

ARCANOL ROLLING BEARING-TESTED GREASE



For a longer bearing life: FAG rolling bearing grease

A GREASE HAS A LONG WAY TO GO BEFORE IT MAY CALL ITSELF ARCANOL

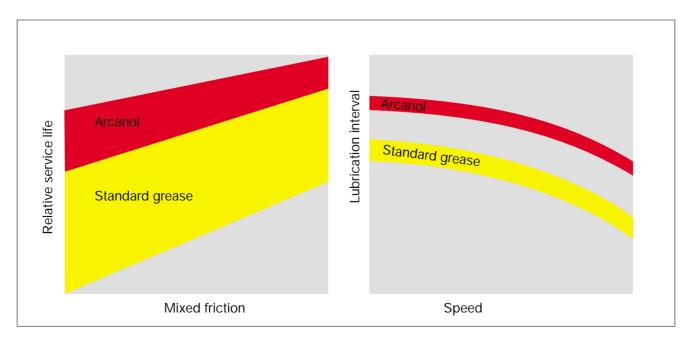
Special rolling bearing greases like Arcanol at first glance cost a little more than standard greases. But they are worth the price. For with Arcanol you buy some extra safety as FAG selects only the best from a number of good greases in a series of tests, provides quality assurance and gives lubrication recommendations for specific applications. Bearings which fail prematurely because they were lubricated with the wrong grease, with all the unpleasant and expensive consequences, increasingly belong to the past. In cooperation with renowned lubricant manufacturers, we have for many years developed lubricating greases that are particularly suitable for rolling bearings. However, before a new grease is included in the Arcanol programme, it has to pass a series of stringent tests in the FAG lubricant lab.

On our lubricant test rigs FE8 (DIN 51819) and FE9 (DIN 51821) the greases are tested in rolling bearings to find out how they improve service life and reduce friction and wear. Only the best greases are subjected to the following tests under simulated field conditions in far more complicated rolling bearing test rigs. If the results meet the requirements of the stringent FAG specifications, the greases are included in the Arcanol programme.

In addition, we test every single batch to ensure the uniform quality of the product. Only after the grease has passed this final test it is allowed to be filled into containers labelled Arcanol.

The programme consists of fourteen greases which cover nearly all fields of application optimally. The synoptic table on pages 2 and 3 shows chemico-physical data, fields of application and the conditions for which these greases are suitable. The selection of a suitable grease is considerably facilitated by the electronic FAG rolling bearing catalogue.

- More than 80 % of all rolling bearings are lubricated with grease
- Inadequate lubrication causes more than 40 % of all cases of rolling bearing damage
- Therefore users need lubricants and lubrication recommendations which they can rely on.
- Arcanol rolling bearing greases ensure that a bearing can be used to its full capacity
 - long service life
- good running behaviour
- very safe operation



SELECTION TABLE

Arcanol	MULTITOP	MULTI2	MULTI3	LOAD220	LOAD400	LOAD1000
DIN 51825	KP2N-40	K2N-30	K3N-30	KP2N-20	KP2N-20	KP2N-20
Thickener	Lithium soap with EP additives	Lithium soap	Lithium soap	Lithium/ calcium soap with EP additives	Lithium/ calcium soap with EP additives	Lithium/ calcium soap with EP additives
Base oil	Mineral oil+ester	Mineral oil	Mineral oil	Mineral oil	Mineral oil	Mineral oil
Base oil viscosity at 40 °C [mm ² /s]	85	ISO VG 100	80	ISO VG 220	400	ISO VG 1000
Consistency (NLGI class)	2	2	3	2	2	2
Operating temperature [°C]	-40+150	-30+140	-30+140	-20+140	-25+140	-20+140
Longtime limit temp. [°C]	80	75	75	80	80	80
Typical applications for Arcanol rolling bearing greases	Universal grease for ball and roller bearings		Universal grease for ball bearings ØD > 62 mm		Special grease for ball and roller bearings	Special grease for ball and roller bearings
	in rolling mills, construction, machines, motor vehicles, spinning and grinding spindles		in large electric motors, agricultural and construction machines, blowers	in rolling mills, rail vehicles	in mining machines, construction machines	in mining machines, construction machines, preferably for shock loads and large bearings
	increased speeds, high loads, low and high temperatures			at high loads, large speed, range, high degree of humidity	at extreme loads, medium temperatures, medium speeds	extreme loads, medium temperatures, low speeds
Low temperatures	++	+	+	0	_	0
High temperatures	0	0	0	O	O	0
Low friction, high speeds	+	O	O	_	_	
High loads, low speeds	+	0	0	++	++	++
Vibratory stressing	+	0	+	+	+	+
Sealing properties	0	0	+	+	+	+
Relubricatability	++	++	+	+	+	+
ISO VG = ISO viscosity class		tremely suitable ery suitable	O su	itable	less suitanot suital	

TEMP90	TEMP110	TEMP120	TEMP200	SPEED2,6	VIB3	BIO2	FOOD2
KP2P-40	KE2P-40	KPHC2R-30	KFK2U-40	KE3K-50	KP3N-30	KPE2G-30	K2K-30
Calcium polyurea with EP additives	Lithium complex soap	Polyurea with EP additives	PTFE	Polyurea	Lithium complex soap with EP additive	Lithium-/ calcium soap s	Aluminium complex soap
PAO oil	Ester oil	PAO/Ester oil	Fluor. poly. oil	PAO/ester oil	Mineral oil	Ester oil	White oil
ISO VG 130	ISO VG 150	460	ISO VG 400	22	170	58	192
2	2	2	2	2-3	3	2	2
-40+160	-40+160	-35+180	-40+260	-50+120	-30+150	-30+140	-30+120
90	110	120	200	80	90	80	70
Special grease for ball and roller bearings	Special grease for ball and roller bearings	Special grease for ball and roller bearings	Special grease for ball and roller bearings	Special grease for ball bearings	Special grease for ball and roller bearings	Special grease for ball and roller bearings	Special grease for ball and roller bearings
in couplings, electric motors, motor vehicles	in electric machines, motor vehicles	in continuous casting plants	in track rollers in baking machines, piston pins in compressors, kiln trucks, chem. plants	in machine tools, instruments	in rotor blade adjusters in wind power stations, packing machines	in environmentally hazardous applications	in applications with food contact; USDA H1
at high temperatures, high loads	at high temperatures, high speeds	at high temperatures, high loads	at extremely high temp., chemically aggressive environments	at extremely high speeds, low temperatures	at high temperatures, high loads, oscillating motion		
++	++	+	++	++	+	+	+
+	++	++	++	0	+	+	-
0	+	-		++	-	0	0
0	0	++	+		+	0	0
0	0	0	_	_	++	0	0
0	0	0	0	0	0	0	0
0	0	0	0	+	_	+	++

UNIVERSAL GREASE MULTITOP

MULTITOP *)

Universal grease for ball bearings and roller bearings

Typical applications:

- Motor vehicles
- Rolling mills
- Construction machinery
- Spinning and grinding spindles

Suitability for

Low temperatures	++
High temperatures	O
Low friction,	
high speeds	+
High loads,	
low speeds	+
Vibratory stressing	+
Sealing effect	0
Relubrication	++

Rating

- ++ extremely suitable
- + very suitable
- o suitable



FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol MULTITOP

Properties, applications: Bearing grease for high loads, low and high speeds, low and high temperatures, low noise, low friction

Characteristics		Unit	Value	Test method
Marking:			KP2N-40	DIN 51825
Colour:			brown	
Temperature range:		[°C]	-40 to 150	DIN 51825
Longtime limit temperate	ure:	[°C]	80	
Specifications:				
Thickener:			lithium soap	
Type of base oil:			mineral + ester o	il
Base oil viscosity	at 40°C:	[mm²/s]	85	DIN 51562 - 1
•	at 100°C:	[mm²/s]	12,5	DIN 51562 - 1
Identification letters of a	dditives:		A,K,EP	
Worked penetration:		[0,1 mm]	265-295	DIN ISO 2137
Consistency:		[NLGI-CI.]	2	DIN 51818
Drop point:		l _o Cl	190	DIN ISO 2176
Oxidation stability Pressure drop after 100	h at 99 °C:	[kPa]	< 40	DIN 51808
Water resistance:		[Range]	1-90	DIN 51807 - 1
Flow pressure at -35 °C		[hPa]	< 1380	DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after 2	4 h/100 °C	[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	2000	DIN 51350 - 4
Wear scar of four ball te	st:	[mm]		DIN 51350 - 5
FE8 tests (rolling elemen	it wear)			
536048 - 75/ 50 - 45	v10 / v50	[mg]	<1 / <1	DIN 51819
536048 - 3000/ 10 - 100	v10 / v50	(3)	7 / 11	DIN 51819
536050 - 6000/ 5 - 90	v10 / v50) [mg]	<1/	DIN 51819
FE9 tests (grease service	,			
A / 1500 / 6000 - 140	F10/F50	[h]	219 / 398	DIN 51821
Speed range:	Unit		earings and al roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]		800.000	350.000

^{*)} not cylindrical roller thrust bearings and spherical roller thrust bearings

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The data are based on actual knowledge at the time of print and refer to the respective test method. Guaranteed properties or warranties cannot be taken over. Edition: 01.03.2002

Available quantities:

400 g cartridge 1 kg can 5 kg bucket 25 kg hobbock 180 kg cask





UNIVERSAL GREASE MULTI2

MULTI2 *)

Universal grease for ball bearings with $D \le 62 \text{ mm}$

Typical applications:

- Small electric motors
- Agricultural and construction machinery
- · Household appliances

Suitability for

Low temperatures	+
High temperatures	0
Low friction,	
high speeds	0
High loads,	
low speeds	0
Vibratory stressing	0
Sealing effect	0
Relubrication	++

Rating

- ++ extremely suitable
- + very suitable
- o suitable



FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol MULTI2

Properties, applications: grease for bearings up to ØD <= 62mm

Characteristic	s	Unit	Value	Test method
Marking:			K2N-30	DIN 51825
Colour:			yellowish	
Temperature range:		[°C]	-30 to 140	DIN 51825
Longtime limit tempera	ature:	[°C]	75	
Specifications:				
Thickener:			lithium soap	
Type of base oil:			mineral oil	
Base oil viscosity	at 40°C:	[mm²/s]	ISO VG 100	DIN 51562 - 1
	at 100°C:	[mm²/s]		DIN 51562 - 1
Identification letters of	additives:		A,K,P	
Worked penetration:		[0,1 mm]	265-295	DIN ISO 2137
Consistency:		[NLGI-CI.]	2	DIN 51818
Drop point:		[°C]	185	DIN ISO 2176
Oxidation stability Pressure drop after 10	00 h at 99 °C:	[kPa]	< 50	DIN 51808
Water resistance:		[Range]	1-90	DIN 51807 - 1
Flow pressure at -30 °	С	[hPa]	< 1400	DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after	24 h/100 °C	[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]		DIN 51350 - 4
Wear scar of four ball	test:	[mm]	0,68	DIN 51350 - 5
FE8 tests (rolling elem	ent wear)			
536048 - 750/ 20 - RT	v10 / v50) [mg]	<1/4	DIN 51819
536050 - 7,5/ 80 - RT) [mg]	8 / 11	DIN 51819
FE9 tests (grease serv	,			
A / 1500 / 6000 - 140	F10/F50	[h]	63 / 117	DIN 51821

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)	
Speed limit n*dm	[mm/min]	500.000	250.000	

^{*)} not cylindrical roller thrust bearings and spherical roller thrust bearings

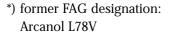
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Available quantities:

250 g tube 400 g cartridge 1 kg can 5 kg bucket 10 kg bucket 180 kg cask





UNIVERSAL GREASE MULTI3

MULTI3 *)

Universal grease for ball bearings with D > 62 mm

Typical applications:

- Large electric motors
- Agricultural and construction machinery
- Ventilators

Suitability for

Low temperatures	+
High temperatures	0
Low friction,	
high speeds	0
High loads,	
low speeds	0
Vibratory stressing	+
Sealing effect	+
Relubrication	+

Rating

- very suitable
- suitable

Available quantities:

400 g cartridge 1 kg can 5 kg bucket 10 kg bucket 25 kg hobbock 180 kg cask

*) former FAG designation: Arcanol L71V



FAG Rolling Bearing Grease Arcanol MULTI3

Properties, applications: Standard grease for bearings with ØD > 62mm; standard grease SF2

Characteristics	s	Unit	Value	Test method
Marking:			K3N-30	DIN 51825
Colour:			yellowish	
Temperature range:		[°C]	-30 to 140	DIN 51825
Longtime limit tempera	ature:	[°C]	75	
Specifications:				
Thickener:			lithium soap	
Type of base oil:			mineral oil	
Base oil viscosity	at 40°C:	[mm²/s]	80	DIN 51562 - 1
	at 100°C:	[mm²/s]	8	DIN 51562 - 1
Identification letters of	additives:		A,K,P	
Worked penetration:		[0,1 mm]	220-250	DIN ISO 2137
Consistency:		[NLGI-CI.]	3	DIN 51818
Drop point:		[°C]	190	DIN ISO 2176
Oxidation stability Pressure drop after 10	0 h at 99 °C:	[kPa]	< 50	DIN 51808
Water resistance:		[Range]	1-90	DIN 51807 - 1
Flow pressure at -30 °C	0	[hPa]	< 1400	DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after	24 h/100 °C	[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	1800	DIN 51350 - 4
Wear scar of four ball t	test:	[mm]	0,68	DIN 51350 - 5
FE8 tests (rolling eleme	ent wear)			
536050 - 7,5/80 - RT	v10 / v50) [mg]	<1 / <1	DIN 51819
536050 - 7,5/ 80 - 70	v10 / v50) [mg]	3 / 7	DIN 51819
FE9 tests (grease servi				
A / 1500 / 6000 - 130	F10/F50	[h]	80 / 128	DIN 51821
Speed range:	Unit		earings and roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]		500.000	250.000

^{*)} not cylindrical roller thrust bearings and spherical roller thrust bearings

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SPECIAL GREASE LOAD220

LOAD220 *)

Special grease for ball bearings and roller bearings

Typical applications:

- Rolling mills
- Rail vehicles

Suitability for

Low temperatures	0
High temperatures	0
Low friction,	
high speeds	_
High loads,	
low speeds	++
Vibratory stressing	+
Sealing effect	+
Relubrication	+

Rating

- ++ extremely suitable
- very suitable
- suitable
- less suitable



FAG Rolling Bearing Grease Arcanol LOAD220

Properties, applications: Bearing grease for high loads and a wide speed range with good water resistance propertries

Characteristic	s	Unit	Value	Test method
Marking:			KP2N-20	DIN 51825
Colour:			brown	
Temperature range:		[°C]	-20 to 140	DIN 51825
Longtime limit tempera	ature:	[°C]	80	
Specifications:				
Thickener:			lithium/calcium	
Type of base oil:			mineral oil	
Base oil viscosity	at 40°C:	[mm²/s]	ISO VG 220	DIN 51562 - 1
	at 100°C:	[mm²/s]	16	DIN 51562 - 1
Identification letters of	additives:		A,K,P,EP	
Worked penetration:		[0,1 mm]	265-295	DIN ISO 2137
Consistency:		[NLGI-CI.]	2	DIN 51818
Drop point:		[°C]	198	DIN ISO 2176
Oxidation stability Pressure drop after 10	0 h at 99 °C:	[kPa]	< 30	DIN 51808
Water resistance:		[Range]	1-90	DIN 51807 - 1
Flow pressure at -20 °	С	[hPa]	< 1117	DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after	24 h/100 °C	[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	3000	DIN 51350 - 4
Wear scar of four ball	test:	[mm]	0,47	DIN 51350 - 5
FE8 tests (rolling elem-	ent wear)			
536048 - 3000/ 10 - 12	0 v10 / v5	0 [mg]	10 / 20	DIN 51819
FE9 tests (grease serv	ice lifetime)			
A / 1500 / 6000 - 120	F10/F50) [h]	390 / 720	DIN 51821
Speed range:	Unit		earings and I roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	500.000	300.000
*) not cylindrical roller thrust be		-	earings	

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Available quantities:

1 kg can 10 kg bucket 180 kg cask

*) former FAG designation: Arcanol L215V

SPECIAL GREASE LOAD400

LOAD400 *)

Special grease for ball bearings and roller bearings

Typical applications:

- Mining machinery
- Construction machinery

Suitability for

Low temperatures	_
High temperatures	0
Low friction,	
high speeds	_
High loads,	
low speeds	++
Vibratory stressing	+
Sealing effect	+
Relubrication	+

Rating

- ++ extremely suitable
- + very suitable
- o suitable
- less suitable



FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol LOAD400

Properties, applications: Bearing grease for high loaded large bearings; low speed and shocks

Characteristics	Unit	Value	Test method
Marking:		KP2N-20	DIN 51825
Colour:		beige	
Temperature range:	[°C]	-25 to 140	DIN 51825
Longtime limit temperature:	[°C]	80	
Specifications:			
Thickener:		lithium/calcium	
Type of base oil:		mineral oil	
Base oil viscosity a	t 40°C: [mm²/s]	400	DIN 51562 - 1
at ·	100°C: [mm²/s]	28	DIN 51562 - 1
Identification letters of addit	ives:	A,K,P,EP	
Worked penetration:	[0,1 mm]	265-295	DIN ISO 2137
Consistency:	[NLGI-CI.]	2	DIN 51818
Drop point:	[°C]	170	DIN ISO 2176
Oxidation stability Pressure drop after 100 h a	t 99 °C: [kPa]	< 40	DIN 51808
Water resistance:	[Range]	1-90	DIN 51807 - 1
Flow pressure at -25 °C	[hPa]	< 1200	DIN 51805
Emcor Test:	[Corr.Grad]	0/0	DIN 51802
Copper corrosion after 24 h	/130 °C [Corr.Grad]	1	DIN 51811
Four ball weld load:	[N]	3400	DIN 51350 - 4
Wear scar of four ball test:	[mm]		DIN 51350 - 5
FE8 tests (rolling element w	ear)		
, •	v10 / v50 [mg]	/ 19	DIN 51819
	v10 / v50 [mg]	/ 25	DIN 51819
	v10 / v50 [mg]	/ <1	DIN 51819
	v10 / v50 [mg]	/ 5	DIN 51819
FE9 tests (grease service lif A / 1500 / 6000 - 130	etime) F10/F50 [h]	120 / 210	DIN 51821
A / 1000 / 0000 - 100	FTO/FOU [II]	120 / 210	DIN 3 102 I

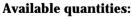
Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	400.000	200.000

 $[\]ensuremath{^\star}\xspace$) not cylindrical roller thrust bearings and $\ensuremath{^\star}\xspace$ spherical roller thrust bearings

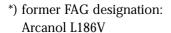
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400 g cartridge 1 kg can 5 kg bucket 10 kg bucket 180 kg cask





SPECIAL GREASE LOAD1000

LOAD1000 *)

Special grease for large ball bearings and roller bearings

Typical applications:

- Mining machinery
- Construction machinery

Suitability for

Low temperatures	O
High temperatures	0
Low friction,	
high speeds	
High loads,	
low speeds	++
Vibratory stressing	+
Sealing effect	+
Relubrication	+

Rating

- ++ extremely suitable
- + very suitable
- o suitable
- -- not suitable

FAG

FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol LOAD1000

Properties, applications: Bearing grease for very high load, shocks, large bearings

Characteristics		Unit	Value	Test method
Marking:			KP2N-20	DIN 51825
Colour:			brown	
Temperature range:		[°C]	-20 to 140	DIN 51825
Longtime limit temperatur	e:	[°C]	80	
Specifications:				
Thickener:			lithium/calcium	
Type of base oil:			mineral oil	
Base oil viscosity	at 40°C:	[mm²/s]	ISO VG 1000	DIN 51562 - 1
а	t 100°C:	[mm²/s]	42	DIN 51562 - 1
Identification letters of add	litives:		A,K,P,EP	
Worked penetration:		[0,1 mm]	280	DIN ISO 2137
Consistency:		[NLGI-CI.]	2	DIN 51818
Drop point:		[°C]	190	DIN ISO 2176
Oxidation stability Pressure drop after 100 h	at 99 °C:	[kPa]	< 40	DIN 51808
Water resistance:		[Range]	1-90	DIN 51807 - 1
Flow pressure at -20 °C		[hPa]	< 1437	DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after 24	h/100 °C	[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	3600	DIN 51350 - 4
Wear scar of four ball test	:	[mm]	0,39	DIN 51350 - 5
FE8 tests (rolling element	wear)			
536048 - 75/ 50 - 50	v10 / v5	0 [mg]	3 / 6	DIN 51819
536048 - 1500/ 10 - 80	v10 / v5	[3]	18 / 22	DIN 51819
536050 - 7,5/ 80 - RT	v10 / v5	1251	<1 / <1	DIN 51819
536050 - 3000/ 10 - 80	v10 / v5	0 [mg]	6 / 13	DIN 51819
FE9 tests (grease service A / 1500 / 6000 - 140	F10/F50	[h]	53 / 182	DIN 51821

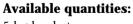
Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)	
Speed limit n*dm	[mm/min]	300.000	200.000	

^{*)} not cylindrical roller thrust bearings and spherical roller thrust bearings

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5 kg bucket 25 kg hobbock 180 kg cask

*) former FAG designation: Arcanol L223V



TEMP90 *)

Special grease for ball bearings and roller bearings

Typical applications:

- Couplings
- Electric motors
- Motor vehicles

Suitability for

Low temperatures	++
High temperatures	+
Low friction,	
high speeds	0
High loads,	
low speeds	0
Vibratory stressing	0
Sealing effect	0
Relubrication	O

Rating

- ++ extremely suitable
- + very suitable
- o suitable



FAG Industrial Bearings AG

FAG Rolling Bearing Grease Arcanol TEMP90

Properties, applications: Bearing grease for car hub units and general applications in car systems

Characteristics		Unit	Value	Test method
Marking:			KP2P-40	DIN 51825
Colour:			light brown	
Temperature range:		[°C]	-40 to 160	DIN 51825
Longtime limit temperatu	re:	[°C]	90	
Specifications:				
Thickener:			Ca-polyurea	
Type of base oil:				
Base oil viscosity	at 40°C:	[mm²/s]	130	DIN 51562 - 1
	at 100°C:	[mm²/s]	15,5	DIN 51562 - 1
Identification letters of ad	ditives:		A,K,P,EP	
Worked penetration:		[0,1 mm]	265-295	DIN ISO 2137
Consistency:		[NLGI-CI.]	2	DIN 51818
Drop point:		[°C]	220	DIN ISO 2176
Oxidation stability Pressure drop after 100 h	n at 99 °C:	[kPa]	< 40	DIN 51808
Water resistance:		[Range]	0/1-90	DIN 51807 - 1
Flow pressure at -35 °C		[hPa]	< 1400	DIN 51805
Emcor Test:		[Corr.Grad]	0/1	DIN 51802
Copper corrosion after 24	I h/135 °C	[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	3000	DIN 51350 - 4
Wear scar of four ball tes	it:	[mm]		DIN 51350 - 5
FE8 tests (rolling element	wear)			
536048 - 3000/ 10 - 115	v10 / v5	0 [mg]	<1 / <1	DIN 51819
536050 - 7,5/ 80 - 30/200	v10 / v5	0 [mg]	<1 / <1	DIN 51819
FE9 tests (grease service	,			
A / 1500 / 6000 - 140	F10/F50	1	190 / 660	DIN 51821
C / 1500 / 6000 - 160	F10/F50) [h]	/ 300	DIN 51821
Speed range:	Unit		earings and	Other roller
	31110	 cviindrical 	roller bearings	L : *\

Speed range: Unit		Ball bearings and cylindrical roller bearings	Other roller bearings*)	
Speed limit n*dm	[mm/min]	500.000	250.000	

 $[\]ensuremath{^*}\xspace$) not cylindrical roller thrust bearings and $\ensuremath{^*}\xspace$ spherical roller thrust bearings

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Available quantities:

400 g cartridge 1 kg can 5 kg bucket 25 kg hobbock 180 kg cask





TEMP110 *)

Special grease for ball bearings and roller bearings

Typical applications:

- Electric machines
- Motor vehicles

Suitability for

Low temperatures	++
High temperatures	++
Low friction,	
high speeds	+
High loads,	
low speeds	o
Vibratory stressing	o
Sealing effect	o
Relubrication	o

Rating

- ++ extremely suitable
- + very suitable
- o suitable



FAG Rolling Bearing Grease Arcanol TEMP110

Properties, applications: bearing grease for low and high temperatures

Characteristics	Unit	Value	Test method
Marking:		KE2P-40	DIN 51825
Colour:		brown	
Temperature range:	[°C]	-40 to 160	DIN 51825
Longtime limit temperature:	[°C]	110	
Specifications:			
Thickener:		lithium complex	
Type of base oil:		ester oil	
Base oil viscosity at 40°C	[mm²/s]	ISO VG 150	DIN 51562 - 1
at 100°C	: [mm²/s]	19,8	DIN 51562 - 1
Identification letters of additives:		A,K,P	
Worked penetration:	[0,1 mm]	280	DIN ISO 2137
Consistency:	[NLGI-CI.]	2	DIN 51818
Drop point:	[°C]	250	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99 °C	c: [kPa]	< 40	DIN 51808
Water resistance:	[Range]	1-80	DIN 51807 - 1
Flow pressure at -40 °C	[hPa]	< 1400	DIN 51805
Emcor Test:	[Corr.Grad]	0-0	DIN 51802
Copper corrosion after 24 h/120 °	C [Corr.Grad]	1	DIN 51811
Four ball weld load:	[N]		DIN 51350 - 4
Wear scar of four ball test:	[mm]	0,68	DIN 51350 - 5
E8 tests (rolling element wear)			
36048 - 75/ 50 - RT v10 / v	[21	<1 / <1	DIN 51819
36050 - 7,5/ 80 - 120 v10 / v	,,	<1 / <1	DIN 51819
FE9 tests (grease service lifetime) A / 1500 / 6000 - 160 F10/F		39 / 74	DIN 51821
ow Temperature Torque	(A)	4770 (040	AOTA D4470
-54 °C Start / Steady State -40 °C Start / Steady State	[Nmm] [Nmm]	1770 / 940 100 / 40	ASTM D1478 ASTM D1478
Low Temperature Torque	[INITIII]	100 / 40	A31WID1476
-55 °C Start / Steady-state	[Nmm]	1771 / 941	IP 186
-41 °C Start / Steady-state	[Nmm]	101 / 41	IP 186
Speed range: Unit	Ball be	earings and I roller bearings	Other roller bearings*)
Speed limit n*dm [mm/m		600.000	250.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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*) former FAG designation: Arcanol L30V



TEMP120 *)

Special grease for ball bearings and roller bearings

Typical applications:

• Continuous casting plants

Suitability for

Low temperatures	+
High temperatures	++
Low friction,	
high speeds	_
High loads,	
low speeds	++
Vibratory stressing	O
Sealing effect	O
Relubrication	0

Rating

- ++ extremely suitable
- very suitable
- suitable
- less suitable



FAG Rolling Bearing Grease Arcanol TEMP120

Properties, applications: bearing grease for high temperatures, high loads

Characteristics	3	Unit	Value	Test method
Marking:			KPHC2R-30	DIN 51825
Colour:			greenish	
Temperature range:		[°C]	-35 to 180	DIN 51825
Longtime limit tempera	iture:	[°C]	120	
Specifications:				
Thickener:			polyurea	
Type of base oil:			SHC/ester oil	
Base oil viscosity	at 40°C:	[mm²/s]	ISO VG 460	DIN 51562 - 1
	at 100°C:	[mm²/s]	40	DIN 51562 - 1
Identification letters of	additives:		A,K,P,EP	
Worked penetration:		[0,1 mm]	280	DIN ISO 2137
Consistency:		[NLGI-CI.]	2	DIN 51818
Drop point:		[°C]	240	DIN ISO 2176
Oxidation stability Pressure drop after 10	0 h at 99 °C:	[kPa]		DIN 51808
Water resistance:		[Range]	0-90	DIN 51807 - 1
Flow pressure at °C		[hPa]		DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after	24 h/100 °C	[Corr.Grad]	0	DIN 51811
Four ball weld load:		[N]		DIN 51350 - 4
Wear scar of four ball t	est:	[mm]		DIN 51350 - 5
E8 tests (rolling eleme	ent wear)			
36048 - 750/ 50 - 65	v10 / v5	[21	<1 / <1	DIN 51819
36050 - 7,5/ 80 - RT	v10 / v5	r	<1 / <1	DIN 51819
36050 - 7,5/ 80 - 150	v10 / v5	0 [mg]	<1 / <1	DIN 51819
E9 tests (grease servi		. FI.3	04 (405	DIN 54004
A / 1500 / 6000 - 180	F10/F50) [h]	84 / 125	DIN 51821
Speed range:	Unit		earings and I roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min	ıl	300.000	150.000
*		- 1		

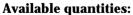
	Offic	cylindrical roller bearings	
Speed limit n*dm	[mm/min]	300.000	

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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1 kg can 5 kg bucket 25 kg hobbock

*) former FAG designation: Arcanol L195V



TEMP200 *)

Special grease for ball bearings and roller bearings

Typical applications:

- Track rollers in bakery machines
- Piston pins in compressors
- Kiln trucks
- Chemical plants

Suitability for

Low temperatures	++
High temperatures	++
Low friction,	
high speeds	
High loads,	
low speeds	+
Vibratory stressing	_
Sealing effect	0
Relubrication	0

Rating

- ++ extremely suitable
- very suitable
- suitable
- less suitable
- -- not suitable



FAG Rolling Bearing Grease Arcanol TEMP200

Properties, applications: High temperature grease for high loads

Characteristics	Unit	Value	Test method
Marking:		KFK2U-40	DIN 51825
Colour:		white	
Temperature range:	[°C]	-40 to 260	DIN 51825
Longtime limit temperature:	[°C]	200	
Specifications:			
Thickener:		PTFE	
Type of base oil:		fluorinated polyethe	r oil
Base oil viscosity at 40	°C: [mm²/s] 400	DIN 51562 - 1
at 100	°C: [mm²/s] 35	DIN 51562 - 1
Identification letters of additives	S :		
Worked penetration:	[0,1 mi	m] 265-295	DIN ISO 2137
Consistency:	[NLGI-C	OL.] 2	DIN 51818
Drop point:	[°C]	not measurable	DIN ISO 2176
Oxidation stability Pressure drop after 100 h at 99	°C: [kPa]	< 80	DIN 51808
Water resistance:	[Range]	0-90	DIN 51807 - 1
Flow pressure at -30 °C	[hPa]	< 1400	DIN 51805
Emcor Test:	[Corr.G	rad] 0/1	DIN 51802
Copper corrosion after 24 h/100	O°C [Corr.G	rad] 1	DIN 51811
Four ball weld load:	[N]	4500	DIN 51350 - 4
Wear scar of four ball test:	[mm]		DIN 51350 - 5
FE8 tests (rolling element wear)	١		
536050 - 7,5/ 80 - 150 v10	/ v50 [mg]	7 / 19	DIN 51819
FE9 tests (grease service lifetim	ne)		
	/F50 [h]	1000 /	DIN 51821
A / 1500 / 3000 - 260 F10	/F50 [h]	132 / 158	DIN 51821
Speed range: U		Ball bearings and ndrical roller bearings	Other roller bearings*)
Speed limit n*dm [mm	/min]	300.000	100.000

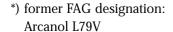
^{*)} not cylindrical roller thrust bearings and spherical roller thrust bearings

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Available quantities:

70 g tube 1 kg can





SPECIAL GREASE SPEED2,6

SPEED2,6 *)

Special grease for ball bearings

Typical applications:

- · Machine tools
- Instruments

Suitability for

Low temperatures	++
High temperatures	O
Low friction,	
high speeds	++
High loads,	
low speeds	
Vibratory stressing	_
Sealing effect	0
Relubrication	+

Rating

- ++ extremely suitable
- very suitable
- suitable
- less suitable
- -- not suitable



FAG Rolling Bearing Grease Arcanol SPEED2,6

Properties, applications: Grease for high speed bearings

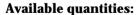
	KE3K-50	DIN 51825
		DII 4 3 1023
	beige	
[°C]	-50 to 120	DIN 51825
[°C]	80	
	polyurea	
	SHC/ester oil	
[mm²/s]	ISO VG 22	DIN 51562 - 1
[mm²/s]	5	DIN 51562 - 1
	A,K,P	
[0,1 mm]	250-280	DIN ISO 2137
[NLGI-CI.]	2-3	DIN 51818
[°C]	>250	DIN ISO 2176
c: [kPa]	< 40	DIN 51808
[Range]	0-90	DIN 51807 - 1
[hPa]	< 1400	DIN 51805
[Corr.Grad]	0/1	DIN 51802
C [Corr.Grad]	1	DIN 51811
[N]	1800	DIN 51350 - 4
[mm]	0,43	DIN 51350 - 5
/50 [mg]	<1 / 15	DIN 51819
50 [h]	/ 166	DIN 51821
		Other roller bearings*)
in] 2	.000.000	200.000
	: [mm²/s] : [mm²/s] : [mm²/s] [0,1 mm] [NLGI-CI.] [°C] : [kPa] : [Range] [hPa] [Corr.Grad] [Corr.Grad] [N] [mm] /50 [mg]	polyurea SHC/ester oil AHC/ester oil

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	2.000.000	200.000

^{*)} not cylindrical roller thrust bearings and spherical roller thrust bearings

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250 g tube 1 kg can 25 kg hobbock

*) former FAG designation: Arcanol L75



SPECIAL GREASE VIB3

VIB3 *)

Special grease for ball bearings and roller bearings

Typical applications:

- Rotor blade adjusters in wind power plants
- · Packaging machinery

Suitability for

Low temperatures	+
High temperatures	+
Low friction,	
high speeds	_
High loads,	
low speeds	+
Vibratory stressing	++
Sealing effect	O
Relubrication	_

Rating

- ++ extremely suitable
- + very suitable
- o suitable
- less suitable



FAG Rolling Bearing Grease Arcanol VIB3

Properties, applications: high temperature and high load, oscillation

Characteristics		Unit	Value	Test method
Marking:			KP3N-30	DIN 51825
Colour:			brown	
Temperature range:		[°C]	-30 to 150	DIN 51825
Longtime limit temperatu	ıre:	[°C]	90	
Specifications:				
Thickener:			lithium complex	
Type of base oil:			mineral oil	
Base oil viscosity	at 40°C:	[mm²/s]	170	DIN 51562 - 1
	at 100°C:	[mm²/s]	13,5	DIN 51562 - 1
Identification letters of ac	dditives:		A,K,P,EP	
Worked penetration:		[0,1 mm]	220-250	DIN ISO 2137
Consistency:		[NLGI-CI.]	3	DIN 51818
Drop point:		[°C]	250	DIN ISO 2176
Oxidation stability Pressure drop after 100	h at 99 °C:	[kPa]	< 30	DIN 51808
Water resistance:		[Range]		DIN 51807 - 1
Flow pressure at -20 °C		[hPa]	< 1600	DIN 51805
Emcor Test:		[Corr.Grad]	0	DIN 51802
Copper corrosion after 2	4 h/150 °C	[Corr.Grad]	1	DIN 51811
Four ball weld load:		[N]	3000	DIN 51350 - 4
Wear scar of four ball te	st:	[mm]		DIN 51350 - 5
FE8 tests (rolling elemen	t wear)			
536050 - 7,5/ 80 - RT	v10 / v5	0 [mg]	2 / 2	DIN 51819
536050 - 3000/ 10 - 80	v10 / v5	0 [mg]	2 / 3	DIN 51819
FE9 tests (grease service	,			
A / 1500 / 6000 - 150	F10/F50) [h]	/ 120	DIN 51821

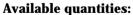
Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	350.000	200.000

*) not cylindrical roller thrust bearings and spherical roller thrust bearings

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1 kg can 5 kg bucket 25 kg hobbock

*) former FAG designation: Arcanol L166V



SPECIAL GREASE BIO2

BIO2

Special grease for ball bearings and roller bearings

Typical applications:

• Environmentally hazardous applications

Suitability for

Low temperatures	+
High temperatures	+
Low friction,	
high speeds	o
High loads,	
low speeds	o
Vibratory stressing	o
Sealing effect	o
Relubrication	+

Rating

very suitable suitable



FAG Rolling Bearing Grease Arcanol BIO2

Properties, applications: bearing grease - rapidly biodegradeable

Characteristics		Unit	Value	Test method
Marking:			KPE2G-30	DIN 51825
Colour:			light brown	
Temperature range:		[°C]	-30 to 140	DIN 51825
Longtime limit temperatu	ire:	[°C]	80	
Specifications:				
Thickener:			lithium/calcium	
Type of base oil:			ester oil	
Base oil viscosity	at 40°C:	[mm²/s]	58	DIN 51562 - 1
	at 100°C:	[mm²/s]	10	DIN 51562 - 1
Identification letters of ac	lditives:			
Worked penetration:		[0,1 mm]	265-295	DIN ISO 2137
Consistency:		[NLGI-CI.]	2	DIN 51818
Drop point:		[°C]	190	DIN ISO 2176
Oxidation stability Pressure drop after 100	h at 99 °C:	[kPa]	< 41	DIN 51808
Water resistance:		[Range]	0	DIN 51807 - 1
Flow pressure at -35 °C		[hPa]	< 1200	DIN 51805
Emcor Test:		[Corr.Grad]	0/0	DIN 51802
Copper corrosion after 2	4 h/ °C	[Corr.Grad]		DIN 51811
Four ball weld load:		[N]	2800	DIN 51350 - 4
Wear scar of four ball tes	st:	[mm]	1,18	DIN 51350 - 5
FE8 tests (rolling elemen	t wear)			
FE9 tests (grease service	lifetime)			
A / 1500 / 6000 - 120 A / 1500 / 6000 - 150	F10/F50 F10/F50	1001	/ 1000 / 160	DIN 51821 DIN 51821
Speed range:	Unit		pearings and all roller bearings	Other roller bearings*)

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
Speed limit n*dm	[mm/min]	300.000	200.000

^{*)} not cylindrical roller thrust bearings and spherical roller thrust bearings

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Available quantities:

1 kg can 10 kg bucket

SPECIAL GREASE FOOD2

FOOD2

Special grease for ball bearings and roller bearings

Typical applications:

• Applications with food contact

Suitability for

Low temperatures	+
High temperatures	_
Low friction,	
high speeds	О
High loads,	
low speeds	О
Vibratory stressing	О
Sealing effect	O
Relubrication	++

Rating

- ++ extremely suitable
- + very suitable
- o suitable
- less suitable



FAG Rolling Bearing Grease Arcanol FOOD2

Properties, applications: Bearing grease for food-applications according to USDA H1

Characteristics		Unit Value		Test method	
Marking:			KPF2K-30	DIN 51825	
Colour:			white		
Temperature range:		[°C]	-30 to 120	DIN 51825	
Longtime limit temperatu	ıre:	[°C]	70		
Specifications:			USDA H1		
Thickener:			aluminium complex		
Type of base oil:			white oil		
Base oil viscosity	at 40°C:	[mm²/s]	192	DIN 51562 - 1	
	at 100°C:	[mm²/s]	17,5	DIN 51562 - 1	
Identification letters of ac	dditives:		A, K, P		
Worked penetration:		[0,1 mm]	265-295	DIN ISO 2137	
Consistency:		[NLGI-CI.]	2	DIN 51818	
Drop point:		[°C]	230	DIN ISO 2176	
Oxidation stability Pressure drop after 100	h at 99 °C:	[kPa]	< 200	DIN 51808	
Water resistance:		[Range]	0	DIN 51807 - 1	
Flow pressure at -20 °C		[hPa]	< 550	DIN 51805	
Emcor Test:		[Corr.Grad]	0/0	DIN 51802	
Copper corrosion after 2	4 h/100 °C	[Corr.Grad]	1	DIN 51811	
Four ball weld load:		[N]		DIN 51350 - 4	
Wear scar of four ball tes	st:	[mm]	0,6	DIN 51350 - 5	
FE8 tests (rolling elemen	t wear)				
536048 - 75/ 50 - 35	v10 / v50) [mg]	7 / 9	DIN 51819	
536050 - 7,5/ 80 - 38	v10 / v50) [mg]	3 / 5	DIN 51819	
FE9 tests (grease service					
A / 1500 / 6000 - 120	F10/F50	[h]	266 / 333	DIN 51821	

Speed range:	Unit	Ball bearings and cylindrical roller bearings	Other roller bearings*)
peed limit n*dm	[mm/min]	500.000	200.000

^{*)} not cylindrical roller thrust bearings and spherical roller thrust bearings

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Available quantities:

1 kg can 10 kg bucket

QUANTITIES · EXAMPLES OF HOW TO ORDER

Arcanol grease	Previous desig- nation	70 g tube	250 g tube	400 g cartridge	1 kg can	5 kg bucket	10 kg bucket	25 kg hobbock	180 kg cask
MULTITOP	L135V			•	•	•		•	•
MULTI2	L78V		•	•	•	•	•		•
MULTI3	L71V			•	•	•	•	•	•
LOAD220	L215V				•		•		•
LOAD400	L186V			•	•	•	•		•
LOAD1000	L223V					•		•	•
TEMP90	L12V			•	•	•		•	•
TEMP110	L30V			•					
TEMP120	L195V				•	•		•	
TEMP200	L79V	•			•				
SPEED2,6	L75		•		•			•	
VIB3	L166V				•	•		•	
BIO2	_				•		•		
FOOD2	_				•		•		

Examples of how to order:

Order designation	Meaning
ARCA.GREASE.MULTITOP.5KG	FAG rolling bearing grease Arcanol MULTITOP (5 kg bucket)
ARCA.GREASE.MULTI2.10KG	FAG rolling bearing grease Arcanol MULTI2 (10 kg bucket)
ARCA.GREASE.MULTI3.25KG	FAG rolling bearing grease Arcanol MULTI3 (25 kg hobbock)
ARCA.GREASE.LOAD220.180KG	FAG rolling bearing grease Arcanol LOAD220 (180 kg cask)
ARCA.GREASE.LOAD400.400G	FAG rolling bearing grease Arcanol LOAD400 (400 g cartridge)
ARCA.GREASE.LOAD1000.5KG	FAG rolling bearing grease Arcanol LOAD1000 (5 kg bucket)
ARCA.GREASE.TEMP90.1KG	FAG rolling bearing grease Arcanol TEMP90 (1 kg can)
ARCA.GREASE.TEMP110.400G	FAG rolling bearing grease Arcanol TEMP110 (400 g cartridge)
ARCA.GREASE.TEMP120.25KG	FAG rolling bearing grease Arcanol TEMP120 (25 kg hobbock)
ARCA.GREASE.TEMP200.70G	FAG rolling bearing grease Arcanol TEMP200 (70 g tube)
ARCA.GREASE.SPEED2,6.250G	FAG rolling bearing grease Arcanol SPEED2,6 (250 g tube)
ARCA.GREASE.VIB3.25KG	FAG rolling bearing grease Arcanol VIB3 (25 kg hobbock)
ARCA.GREASE.BIO2.1KG	FAG rolling bearing grease Arcanol BIO2 (1 kg can)
ARCA.GREASE.FOOD2.10KG	FAG rolling bearing grease Arcanol FOOD2 (10 kg bucket)

RELUBRICATION DEVICES

FAG grease gun

Grease guns are used for lubricating bearings manually via lubrication nipples. Relubrication is easy, clean and swift if FAG grease guns with a reinforced hose are used.



Automatic FAG lubricators Motion Guard Compact and Motion Guard Champion

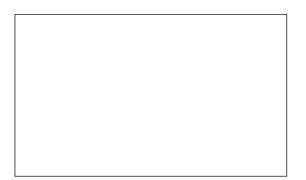
A sufficient amount of fresh grease is being constantly supplied to the contact areas of the rolling bearings by an automatic lubricator. The devices extend lubrication and maintenance intervals and reduce plant downtimes.

The lubricators can be used everywhere, making costly central lubrication plants superfluous.



Suitability of the relubrication devices for Arcanol greases						
Lubricating Grease gun grease Arcanol		Automatic lub Motion Guard <i>Compact</i>	ricators Motion Guard <i>Champion</i>	Dosing devices ARCA.PUMP.25	ARCA.PUMP.180	
MULTITOP	+	-	+	+	+	
MULTI2	+	_	+	_	+	
MULTI3	+	_	+	+	+	
LOAD220	+	_	+	_	+	
LOAD400	+	+	+	_	+	
LOAD1000	+	+	+	+	+	
TEMP90	+	+	+	+	+	
TEMP110	+	_	+	_	_	
TEMP120	+	+	+	+	_	
TEMP200	+	+	+	_	_	
SPEED2,6	+	_	+	+	_	
VIB3	+	-	+	+	_	
BIO2	+	-	+	-	_	
FOOD2	+	+	+	_	_	

NOTES



FAG Kugelfischer Georg Schäfer AG

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