

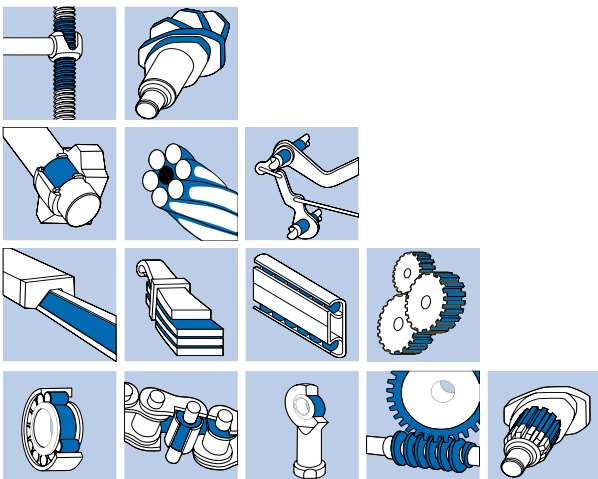


**New**

# Allround Lubricant

## High performance greases

- lubricating
- separating
- protecting



# Allround Lubricant

## High performance greases

Even in the present “High-tech age” problems due to friction and wear are a matter of course in a lot of industrial sectors. Extensive repairs, longer downtimes, shorter maintenance intervals and lower serviceable lives of plant and equipment are the consequence and cause enormous costs each year.



It is therefore important to already fulfil the requirements for long-term operational dependability of plant and equipment in the development and construction phase.

During the technical design of movable plant and equipment elements, the lubricant should be viewed as being a calculable functional element and must be included within the terms of reference under the aspects of friction and wear.

A plant operator needs to guarantee a disturbance-free and damage-free operation. The working life of lubricated machine parts depends to a decisive extent upon the selection and the use of the right lubricant.



Modern high performance lubricants, which meet the constantly increasing demands placed on plant and equipment, are thus increasingly gaining in significance.

The main demand placed upon such high performance lubricants is the maximum power transmission with minimal friction and minimal wear.

Moreover, additional properties such as water resistance, chemicals’ resistance, plastics compatibility or protection against corrosion must be observed.

WEICON Allround Lubricant high performance greases are specially developed to meet these high demands.

They provide sustained protection against friction and wear and thus enable:

- extremely long re-greasing intervals
- increased functional dependability and the retention of the value of the machine and production plants.
- reduction of the maintenance and repair work
- improved economic efficiency



The following influential factors of tribological systems and their complex interactions must be taken into account when selecting the appropriate WEICON product.

- design specifications, e.g. type of material, surface properties, geometry of the components
- mechanical stress, e.g. speed, vibration, pressure
- environmental influences, e.g. temperature, moisture, dirt accumulation



Technical product information, a type selection table as well as basic information about “Tribology” can be found on the following pages.

Constant further development and advancement in line with the latest practical and environmental demands additionally guarantee a constantly high quality standard.



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## Allround Lubricant AL-T



Allround high-temperature grease for the long-term lubrication of rolling and sliding bearings at all sliding speeds permissible for grease lubrication.

### Suitable for:

- rolling and sliding bearings
- joints
- levers
- sliding guides
- spindles
- spline shafts

### Areas of use:

- tar machines
- hot-air fans
- sintering plants
- converters

Classification acc. to DIN 51 502: KPL 2 R -20

Colour: dark brown

NLGI class: 2

Temperature range:

-25°C to +190°C (briefly up to 200°C)



## Allround Lubricant AL-M with MoS<sub>2</sub>



Strong-bonding and high pressure-resistant long-life grease with MoS<sub>2</sub>. Friction and wear are reduced for a long time.

### Suitable for:

- roller and sliding bearings
- pivoted bearings, levers, sliding guides
- spindles, camshafts and spline shafts
- springs (e.g. leaf springs)
- open gears (e.g. gear rims)
- worm gears

at all sliding speeds permissible for grease lubrication.

### Areas of use:

- rolling and sliding bearing assemblies in industry and construction
- articulated blocks of articulated shafts and universal joints
- bearings and joints on rolling mill tools, machine tools, agricultural and building machines, rail and road vehicles and many more besides.

Classification in accordance with DIN 51 502: KF 2K -20

Colour: black

NLGI Class: 2

Temperature range: - 20°C to +120°C



## Allround Lubricant AL-W



Special lubricant and corrosion protection, also for underwater applications. Effective protection against aggressive liquids (e.g. salt water, sewage water) in maritime environments and in wet plants.

### Suitable for:

- roller and sliding bearings also in mixed friction operation
- pivoted bearings, levers, sliding guides, spindles, spline shafts
- open gears (e.g. gear rims)
- worm gears, chains and cables at all sliding speeds permissible for grease lubrication.

### Areas of use:

- on-board cranes and lifting gears, offshore components
- busbars and distributors
- skip and trailer units
- shipyard supplier components
- for all rolling and sliding bearings in water pumps, water turbines, lock gates, car washes

Classification in accordance with DIN 51 502: KPL 1-2E -25

Colour: beige

NLGI Class: 1-2

Temperature range: - 25°C to +80°C

Conforms to: Federal German Armed Forces

TL 9150-0066; NATO Spec. G-460



## Allround Lubricant AL-H



Odourless and tasteless high-temperature grease for the foodstuffs technology.

### Suitable for:

- roller bearings
- sliding bearings
- pivoted bearings
- spindles
- spline shafts
- linear guide systems

at all sliding speeds permissible for grease lubrication.

### Areas of use:

- all lubrication points in the brewery and beverages industry
- in large abattoirs and conserve factories, for foodstuffs and frozen food producers, coffee-roasting shops, catering kitchens and many more besides.

Classification in accordance with DIN 51 502: KP HC 1P -40

Colour: yellowish-white

NLGI Class: 1

Temperature range: -40°C to +160°C

Conforms to:

NSF H1; LMBG Section 31 and Section 21



## Allround Lubricant AL-F



Allround high-performance grease for lubricating rolling and sliding bearings and for all grease lubrication points, also in the foodstuffs industry.

### Suitable for:

- roller and sliding bearings
- pivoted bearings
- levers, sliding guides
- spindles
- spline shafts
- camshafts, open gears
- worm gears

### Areas of use:

- filling and packing machines
- machines in the textile and clothing industry
- electrical and precision mechanical units and also machine elements in dairies, breweries, large abattoirs, catering kitchens etc.

Classification in accordance with DIN 51 502: KLF 2K -30

Colour: white

NLGI Class: 2

Temperature range: - 30°C to +120°C

Conforms to:

NSF H2; LMBG Section 31 and Section 5



## Type selection table

Application \ Product	AL-T	AL-M	AL-W	AL-H	AL-F
Rolling bearing	•	•	•	•	•
Sliding bearings	•	•	•	•	•
Chains			•		
Joints	•	•	•	•	•
Levers	•	•	•	•	•
Sliding guides	•	•	•	•	•
Linear guide systems	•			•	
Spindles	•	•	•	•	•
Spline shafts	•	•	•		•
Camshafts		•			•
Springs		•			
Open gears		•	•		•
Worm gears		•	•		•
Cables			•		

## Technical specifications

Application \ Product	AL-T	AL-M	AL-W	AL-H	AL-F	
Abbreviation (DIN 51502):	KPL 2 R -20	KF 2 K -20	KPL 1-2 E -25	KPHC 1P -40	KLF 2K -30	
Consistency assignment (DIN 51818):	NLGI-Klasse 2	NLGI-Klasse 2	NLGI-Klasse 1-2	NLGI-Klasse 1	NLGI-Klasse 2	
Base:	Aluminium complex soap / mineral oil	Li/Ca soap / MoS <sub>2</sub> / mineral oil	Spec. calcium soap / mineral oil	Aluminium complex soap / polyalphaolefine	Lithium soap / mineral oil	
Colour:	darkbrown	black	beige	yellowish-white	white	
VKA Test (DIN 51 350):	Welding load:	2400 N	3200 N	3400 N	1800 N	3600 N
	Goods load:	2200 N	3000 N	3200 N	1700 N	3400 N
	Spherical cap value (1 Min / 1000 N)	2,0 mm	0,5 mm	0,7 mm	0,6 mm	0,8 mm
Speed identifying value ( $k_a \cdot n \cdot d_m$ ):	400 000	250 000	350 000	400 000	350 000	
Worked penetration (DIN ISO 2137):	265-295 1/10 mm	265-295 1/10 mm	285-315 1/10 mm	310-340 1/10 mm	280 ± 15 1/10 mm	
Water resistance (DIN 51807):	0 - 90	1 - 90	0 - 40	1 - 90	1 - 90	
Temperature resistance:	-25°C to +190°C	-20°C to +120°C	-25°C to +80°C	-40°C to +160°C	-30°C to +120°C	
Drop point (IP 396):	>210°C	>170°C	>100°C	>200°C	>190°C	
Kinematic viscosity (DIN 51 562):	+40°C	approx. 230 mm <sup>2</sup> /s	approx. 185 mm <sup>2</sup> /s	approx. 100 mm <sup>2</sup> /s	approx. 400 mm <sup>2</sup> /s	approx. 100 mm <sup>2</sup> /s
	+100°C	approx. 16 mm <sup>2</sup> /s	approx. 14 mm <sup>2</sup> /s	approx. 9 mm <sup>2</sup> /s	approx. 40 mm <sup>2</sup> /s	approx. 9 mm <sup>2</sup> /s
Salt spray test with separated protective coats (Federal German Armed Forces Regulations 336 h/35°C, 5% NaCl):	---	---	no corrosion	---	---	
EMCOR-corrosion test (DIN 51 802):	0 / 0	0 / 0	0 / 0	1 / 1	0 / 0	
Density at +20°C (DIN 51757):	0,94 g/cm <sup>3</sup>	0,92 g/cm <sup>3</sup>	0,94 g/cm <sup>3</sup>	0,93 g/cm <sup>3</sup>	0,90 g/cm <sup>3</sup>	
Conforms to:	. / .	. / .	Federal German Armed Forces TL 9150-0066, NATO specification G-460	NSF-H 1, LMBG Section 31 and Section 21	NSF-H 2, LMBG Section 31 and Section 5	
Shelf life at least (months)*:	24	24	24	24	24	

\* At a constant room temperature and with dry storage for sealed original packing drums which are not exposed to any direct or indirect solar radiation.

Delivery forms: 400 ml spray can, 400 g cartridge, 1.0 kg can, 5.0 kg bucket and 25.0 kg bucket.

Other packing sizes are available upon request.

# Manual for the determination and classification of lubricating greases in accordance with DIN 51 502

Type of lubricating grease:

**K, G, OG, M**

- Information with respect to the operative range (in the case of synthetic oil additional letter based on type of oil: HC,E,PG,S)

Consistency class (NLGI)

Lowertemperature operative range

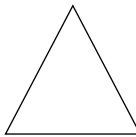

Additional identifying letter: **D, E, F, L, M, S, P, V**

- Information with respect to the usability

**KF 2 K-20**

Additional identifying letter **C to U**

- Statement of the upper temperature operative range

1	2	3
Lubricating grease	Identifying letter	Symbol
Lubricating greases for rolling and sliding bearings and sliding surfaces in accordance with DIN 51825	K <sup>1)</sup>	For lubricating greases based on mineral oil 
Lubricating greases for closed gears in accordance with DIN 51826	G	
Lubricating greases for open gears, gearing (adhesive lubricants without bitumen)	OG	
Lubricating greases for sliding bearings and seals <sup>2)</sup>	M	
Lubricating greases with a synthetic base are classified like the aforementioned greases based on mineral oil in terms of the basic properties.	Addition to the identifying letters in accordance with Table 1, Material group 3	For lubricating greases with a synthetic oil base 

<sup>1)</sup> ISO/TR 3498: 1986 uses the letters XM for the identifying letter K  
<sup>2)</sup> Lower demands than those placed on K lubricating greases

1	2
Consistency identifying number (NLGI classes in accordance with DIN 51818)	Worked penetration determined based on DIN ISO 2137 units <sup>1)</sup>
000	445 to 475
00	400 to 430
0	355 to 385
1	310 to 340
2	265 to 295
3	220 to 250
4	175 to 205
5	130 to 160
6	85 to 115 <sup>2)</sup>

<sup>1)</sup> 1 unit = 0.1mm / <sup>2)</sup> Stationary penetration

1	2
Additional identifying letter	Lubricants
D	For lubricating oils with detergent additives, e.g. hydraulic oil HLPD
E	For lubricating oils, which are used mixed with water, e.g. water mixable cooling lubricants, e.g. SE cooling lubricant
F	For lubricating oils, which are used mixed with water, e.g. water mixable cooling lubricants, e.g. SE cooling lubricant
L	For lubricant oils with active substances to increase the protection against corrosion and/or the aging stability, e.g. lubricant oil DIN 51517 – CL 100
M	For water mixable cooling lubricants with mineral oil contents, e.g. SEM cooling lubricant
S	For water mixable cooling lubricants with a synthetic base, e.g. SES cooling lubricant
P	For lubricants with active substances to reduce the friction and wear in the mixed friction area and/or to increase the stability under load, e.g. CLP 100 lubricating oil
V <sup>1)</sup>	For lubricants, which are diluted with solvents, e.g. DIN 51513-BB-V lubricating oil

<sup>1)</sup> The additional identifying letter V sometimes necessitates labelling in accordance with the Hazardous Substances Act (GefStoffV).

1	2	3
Additional identifying letter	upper application temperature <sup>1)</sup>	Behaviour with water in accordance with DIN 51807 Part 1 Evaluation scale DIN 51807 – <sup>2)</sup>
C	+60°C	0-40 or 1-40
D		2-40 or 3-40
E		0-40 or 1-40
F	+80°C	2-40 or 3-40
G		0-90 or 1-90
H		2-90 or 3-90
K	+100°C	0-90 or 1-90
M		2-90 or 3-90
N		by arrangement
P	+120°C	
R	+140°C	
S	+160°C	
T	+180°C	
U	+200°C	
	+220°C	
	more than +220°C	

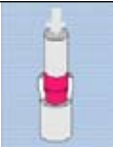




<sup>1)</sup> The „upper application temperature“ for permanent lubrication is equal to the highest test temperature when testing in accordance with DIN 51806 part 2 (e.g. draft) and/ or DIN 51821 part 2, if the test runs are passed.  
<sup>2)</sup> 0 means no change  
 1 means slight change  
 2 means moderate change  
 3 means considerable change

1	2
Additional identifying number	lower application temperature
-10	-10°C
-20	-20°C
-30	-30°C
-40	-40°C
-50	-50°C
-60	-60°C

## Additional identifying letters for synthetic oils

E	organic ester
FK	perfluor liquids
HC	synthetic hydrocarbons
PH	esters of phosphoric acid
PG	polyglycol oils
SI	silicon oils
X	others

Additive	Additive to lubricants, corrosion protection and maintenance products to achieve certain properties.	
Aging	Chemical transformation of substances due to the effects of heat, light and oxygen throughout the running time.	
Basic oil	Carrier fluid for pastes, greases, oils.	
Bleeding	The lubricating oil contained in the lubricating grease is separated from the soap frame. The bleeding of the grease at the lubricating point can mean that the grease is not sufficiently operatively stable and/or temperature resistance.	
Boundary friction	Arises if the lubricating film is penetrated or destroyed during the friction action. The pair of materials come into contact due to friction conditions, such as pressure or speed. The boundary friction area cannot be avoided before the formation of a supporting lubricating film when starting and stopping rotation or when changing the direction of rotation.	
Boundary lubrications.	Is given when two surfaces sliding on top of each other partially come into contact in the presence of a lubricant.	
Classification of consistency	The consistency of a lubricating grease is measured in accordance with DIN ISO 2137 with a penetrometer, whereby the grease is worked prior to the measurement in order to imitate the stress in a bearing. The penetration depth of a cone permits the assignment into a consistency class in accordance with NLGI (National Lubricating Grease Institute) in accordance with DIN 51818	
Code designation	The code designation in accordance with DIN 51502 provides information about the type of lubricating grease, the suitability, consistency classes (NLGI) and the application temperature range of lubricants.	
Corroders	Arise when the lubricating film is penetrated and surface roughness peaks thus weld together.	
Difference: - Oil - Grease - Paste	<b>Oil:</b> Liquid lubricant made from one or several types of oil for rapidly moving parts with relatively low surface pressure. <b>Grease:</b> Mass of oil and thickener (soap matrix). The oil stored in the thickener is separated by means of pressure and dynamics. In the stationary phase the thickener absorbs the oil once again. For medium to fast moving parts with higher surface pressure. <b>Paste:</b> Very high viscous mass of solid lubricants, carrier oil and thickener for static and slow moving parts subject to a high level of stress with an extremely high surface pressure.	
Drop point	The drop point (in °C) for a lubricating grease is the temperature at which liquefaction arises in accordance with DIN ISO 2176. It is a great deal higher than the recommended upper limit of the application temperature. However, certain grease thickeners do not liquefy, i.e. they do not have a drop point.	
Emergency running lubrication	Is reached with solid lubricants if a deficiency of lubrication arises with fat or oil lubricants.	
Evaporation loss	In accordance with DIN 58397 this is investigated over a stipulated time at high temperatures. The loss of evaporated oil as a percentage of weight should be as low as possible.	
FDA	"Food and Drug Administration" in the United States, responsible for laws and regulations in this area.	
Flash point	In the case of combustible fluids the flash point is a measurable value, which makes it possible to estimate the fire risk. Depending on the product type and the level of the flash point to be anticipated, the most common measuring methods are closed cup (in accordance with DIN 51755) or open cup (in accordance with DIN ISO 2592).	
Fluid friction	Is given if friction surfaces that slide over one another are completely separated by a lubricant so that there is no longer any direct contact. Wear no longer arises. The viscosity, temperature, shear gradient and the pressure behaviour of the lubricant determine the fluid friction.	
Friction	Friction is the mechanical resistance against the relative movement of two surfaces. Friction is not wanted in the area of lubrication technology as energy losses, friction heat and wear are linked to it. During the movement of material pairs on one another a distinction is made between two friction states: <b>Dry friction</b> – boundary friction (Starting friction, dry friction, surface sight friction) <b>Semi-fluid friction</b> – mixed friction (extending from boundary friction to fluid friction) <b>Fluid friction</b> – liquid friction (hydrodynamic friction)	
Frictional corrosion	Corrosion, which arises at fits, which are subject to oscillations with micro friction movements. Immediate formation of rust on rubbed off steel particles.	
Friction figure or friction coefficient $\mu$ (my)	The formula (based on Coulomb) friction $\mu = \frac{F_R}{F_N}$ (frictional force = tensile force) is used to determine the friction. $F_N$ (normal force = weight). The types of friction can be divided up into sliding friction, boring friction, rolling friction and combined sliding and rolling friction. Friction figure $\mu$ = friction coefficient	
HT lubricant	Suitable for permanent temperatures in excess of +140°C.	
Hydrodynamic lubrication	The individual sliding partners are separated from each other by a liquid lubricating film.	
Industrial lubricants	Lubricating oils and lubricating greases for industrial aggregates and machines (DIN 51 502, DIN ISO 6743 Section 0).	
Inhibitors	Aging protecting agents (inhibitors), which delay or prevent certain reactions.	
NSF	NSF International is an independent organisation based in the USA that carries out tests according to fixed standards in order to determine the suitability of products for the use, e.g., in the food industry. It is the successor organisation of the former USDA/FDA.	
Low temperature lubricant	Suitable for permanent temperatures of below -20 °C.	
Lubricating greases	Lubricating greases are consistent compounds of thickening agents and oils. Metal soap lubricating greases (calcium, Al, Ba, Li, Na, Pb- and complex soap lubricating greases), which are comprised of fatty acids and alkaline solutions as metal soaps (thickening or swelling agents) and lubricating oils; Metal soaps, lubricating oils and the manufacturing process determine the structure, consistency, usability, type of application etc. Soap-free lubricating greases with inorganic gel binders (silica gel, bentonite etc.) or organic thickening agents (PE, PP, polycarbamides etc) and lubricating oils. Synthetic lubricating greases, which are comprised of organic and inorganic thickening agents and synthetic oils (ester, silicon, polyglycol, polyphenyl distilled oils).	
Mixed friction	Is a state of friction during which boundary friction and fluid friction occur at the same time or following each other. The surface roughness (roughness peaks) are separated in some cases, sometimes there is also contact so that wear arises. Or a lubricating state in which solid body friction sometimes is present alongside hydrodynamic lubrication.	
MoS <sub>2</sub>	Chemical formula for molybdenum sulphide (mineral molybdenum). A solid lubricant with a layer lattice structure. If worked into the metal surface correctly this solid body with a laminated structure can reduce the friction value of the surface for a period of time.	

Oil separation	Oil separation as a percentage of weight is measured in accordance with DIN 51817 whereby the lubricating grease to be inspected is admitted with pressure and temperature.	
Oxidation	Oxidation is a combustion process. The addition of oxygen to certain elements or molecules occurs in this process. In the case of hydrocarbons jellification, the formation of lacquer, polymers, corrosive radicals etc. arise.	
Penetration	Measurable variable for the stipulation of the consistency (ductility) of lubricating greases. In the case of lubricating fats it is the distance which a cone of a certain dimensions penetrates vertically into the sample to be investigated under stipulated conditions (DIN ISO 2137 or DIN 51 804). Static penetration: Penetration of lubricating grease sample, which was not pretreated in the grease shaper, measured at +25°C. Worked penetration: By the term worked penetration we mean the cone penetration, which is determined immediately following the treatment of the sample with 60 double cycles within a minute in the lubricant shaper, at +25°C.	
Press-Fit-Test	The Press-Fit-Test provides information about the behaviour and the adhesion of solid lubricants at very high pressure and at a low sliding speed. The friction figure $\mu$ is measured and it is determined whether stick slip arises. Both results are important for the applications in the event of installation work (e.g. press manufacture) or in the case of gliding channels and guides (e.g. tool machines).	
Room temperature (RT)	Room temperature; defined in accordance with DIN 50014 = +23°C with 50% relative air humidity	
Salt spray test	The salt spray test simulates a salty climate in accordance with DIN 50021 SS, whereby coated metal plates are exposed to a defined salt spray. It is monitored after how many hours traces of rust arise.	
SKF EMCOR procedure	Is applied to assess the corrosion-preventing properties of roller bearing lubricants. In this process water is added to the grease and examined for evidence of corrosion in self-aligning ball bearings with a defined running duration and stop periods in accordance with DIN 51802. If no corrosion emerges during the visual inspection of the test rings then the corrosion level is 0. In the event of very extensive corrosion the maximum mark is 5.	
Solid lubricant	Are generally only used and required for lubrication tasks under extreme conditions (e.g. during operation in a mixed friction area). The most well-known ones are graphite, molybdenum sulphide, different plastics (e.g. PTFE), heavy metal sulphides, etc. The determination of the fixed lubricants is carried out in accordance with DIN 51 831 and DIN 51 832.	
Speed characteristic value	The speed characteristic value is a guiding value stating at which peripheral speeds lubricant can be used in roller bearings. Results on grease inspection machines, the basic oil viscosity and practical experience form the basis for the statement of the value	
Stick slip	Stick slip arises if the lubricant does not have a sufficient separation grade as the initial friction is higher than the motional friction.	
Synthetic oils	By contrast with natural oils, e. g. mineral oils, vegetable and animal oils, they are gained by means of chemical processes. In this way specific advantages can be gained such as the low tendency to coke, a low pour point, good resistance to chemicals and often excellent viscosity-temperature characteristics. Synthetic hydrocarbons, ester, polyglycol, fluorinated oils and silicon oils are for example used as lubricants.	
Thread friction	Thread friction is determined on a screw testing stand. In accordance with DIN 946 you obtain the friction figure $\mu$ of a screw connection when tightening screws and screw nuts. The thread dimensions, material and type of surface must be stated.	
Tribology	The area of tribology comprises the scientific research and technical application of friction, wear and lubrication whilst taking account of the construction, material science, authority regulations etc.	
USDA	United States Department of Agriculture <b>USDA-H1:</b> Designation class for tested and authorised lubricants, which can come into occasional, technically unavoidable, contact with foods. <b>USDA-H2:</b> Designation class for lubricants which may not come into contact with foods.	
Viscosity	The viscosity of an oil as a measure of the internal friction is determined using different measurement devices depending on the product. The kinematic viscosity is determined using the Ubbelohde viscometer at +40°C and at +100°C in order to be able to determine the viscosity reduction at higher temperatures.	
VKA	VKA is the abbreviation for Vierkugelapparat (four ball tester for luboils) by means of which the welding load and wear is measured in the event of punctual contact. DIN 51350 describes the test process. The welding load [N] is the point at which the welding of the individual balls with one another occurs. The wear characteristic value [mm] is the average diameter of the spherical caps which is formed at a constant load following a defined testing time.	
Water resistance	There is a static and a dynamic test to test the behaviour of lubricating greases towards water. It is investigated how the influence of water affects the lubricating grease at different temperatures (DIN 51 807).	
Wear	Arises after penetrating the lubricating film if the sliding partner touch one another and rub against one another.	

## WEICON lubricants and their behaviour vis-à-vis sealing materials (elastomers)

Elastomers \ Product	AL-T	AL-M	AL-W	AL-H	AL-F
ACM - Acrylate rubber	++	++	++	++	++
CR - Chloroprene rubber	+	+	+	+	+
CSM - Chlorosulfonated PE rubber	++	++	++	++	++
EPDM - Ethylene propylene diene rubber	--	--	--	--	--
FKM - Fluorocautchoc	++	++	++	++	++
NBR - Nitrile butadiene rubber	++	++	++	++	++
NR - Natural rubber	0	--	--	--	--
SBR - Styrene butadiene rubber	0	--	--	--	--
SQM/MVQ - Silicone rubber	++	++	++	++	++

++ resistant + resistant to a limited extent 0 not tested, preliminary trials or resistance tests are recommended -- not resistant

## WEICON lubricants and their behaviour vis-à-vis polymer materials

Polymers \ Product	AL-T	AL-M	AL-W	AL-H	AL-F
ABS - ABS copolymeride	++	++	++	++	++
CA - Cellulose acetate	++	++	++	++	++
EPS - Expanded polystyrene	++	++	++	++	++
PA - Polyamide	++	++	++	++	++
PC - Polycarbonate	--	--	--	--	--
PE - Polyethylene	++	++	++	++	++
PE-UHMW - Polyethylene with ultra high molar mass	++	++	++	++	++
PE-LD - Polyethylene with low density	+	+	+	++	+
PET - Polyethyleneterephthalate	++	++	++	++	++
POM - Polyoxymethylene	++	++	++	++	++
PP - Polypropylene	++	++	++	++	++
PPO - Polyphenylene oxide	++	++	++	++	++
PS - Polystyrene	+	+	+	++	+
PTFE - Polytetrafluor ethylene	++	++	++	++	++
PUR - Polyurethane	+	+	+	++	+
PVC - Polyvinylchloride	++	++	++	++	++
TPE - Thermoplastic elastomers	0	0	0	0	0

++ resistant + resistant to a limited extent 0 not tested, preliminary trials or resistance tests are recommended -- not resistant

The stated resistance levels are based on laboratory tests and literature notices. A guarantee cannot be provided due to the large number of raw materials used on the one hand and the complex chemical and morphological structure of the polymers on the other. In critical application cases we recommend that you carry out tests and/or consult with our application technology department.

## Miscibility of WEICON Allround Lubricant with other greases

Optimum results with WEICON Allround Lubricant high performance greases can only be achieved following the complete removal of grease residues. However, in practice the complete removal of such grease residues is not always possible. In this case you must check whether the WEICON product envisaged for use is always compatible with the grease that is still present. This test must be carried out on the basis of the main components of the grease (basic oil and thickener). Both main components must be miscible (compatible).

### Miscibility of basic oils

Basic oil	Mineral oil (AL-M, AL-W, AL-F, AL-T)	Polyalpha-olefine (AL-H)	Ester	Polyglycol	Silicone (Metyl)	Silicone (Phenyl)	Polyphenyl-ether	Perfluoropolyether oil
Mineral oil (AL-M, AL-W, AL-F, AL-T)		++	++	0	0	+	0	0
Polyalpha-olefine (AL-H)	++		++	0	0	0	0	0
Ester	++	++		++	0	++	++	0
Polyglycol	0	0	++		0	0	0	0
Silicone (Metyl)	0	0	0	0		+	0	0
Silicone (Phenyl)	+	0	++	0	+		++	0
Polyphenyl-ether	0	0	++	0	0	++		0
Perfluoropolyether oil	0	0	0	0	0	0	0	

++ miscible + miscible to a limited extent 0 not miscible

### Miscibility of thickeners

Thickening agents	Ca soap (water-free) (AL-W)	Ca complex soap	Li soap (AL-F)	Li complex soap	Li/Ca soap (AL-M)	Na soap	Gels*	Ba complex soap	Al complex soap (AL-H, AL-T)	Polycarbamide
Ca soap (water-free) (AL-W)		++	++	++	++	0	++	++	0	++
Ca complex soap	++		++	++	++	0	++	++	0	++
Li soap (AL-F)	++	++		++	++	0	++	++	0	++
Li complex soap	++	++	++		++	0	0	++	++	0
Li/Ca soap (AL-M)	++	++	++	++		0	++	++	0	++
Na soap	0	0	0	0	0		++	++	0	++
Gels*	++	++	++	0	++	++		++	0	++
Ba complex soap	++	++	++	++	++	++	++		++	++
Al complex soap (AL-H, AL-T)	0	0	0	++	0	0	0	++		++
Polycarbamide	++	++	++	0	++	++	++	++	++	

++ miscible 0 not miscible



# Allround Lubricant

## High performance greases

- lubricating • separating
- protecting

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