perma lubricants

perma-tec offers a wide range of high-quality lubricants meeting a great variety of requirements. Consistently high quality has established the product in diverse industrial sectors.

Renowned manufacturers develop and produce lubricants specifically for perma lubrication systems. All lubricants are tested under laboratory conditions and in real applications to ensure optimal function in perma lubrication systems.

NSF H1 Food, drinks, tobacco and pharma industry

BIO Bio-degradable for all applications

Oils

Name → Lubricant properties	Base oil	Operating temperature (°C)	Viscosity at +40 °C [mm²/s]	Sliding bearings Sliding guides	Open gears Gear racks	Spindles	Chains
perma High performance oil S014 → Lubricates effectively even at high operating temperatures → Good viscosity/temperature behaviour → Special creep properties ensure rapid film formation	Ester oil + synth. hydrocarbon oil	-20 to +250	320	-	-	-	✓
perma Multipurpose oil S032 → High performance transmission & multipurpose oil → Ageing- & oxidation-resistant → Good wear protection for gear teeth & roller bearings	Mineral oil	-5 to +100	100	✓	✓	✓	✓
BIO **perma Bio oil, low viscosity S064** → Multipurpose oil → Rapidly biodegradable → Good viscosity/temperature behaviour	Ester oil	-30 to +110	100	✓	✓	✓	✓
BIO **perma Bio oil, high viscosity S069** → Multipurpose oil → Rapidly biodegradable → Good wear protection	Ester oil	-20 to +110	460	✓	✓	✓	✓
NSF H1 **perma Food grade oil NSF H1 S070** → Broad operating temperature range → Very good ageing & oxidation resistance → Good wear protection	PAO + ester oil	-30 to +120	220	✓	✓	✓	✓

Additives
Tribological properties of the lubricant are enhanced with additives. The additives, e.g. anti-wear (AW) additives or extreme pressure (EP) additives, are mixed with the base oil.

Depending on the application, additives are selected to provide the required characteristics. In the case of gear oil, additives are imperative for specific purposes, such as increasing pressure resistance and shear strength.

Speed index = dk
The speed index indicates the maximum speed for various bearing types for which a specific lubricant is suitable. perma overviews specify the speed indexes for grease lubrication of deep groove ball bearings.
Calculation: n x dm = speed factor dk **dm = (D + d) ÷ 2**
n = Operating speed (1/min); D = Outside bearing diameter;
d = Inside (bore) bearing diameter; dm = Bearing size

Operating temperature
The operating temperature is the temperature range in which reliable function of components is guaranteed. Using the lubricant outside this range can lead to damage.

HINT

→ Special lubricants **are available upon request**
→ The perma SELECT APP helps you choose the right lubricant

Greases

Name → Lubricant properties	NLGI grade	Thickener	Base oil	Operating temperature [°C]	Basic viscosity at +40 °C [mm²/s]	Speed index	Roller bearings	Sliding bearings Sliding guides	Linear guides	Open gears Gear racks	Spindles
perma Multipurpose grease SF01 → Powerful multipurpose grease → Wear reducing thanks to EP additives → Free of heavy metals & silicone	2	Li/Ca	Mineral oil	-30 to +130	220	300,000	✓	✓	✓	-	✓
perma Extreme pressure grease SF02 → High-pressure grease with MoS2 → Ageing- & oxidation-resistant → Good dry-running properties	2	Li + MoS2	Mineral oil	-30 to +120	100	350,000	-	✓	-	✓	-
perma High temp. grease SF03 → Good oil retention → High thermal stability → Good corrosion protection	2	PHS + PTFE	Ester + PFPE	-20 to +220	420	300,000	✓	✓	-	-	-
perma High performance grease SF04 → Multipurpose lubricant for extreme requirements → Powerful at high temperatures & vibrations → Resistant to aggressive media	0/1	PHS	Mineral oil + PAO	-20 to +160	500	200,000	✓	✓	✓	✓	✓
perma High temp. / Extreme pressure grease SF05 → Multipurpose grease for extreme requirements → High load-carrying capacity → Good dry-running properties thanks to solid lubricants	0/1	PHS + MoS2	Mineral oil + PAO	-20 to +160	500	200,000	✓	✓	-	✓	-
perma Liquid grease SF06 → Good water resistance → High wear protection → Easily pumped	0	Al com.	Mineral oil	-20 to +130	220	300,000	✓	✓	✓	-	✓
perma High speed grease SF08 → High speed index → Low friction coefficient due to synthetic base oil → Broad operating temperature range	2	Ca com.	PAO	-40 to +140	100	600,000	✓	✓	-	-	-
BIO **perma Multipurpose bio grease SF09** → Rapidly biodegradable → Water hazard class WGK 1 → Fully synthetic	2	PHS	Ester	-40 to +140	120	300,000	✓	✓	-	✓	-
NSF H1 **perma Food grade grease NSF H1 SF10** → Synthetic → Good wear protection & low temperature resistance → Good water resistance	1	Al com.	PAO	-45 to +120	150	500,000	✓	✓	✓	✓	✓

Base oil
The base oil determines the properties and performance of the lubricant. Base oils are mineral oils, hydrocracked oils, polyalphaolefin (PAO) oils or synthetic ester oils.

Basic viscosity
The viscosity indicates the flowability of the base oil. Low viscosity base oils are used for very high speeds. High viscosity base oils are used for high load applications. The viscosity of a typical roller bearing grease at +40 °C is between 15 and 500 mm²/s.

NLGI grade
The NLGI grade (consistency number) denotes the consistency of a lubrication grease. Grades range from 000 (very fluid) to 6 (very hard). Greases up to NLGI grade 2 can be used in perma lubrication systems.

Thickener
The thickener acts like a sponge. It holds the individual components of the grease together and ensures that the oil stays at the contact point.