine. Our broad portfolio covers all parts to be lubricated and offers products for proper cleaning and corrosion protection. The focus in the application is put on the lubrication of the heart of the machine consisting of ejector pins, slides, guides etc. You will also find the right special oils for the corresponding gearboxes and hydraulics.



Development of special lubricants for more than 50 years - close cooperation with customers and partners in the plastic injection molding industry

The cooperation of research and development in direct exchange with our customers results in specially designed products for all parts of the plastic injection molding machine. Suitable points of lubrication for several products are shown in the following overview. Find the detailed product descriptions on the following pages. Our product range is divided into:

■ Lubrication
 ■ Cleaning
 ■ Corrosion protection



Recommendation: Use our SYN-setral-INT/300

Numerous references and approvals of well-known manufacturers from a wide range of industries confirm this, such as household appliances manufacturers, packaging producer, lighting technology and automotive industry.

Temperature stability up to +300°C

Free of conventional solid lubricants, e.g. PTFE

Sustainable by low consumption and extreme durability (substance loss approx. 1% at +160°C over 4 weeks)

Resistant to aggressive plastic condensates

Optimal running-in properties for new molds (avoidance of stick-slip effects)

Neutral towards many plastics and elastomers (no stress cracks, no swelling or embrittlement)

Stays in place - no lubricant transportation by moving elements onto the plastic parts



Aluminium-steel combinations/ DLC coatings - excellent lubrication characteristics

Direct processing of plastics without prior wet-chemical cleaning practicable

No increase in sliding clearance - even with progressive service lifetime of the injection molding tools

Easy relubrication with FLUID-setral-INT (Spray) possible



setral® sustainability climate protection

We at setral® take the issue of sustainability very serious and, as a climate-positive company, actively participate in climate protection. Our compliance with regulatory requirements such as REACH contribute to this as well as avoidance of controversial substances. Our proactive developments towards more sustainable products shape our mindset.



Greases and pastes - The right choice

Greases and pastes play a major role for the lubrication of parts in the injection molding. The right choice of lubricant does not only ensure reliable production periods with long operating times without downtime, but contributes to your smaller carbon footprint by reducing friction, wear and lubricant consumption. The setral® product portfolio saves resources, time and energy.

PRODUCT	BASE OIL	BASE OIL VISCOSITY AT 40 °C [mm ² /s]	NLGI	THICKENER/SOLID LUBRICANTS	TEMPERATURE-RANGE [°C]	DESCRIPTION	CERTIFICATE
GREASES							
SYN-setral-INT/300	PFPE	-	2	Inorganic (free of microplastic particles)	-30 to +300	Synthetic H1 special grease for long-term lubrication, especially for ejector pins	
SYN-setral-INT/330 Special	PFPE	1000	2	Inorganic	-10 to +330	Special grease for extremely high temperatures and aggressive environment	
SYN-setral-INT/Special	PFPE	-	3	Inorganic	-20 to +280	For the lubrication of sliding surfaces on injection molding tools	
SYN-setral-INT/250 FD-2	PFPE	500	2	PTFE	-40 to +260	H1 special grease for the long-term lubrication of plain and roller bearings	
SYN-setral-CA/C2 FD	Semi-synthetic	100	2	Calcium sulfonate complex	-25 to +160	Media resistant H1 grease with high wear and corrosion protection	
MI-setral-CA/C2-180	Mineral oil	220	1-2	Calcium sulfonate complex	-30 to +160	Special grease with high wear and corrosion protection	-
PASTES							
SYN-setral-FGP	Semi-synthetic	-	2	Inorganic	-30 to +1200	H1 high-temperature paste for the food and pharmaceutical industry	
MI-setral-5 B	Mineral oil	-	2	Lithium/PTFE	-25 to +150	Light, highly effective assembly and grease paste	-
MI-setral-HPP 1200 S	Mineral oil	-	1-2	Dark solid lubricants	-30 to +1200	Special paste for extreme temperatures and mechanic loads	-

Separating agents, fine oils, gear and hydraulic oils

Besides greases and pastes, injection molding machines need fine oils and partially also separating agents. setral® offers these as user-friendly spray versions and many of them in addition as bulk goods. Gear and hydraulic oils complete the portfolio for your plastic injection molding machines.

PRODUCT	BASE OIL	BASE OIL VISCOSITY AT 40 °C [mm ² /s]	TEMPERATURE-RANGE [°C]	DESCRIPTION	CERTIFICATE
SEPARATING AGENTS & FINE OILS					
FLUID-setral-INT (Spray)	PFPE	-	-35 to +270	H1 high-temperature separating agent and lubricant also suited for relubrication	
setral TS (Spray)	Renewable raw materials	41	-10 to +80	Silicone-free mold release agent for the modern plastic injection molding	-
SI-setral-5 X*	Silicone oil	275	-40 to +200	Synthetic, transparent H1 lubricating and separating agent based on silicone oil	
GLIS-setral-FD*	Semi-synthetic	2,5	-20 to +80	Versatile H1 oil for lubrication, loosening, preservation and cleaning	
GEAR & HYDRAULIC OILS					
SYN-setral-GEAR ... FD	PAO	150 220 320 460 680	-40 to +140**	Synthetic H1 high-performance gear oil for the food and pharmaceutical industry	
SYN-setral-GEAR ... N	PAO	150 220 320 460 680	-40 to +150	Fully-synthetic high-performance gear oil of the latest generation with EP additives	Approved from e.g. Flender Knödler
HYD-setral-SYN ... FD	PAO	32 46 68	-35 to +140**	Synthetic H1 hydraulic oil for the food and pharmaceutical industry	
HYD-setral ... FD	Medical white oil	32 46 68	0 to +90	H1 hydraulic oil for the food and pharmaceutical industry	

* also available as spray
** may vary depending on viscosity

Cleaners & degreasers

Clean surfaces are essential for reducing maintenance costs and wear, as a lubrication system can only develop its full performance on a perfectly cleaned surface. This is ensured by our specially tailored setral® cleaning systems for degreasing lubricated machine components, for cleaning residues from the cavity or for general machine cleaning.

PRODUCT	BASE	TEMPERATURE-RANGE [°C]	DESCRIPTION	CERTIFICATE
CLEANERS & DEGREASERS				
CLEAN-setral-AN/U*	Solvent mixture	-40 to +40	High-performance cleaner and degreaser, highly effective, fast evaporating and residue-free	NSF K1 NSF K3
CLEAN-setral-FD*	Solvent mixture	-5 to +50	H1 high-performance cleaner for residue-free cleaning and degreasing of machine elements	NSF KOSHER HALAL
CLEAN-setral-INT/648	PFPE	-20 to +70	H1 special cleaner for the cleaning of PFPE and PTFE residues	H1 KOSHER HALAL
CLEAN-setral-EDK (Spray)	Solvent mixture	-10 to +40	Cavity cleaner and cold paint stripper, removes all common paints, sealant and plastic residues as well as diesel effect	-
CLEAN-setral-SR (Spray)	Aqueous mixture	-5 to +20	Universal foam cleaner for glass, plastics and machine parts, compatible with common plastics e.g. PMMA	-
CLEAN-setral-SU*	Solvent mixture	-40 to +40	Residue-free evaporating universal cleaner and degreaser for metallic surfaces	-

* also available as spray



setral® Technical Training Cleaning principle

The cleaning effect of a cleaner depends on its active ingredients, whereby dissolving is the basic requirement for this. In general, substances can be either identified as polar or non-polar. The chemical principle "Similia similibus solventur (similar dissolves similar)" applies.

A polar, aqueous cleaner cleans water-soluble residues - a non-polar, solvent-based cleaner cleans conventional greases and oily residues. In addition, CLEAN-setral-INT/648 removes all inert PFPE- and PTFE- containing residues. For unknown residues, consecutive application of several cleaners with different bases is recommended, e.g. first CLEAN-setral-AN/U followed by CLEAN-setral-INT/648.



Corrosion protection

The prevention of corrosion and resulting damages during storage or transportation of tools is achieved by corrosion protection agents. In advance to the application of corrosion preventives, thorough cleaning is a prerequisite for the reliable protection. The type of corrosion protection, from oily to waxy, determines the time of protection and ranges from short-term protection for a few days to several months. All types can be found in the setral® corrosion protection portfolio.

PRODUCT	BASE OIL	BASE OIL VISCOSITY AT 40 °C [mm²/s]	TEMPERATURE-RANGE [°C]	DESCRIPTION	CERTIFICATE
CORROSION PROTECTION					
PRO-setral-FD*	White oil	2	-30 to +70	Grease-like H1 anti-corrosion agent for temporary corrosion protection	NSF H1 KOSHER HALAL
PRO-setral-KS*	Mineral oil	2	-40 to +80	Low-viscous special fluid for the corrosion protection of metallic surfaces of molds and tools	-
PRO-setral-PL 941 (Spray)	Mixture	120	-40 to +80	Grease-like anti-corrosion agent for temporary corrosion protection	-
PRO-setral-ACS*	Synthetic wax	-	-30 to +80	Wax-like corrosion protection for metallic surfaces. With slight color for visual control during application	-
PRO-setral-11 X*	Synthetic wax	21	-40 to +70	Wax-like corrosion protection for long-term protection and overseas transport	-
GLIS-setral-FD*	Semi-synthetic	2,5	-20 to +80	H1 lubricating and fine oil for temporary corrosion protection of metallic surfaces	NSF H1 KOSHER HALAL

* also available as spray



setral® Technical Training Tool conservation step by step



Successful in more than 80 countries with satisfied customers



Setral Chemie GmbH and Sétral S.à.r.l. are each certified according to DIN EN ISO 9001, DIN EN ISO 21469 and DIN EN ISO 14001.

All information in this document is based on our general experience at the date of the publication and thus is merely intended to give general note for possible applications. However, the contents do not guarantee the suitability of a product for an individual case and do not contain any guarantees of characteristics. The variety of possible applications requires to always run corresponding tests by the user before general application. Our products are continuously developed further. Therefore we reserve the right to always change the technical data of our products at any time without prior notice. Misprints and alterations reserved.
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