

Schaeffler Arcanol Lubricants

Industry 4.0 Aftermarket Accessories



Agenda

- 1 Importance of lubrication
- 2 Value proposition
- 3 Arcanol portfolio & applications
- 4 Accessories
- 5 Portfolio update
- 6 Success case
- 7 Useful further information



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- 1 Importance of lubrication
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Lubricant is the 5th element of the rolling bearing



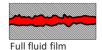
- 1 Outer Ring
- 2 Inner Ring
- 3 Rolling Element
- 4 Cage
- 5 Lubricant / Grease

Main Function of the grease lubricant in a rolling bearing:

 Separation of the friction partner in the rolling contact.







Boundary lubrication condition

Mixed lubrication condition

Full fluid film lubrication condition

- "Sealing" function to prevent contamination.
- Reduction of thermal energy in the bearing.
- Reservoir function for the oil.

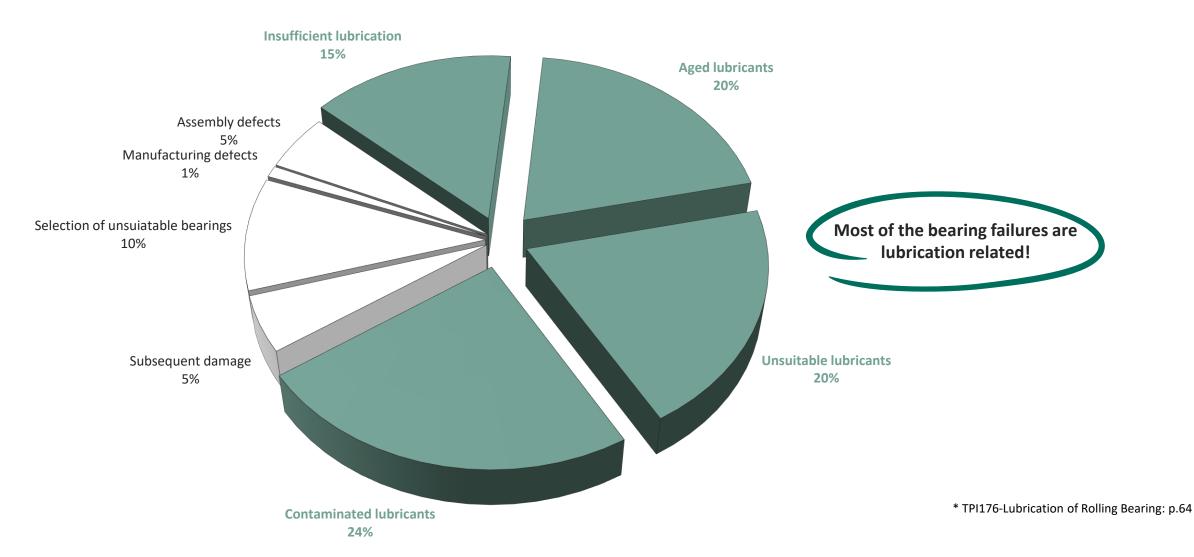
Reduction of rolling friction.

Reduction of rolling element, cage and raceway wear.

Main contributor for energy efficiency.

Main contributor for cost saving.

Reasons for bearing failures*



Importance of lubrication

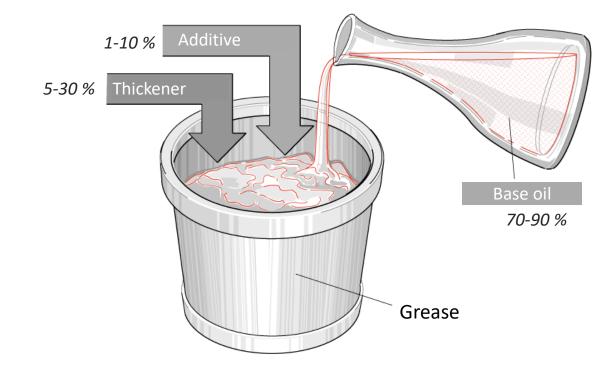
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Definition

Grease:

A grease lubricant is a solid to semi-fluid dispersion of a thickening agent in a liquid. Inclusion of additives can adjust special properties such as resistance to oxidation and wear.







Grease content

Base Oil

 Most greases produced today use mineral oil as their fluid components.

70-90%

- These mineral oil-based greases typically provide satisfactory performance in most industrial applications.
- In temperature extremes (low or high), a grease that utilizes a synthetic base oil will provide better stability.

Thickener

• The thickener is a material that, in combination with the selected lubricant, will produce the solid to semifluid structure.

- The **primary type** of thickener used in current grease is **metallic soap**. These soaps include lithium, aluminum, clay, polyurea, sodium and calcium.
- Lately, complex thickener-type greases are gaining popularity. They are being selected because of their high dropping points and excellent load-carrying abilities.
- Complex greases are made by combining the conventional metallic soap with a
 complexing agent. The most widely used complex grease is lithium based. These
 are made with a combination of conventional lithium soap and a low-molecularweight organic acid as the complexing agent.
- Non soap thickeners are also gaining popularity in special applications such as high-temperature environments. Bentonite and silica aerogel are two examples of thickeners that do not melt at high temperatures.

Additives

5-30%

1-10%

- Additives can play several roles in a lubricating grease.
- The most common additives are oxidation and rust inhibitors, extreme pressure, anti wear, and friction-reducing agents.
- In addition to these additives, boundary lubricants such as molybdenum disulfide (moly) or graphite may be suspended in the grease to reduce friction and wear without adverse chemical reactions to the metal surfaces during heavy loading and slow speeds.

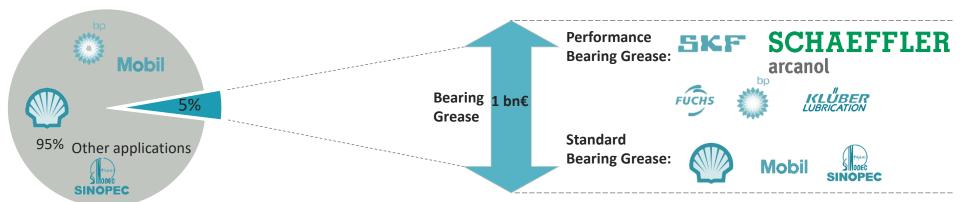


The right selection of the components and their formular is key to ensure the right grease is offered for the application



Big growth potential for Schaeffler Arcanol bearing greases

Global lubricants market (2021: > 20 bn€)

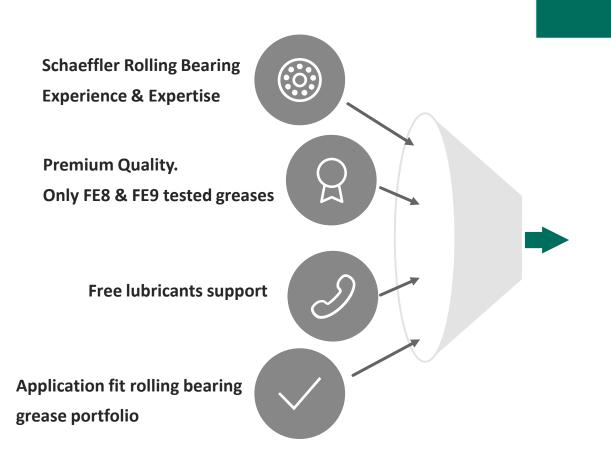


From all rolling bearing component, only the lubricant has Aftermarket relevance...

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Why to buy Arcanol?



Benefit

Cost savings for end users!



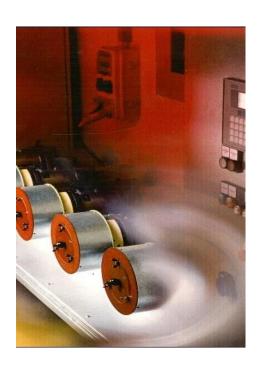
due to:

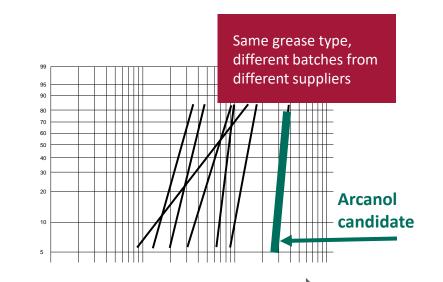
- ..less downtime
- ..higher efficiency

because of:

- ..reduced bearing wear
- ..increased grease life
- ..always correct lubricant used
- ..correct quantity used in the correct time

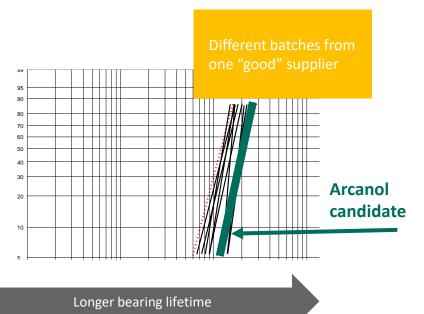
FE8/FE9 Rolling bearing lubrication testing – Identification of grade A grease





Longer bearing lifetime

Same grease types from different suppliers lead to a significant bearing lifetime spread!



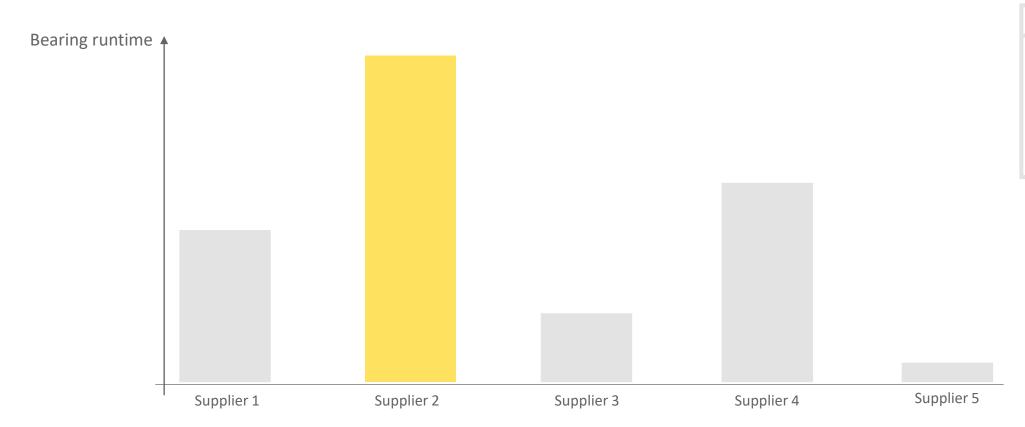
so "good" groosos show signifi

Also "good" greases show significant variation in the lifetime!

How to get the best of the best for the usage as Arcanol lubricants?



Differences in the grease supplier quality – bearing runtime test



Test input data

 $n = 6,000 \text{ min}^{-1}$

 $F_a = 1.5 \text{ kN}$

 $\theta = 120 \, ^{\circ}\text{C}$

FAG FE9 7206B Value proposition

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Why to buy Arcanol?





Arcanol is the A grade grease specially developed and comprehensively tested for the usage in rolling bearings

Value proposition

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Why to buy Arcanol?



✓ Comprehensive Experience:

 Schaeffler is developing & testing special grease for the usage in rolling bearings since several decades → Special suitability for rolling bearings.



✓ Quality:

- The grease are comprehensively analyzed and tested for the usage in rolling bearings until they are integrated in the Arcanol product portfolio (e. g. FEG and DIN51819, FE9 and DIN51821...)
- Additionally, every batch is comprehensively analyzed according to the delivery condition and only the A grade is accepted → 100% quality control

✓ Application fit portfolio:



 Schaeffler has established a Arcanol product portfolio which covers almost every kind of application

✓ One single supplier responsible for bearings and lubrication systems:

- Customer support for the selection of the right Arcanol in the context of the complex tribological interaction of the grease and the rolling bearing
- Wholistic failure analysis with system expertise of tribology and rolling bearing

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Product Portfolio

Broad portfolio consisting of 21 greases.

Market requirements

Moderate to high loads

Typical sectors and application examples

Regional Standard Greases

XTRA3 India , GRAZA South America, MULTI3-E25B-CON Middle East & Africa

MULTI2, MULTI3, MULTITOP

- Broad speed range
- Broad application range
- Local greases to meet local requirements



- High load requirements
 - Line contact
 - Higher temperatures
 - Vibrations

Heavy Duty Greases

LOAD150, LOAD220, LOAD400, LOAD460, LOAD1000

- Wide temperature range
 - Moderate to high loads
 - Low startup temperatures

High Temperature Greases

TEMP90, TEMP110, TEMP120, TEMP200

Special Requirements

SPEED2,6, VIB3, FOOD2, CLEAN-M, MOTION2

- Special highspeed requirements
- Special food production requirements such as Halal
- Special greases for oscillations

















Multipurpose

Greases

Performance

Arcanol portfolio & applications

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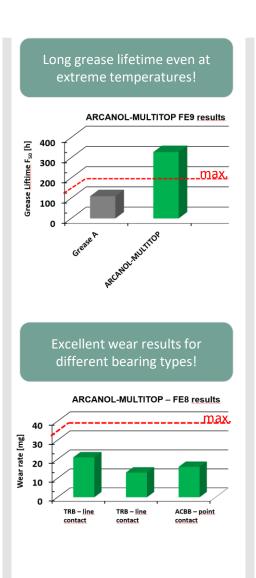
MULTIPURPOSE: Arcanol MULTITOP





Available containers

Container	SAP no.	Designation
250 g tube	019143990-0000-10	ARCANOL-MULTITOP-250G#K
400 g cartridge	019144016-0000-11	ARCANOL-MULTITOP-400G#K
1 kg can	038652161-0000-12	ARCANOL-MULTITOP-1KG#K
5 kg bucket	038652170-0000-10	ARCANOL-MULTITOP-5KG#K
12,5 kg bucket	069455490-0000-10	ARCANOL-MULTITOP-12,5KG#S
25 kg hobbock	019144008-0000-10	ARCANOL-MULTITOP-25KG#K
50 kg hobbock	-	-
180 kg drum	019143974-0000-10	ARCANOL-MULTITOP-180KG#K





Typical applications:

 Motor vehicles, Rail vehicles, rolling mills, construction machinery, spinning and grinding spindles

Main properties:

 High speeds, high loads, low and high temperatures, low noise, low friction

MULTIPURPOSE: Arcanol MULTI2





Available containers

Container	SAP no.	Designation
250 g tube	019003471-0000-11	ARCANOL-MULTI2-250G#K
400 g cartridge	019143893-0000-11	ARCANOL-MULTI2-400G#K
1 kg can	038652129-0000-10	ARCANOL-MULTI2-1KG#K
5 kg bucket	019143907-0000-10	ARCANOL-MULTI2-5KG#K
12,5 kg bucket	069455570-0000-10	ARCANOL-MULTI2-12,5KG#S
25 kg hobbock	019143885-0000-10	ARCANOL-MULTI2-25KG#K
50 kg hobbock	-	-
180 kg drum	019143850-0000-10	ARCANOL-MULTI2-180KG#K

Small size 20g tube available!

ARCANOL-MULTI2-20G 019143877-0000-10



Typical applications:

 Small electric motors, agricultural and construction machinery, household appliances

Main properties:

• Deep groove rolling bearing OD < 62 mm

MULTIPURPOSE: Arcanol MULTI3





Available containers

Container	SAP no.	Designation
250 g tube	019143940-0000-10	ARCANOL-MULTI3-250G#K
400 g cartridge	016727355-0000-11	ARCANOL-MULTI3-400G#K
1 kg can	038684187-0000-11	ARCANOL-MULTI3-1KG#S
5 kg bucket	038652137-0000-11	ARCANOL-MULTI3-5KG#K
12,5 kg bucket	069455643-0000-10	ARCANOL-MULTI3-12,5KG#S
25 kg hobbock	038652153-0000-10	ARCANOL-MULTI3-25KG#K
50 kg hobbock	-	-
180 kg drum	019143915-0000-10	ARCANOL-MULTI3-180KG#K



Typical applications:

 Large electric motors, agricultural and construction machinery, fans

Main properties:

• Deep groove rolling bearing OD > 62 mm

Performance High Load: Arcanol LOAD150





Available containers

Container	SAP no.	Designation
250 g tube	-	-
400 g cartridge	055358152-0000-10	ARCANOL-LOAD150-400G#S
1 kg can	055359159-0000-10	ARCANOL-LOAD150-1KG#S
5 kg bucket	-	-
12,5 kg bucket	069455686-0000-10	ARCANOL-LOAD150-12,5KG#S
25 kg hobbock	-	-
50 kg hobbock	059810025-0000-10	ARCANOL-LOAD150-50KG#S
180 kg drum	094709084-0000-10	ARCANOL-LOAD180-50KG#S



Typical applications:

• Machine tools, Slewing rings

Main properties:

High loads, wide speed range, swivel motion

Performance High Load: Arcanol LOAD220





Available containers

Container	SAP no.	Designation
250 g tube	-	_
400 g cartridge	064741028-0000-10	ARCANOL-LOAD220-400G#S
1 kg can	038652099-0000-10	ARCANOL-LOAD220-1KG#K
5 kg bucket	-	-
12,5 kg bucket	069455724-0000-10	ARCANOL-LOAD220-12,5KG#S
25 kg hobbock	019143761-0000-10	ARCANOL-LOAD220-25KG#K
50 kg hobbock	-	-
180 kg drum	019143745-0000-10	ARCANOL-LOAD220-180KG#K



Typical applications:

• Rolling mill plant, rail vehicles

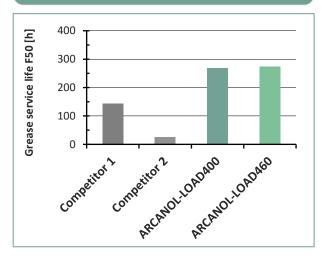
Main properties:

• High load, wide speed range, high humidity

Performance High Load: Arcanol LOAD400



LOAD400 & LOAD460 show potential for extended grease service life.



Available containers

Container	SAP no.	Designation
250 g tube	-	-
400 g cartridge	019143818-0000-11	ARCANOL-LOAD400-400G#K
1 kg can	038652102-0000-10	ARCANOL-LOAD400-1KG#K
5 kg bucket	019143834-0000-10	ARCANOL-LOAD400-5KG#K
12,5 kg bucket	069455740-0000-10	ARCANOL-LOAD400-12,5KG#S
25 kg hobbock	019143800-0000-10	ARCANOL-LOAD400-25KG#K
50 kg hobbock	019143826-0000-10	ARCANOL-LOAD400-50KG#K
180 kg drum	019143788-0000-10	ARCANOL-LOAD400-180KG#K



Typical applications:

• Windmill applications, Main bearings

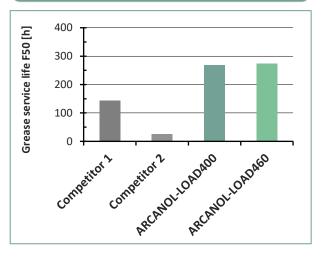
Main properties:

 Very high loads, moderate temperatures, moderate speeds, shocks, low starting temperature, low friction

Performance High Load: Arcanol LOAD460







Available containers

Container	SAP no.	Designation
250 g tube	-	-
400 g cartridge	065825144-0000-10	ARCANOL-LOAD460-400G#S
1 kg can	065825390-0000-10	ARCANOL-LOAD460-1KG#S
5 kg bucket	065826825-0000-10	ARCANOL-LOAD460-5KG#S
12,5 kg bucket	069455864-0000-10	ARCANOL-LOAD460-12,5KG#S
25 kg hobbock	065827066-0000-10	ARCANOL-LOAD460-25KG#S
50 kg hobbock	065827120-0000-10	ARCANOL-LOAD460-50KG#S
180 kg drum	065827180-0000-10	ARCANOL-LOAD460-180KG#S



Typical applications:

• Windmill applications, Main bearings

Main properties:

 Bearings with Pin type cage, excellent water resistance, corrosion protection, false brinelling, vibrations.

Performance High Load: Arcanol LOAD1000





Available containers

Container	SAP no.	Designation
250 g tube	-	-
400 g cartridge	-	-
1 kg can	-	-
5 kg bucket	019003463-0000-10	ARCANOL-LOAD1000-5KG#K
12,5 kg bucket	-	-
25 kg hobbock	019143729-0000-10	ARCANOL-LOAD1000-25KG#K
50 kg hobbock	066624860-0000-10	ARCANOL-LOAD1000-50KG#S
180 kg drum	019143710-0000-10	ARCANOL-LOAD1000-180KG#K



Typical applications:

• Mining machinery, Crusher, construction machinery,

Main properties:

 Very high loads, moderate temperatures, low speeds, shock, large bearings Arcanol portfolio & applications

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Performance High Temperature: Arcanol TEMP90





Available containers

Container	SAP no.	Designation
250 g tube	-	-
400 g cartridge	019144172-0000-10	ARCANOL-TEMP90-400G#K
1 kg can	038652188-0000-10	ARCANOL-TEMP90-1KG#K
5 kg bucket	038652196-0000-10	ARCANOL-TEMP90-5KG#K
12,5 kg bucket	-	-
25 kg hobbock	019144164-0000-10	ARCANOL-TEMP90-25KG#K
50 kg hobbock	-	-
180 kg drum	019144148-0000-10	ARCANOL-TEMP90-180KG#K



Typical applications:

• Couplings, electric motors, motor vehicles

Main properties:

• High temperatures, high loads

Arcanol portfolio & applications

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Performance High Temperature: Arcanol TEMP110





Available containers

Container	SAP no.	Designation
250 g tube	-	-
400 g cartridge	019144075-0000-10	ARCANOL-TEMP110-400G#K
1 kg can	019144067-0000-10	ARCANOL-TEMP110-1KG#K
5 kg bucket	-	_
12,5 kg bucket	-	-
25 kg hobbock	-	-
50 kg hobbock	038705478-0000-10	ARCANOL-TEMP110-50KG#K
180 kg drum	-	-



Typical applications:

• Electrical equipment, motor vehicles

Main properties:

• High temperatures, high speeds

Performance High Temperature: Arcanol TEMP120





Available containers

Container	SAP no.	Designation
250 g tube	-	-
400 g cartridge	089855167-0000-10	ARCANOL-TEMP120-400G#S10
1 kg can	038652200-0000-10	ARCANOL-TEMP120-1KG#K
5 kg bucket	019144113-0000-10	ARCANOL-TEMP120-5KG#K
12,5 kg bucket	-	-
25 kg hobbock	019144105-0000-10	ARCANOL-TEMP120-25KG#K
50 kg hobbock	-	-
180 kg drum	-	-



Typical applications:

Steel industry, continuous casting plants

Main properties:

• High temperatures, high loads

Performance High Temperature: Arcanol TEMP200





Available containers

Container	SAP no.	Designation
70 g tube	038652218-0000-10	ARCANOL-TEMP200-70G#K
400 g cartridge	-	-
1 kg can	019144121-0000-10	ARCANOL-TEMP200-1KG#K
5 kg bucket	-	-
12,5 kg bucket	-	-
25 kg hobbock	-	-
50 kg hobbock	-	-
180 kg drum	-	-



Typical applications:

• Track rollers in automatic baking equipment, piston pins in compressors, kiln trucks, chemical plants

Main properties:

Very high temperatures, chemically aggressive environments

Special requirements: Arcanol SPEED2,6



Available containers

Container	SAP no.	Designation			
250 g tube	019144040-0000-10	ARCANOL-SPEED2,6-250G#K			
400 g cartridge	062447610-0000-10	ARCANOL-SPEED2,6-400G#S			
1 kg can	019144032-0000-10	ARCANOL-SPEED2,6-1KG#K			
5 kg bucket	-	-			
12,5 kg bucket	-	-			
25 kg hobbock	019144059-0000-10	ARCANOL-SPEED2,6-25KG#K			
50 kg hobbock	-	-			
180 kg drum	-	-			



Typical applications:

• Machine tools, spindle bearings, instruments

Main properties:

• Very high speed, medium temperatures

Special requirements: Arcanol VIB3

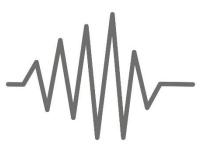




Available containers

Container	SAP no.	Designation		
250 g tube	-	-		
400 g cartridge	055289568-0000-10	ARCANOL-VIB3-400G#S		
1 kg can	038652226-0000-10	ARCANOL-VIB3-1KG#K		
5 kg bucket	019144210-0000-10	ARCANOL-VIB3-5KG#K		
12,5 kg bucket	-	-		
25 kg hobbock	019144202-0000-10	ARCANOL-VIB3-25KG#K		
50 kg hobbock	055289746-0000-10	ARCANOL-VIB3-50KG#S		
180 kg drum	-	-		





Typical applications:

• Blade adjusters in wind turbine rotor, vibration transport system, vibration screen

Main properties:

• High temperature, high loads, oscillating motions

Arcanol portfolio & applications

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Special requirements: Arcanol FOOD2





Available containers

Container	SAP no.	Designation
250 g tube	-	-
400 g cartridge	019143648-0000-10	ARCANOL-FOOD2-400G#K
1 kg can	019143621-0000-10	ARCANOL-FOOD2-1KG#K
5 kg bucket	-	-
12,5 kg bucket	070903069-0000-10	ARCANOL-FOOD2-12,5KG#S
25 kg hobbock	019143630-0000-10	ARCANOL-FOOD2-25KG#K
50 kg hobbock	-	-
180 kg drum	-	-



Typical applications:

 Various applications in the food & beverage sector such as handling systems

Main properties:

• NSF, Kosher, Halal certified

Special requirements: Arcanol CLEAN-M



Available containers

Container	SAP no.	Designation
250 g tube	069428611-0000-10	ARCANOL-CLEAN-M-250G#S
400 g cartridge	069429111-0000-10	ARCANOL-CLEAN-M-400G#S
1 kg can	069429154-0000-10	ARCANOL-CLEAN-M-1KG#S
5 kg bucket	-	-
12,5 kg bucket	-	-
25 kg hobbock	-	-
50 kg hobbock	-	-
180 kg drum	-	-



Typical applications:

• Semiconductor or flat panel display manufacturing

Main properties:

- Low particle emission in rolling applications
- Suitable for moderate vacuum conditions
- High relubrication intervals

Special requirements: Arcanol MOTION2



Available containers

Container	SAP no.	Designation
250 g tube	080265928-0000-10	ARCANOL-MOTION2-250G#S10
400 g cartridge	080266258-0000-10	ARCANOL-MOTION2-400G#S10
1 kg can	080266339-0000-10	ARCANOL-MOTION2-1KG#S
5 kg bucket	080266673-0000-10	ARCANOL-MOTION2-5KG#S
12,5 kg bucket	080266754-0000-10	ARCANOL-MOTION2-12,5KG#S
25 kg hobbock	080267009-0000-10	ARCANOL-MOTION2-25KG#S
50 kg hobbock	080267157-0000-10	ARCANOL-MOTION2-50KG#S
180 kg drum	-	-



Typical applications:

• Slewing rings in Wind Turbines

Main properties:

Ball and roller bearings with oscillating operations

Portfolio summary and selection table

Assistant APP planned.

	Multipurpose			Performance High Loads				Performance High Temperature			Performance special requirements						
	MULTITOP	MULTI2	MULTI3	LOAD150	LOAD220	LOAD400	LOAD460	LOAD1000	ТЕМР90	TEMP110	TEMP120	TEMP200	SPEED2,6	VIB3	FOOD2	CLEAN-M	MOTION2
Base Oil	partl.synth oil	mineral oil	mineral oil	mineral oil	mineral oil	mineral oil	mineral oil	mineral oil	partl.synth oil	partl.synth oil	partl.synth oil	polyether oil	synthetic oil	mineral oil	synthetic oil	ester oil	synthetic oil
Thickener	Lithium	Lithium	Lithium	Lithium complex	Lithium calcium	Lithium calcium	Lithium calcium	Lithium calcium	Polyurea	Lithium complex	Polyurea	PTFE	Lithium complex	Lithium complex	Aluminium complex	Polyurea	Lithium
Base oil viscosity (mm²/s at 40 °C)	82	110	110	160	245	400	400	1000	148	130	400	550	25	170	150	103	50
NLGI Class	2	2	3	2	1-2	2	1	2	3	2	2	2	2-3	3	2	2	2
Operating temperature (°C)	-50 +140	-30 +120	-30 +120	-20 +140	-20 +140	-30 +130	-30 +130	-20 +130	-40 +160	-40 +1 60	-30 +180	-30 +250	-20 +140	-30 +150	-30 +120	-30 +180	-40 +130
Longtime limit temperature (°C)	+80	+75	+75	+90	+80	+80	+80	+80	+90	+110	+120	+200	+70	+90	+70	+90	+70
Typical applications	Ball and roller bearings, Rolling mills, Construction machinery, Automotive engineering, Spinning and Grinding spindles	Ball bearing upto 62mm OD Small electric motors, Agricultural machines, Construction machines, Household machines	Ball bearing > 60 mm OD Large electric motors, Agricultural machines, Construction machines, Ventilators	Ball, Roller, Needle roller bearings, Linear guidance systems in machine tools, Truck wheel bearings	Ball and roller bearings in rolling mills, rail vehicles, paper machinery	Ball and roller bearings, main bearings in wind turbines construction machinery	Ball and roller bearings, main bearings in wind turbines, bearings with pin cages	Ball and roller bearings in mining machinery, construction machinery, cement plants	bearings in clutches, electric motors, automotive	Ball and roller bearings in electrical equipments, automotive engineering	Ball and roller bearings in continuous casting plants, paper machines dryer section	Ball and roller bearings in guided rollers in baking machines, kiln trucks and chemical plants, piston pins of compressors	Ball bearings in machine tools, spindle bearings, rotary table bearings, instrument bearings		bearings of applications with food contact,	Ball, roller and needle roller bearings as well as linear guidance system in clean room applications	Ball and roller bearings in oscillating operation, slewing rings in wind turbines
Low tempeature	++	+	+				+		++	++	+	+	++	+	+	++	++
High temperature	+			+					+	++	++	++		+	-	++	
Low friction, high speed	+			-	-	-	-			+	-		++	-			-
High loads, low speeds				++	++	++	++	++			++	+					+
Vibrations	+		+	+	+	+	+	+					-	++			++
Sealing properties			+	+	+	+		+	+		+			+			+
Suitable for relubrication	++	+	+	+	+	+	++	+	+					-	++	+	

ok

not suitable

less suitable

very suitable highly suitable

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Drum pump products | Available for 25kg, 50kg and 180kg sizes



1 Pneumatic Pump



2 Metering pistol grease gun



3 High pressure hose



4 Manual lever pump



5 6 Adapter for Arcalub C1

7) Dust cover



8 Follower piston



For all accessories and details please see TPI252:

<u>Lubricators</u> | <u>Schaeffler Germany</u>

Lever grease gun for cartridges









Lever grease gun

- 1 Hose for taper nipples to DIN71412
- Hose including side coupling for nipples to DIN 3404-16

Example: 400g cartridge Arcanol TEMP90

Arcanol MOUNTINGPASTE2 and ANTICORROSIONOIL

Typical applications:

Mounting of bearings, Mounting in general press fit

Main properties:

- Protects shaft from fretting corrosion and extends useful life
- High temperature range of-30°C to +150°C
- Non-hazardous and easy handling





Typical applications & properties

- Spray for metal surfaces of devices, machines and machine elements to give long term anti-corrosion protection
- Neutral in behavior towards all conventional rolling bearing greases and oils



Available container	Container	SAP#	Designation marketing!			
	70g	094099766-0000-10	ARCANOL-MOUNTINGPASTE2-70G			
	250g	094099782-0000-10	ARCANOL-MOUNTINGPASTE2-250G			
	400g	094099790-0000-10	ARCANOL-MOUNTINGPASTE2-400G			
	1 kg	094099812-0000-10	ARCANOL-MOUNTINGPASTE2-1KG			

Available container Container		SAP#	Designation			
	400ml	019143540-0000-10	ARCANOL-ANTICORROSIONOIL-400G			

Agenda

- 1 Importance of lubrication
- 2 Value proposition
- 3 Arcanol portfolio & applications
- 4 Accessories
- 5 Portfolio update
- 6 Success case
- Useful further information

Arcanol Portfolio Updates

Portfolio Optimization

<u>...</u>



New products.

MOUNTINGPASTE2



Development under discussion.

 Enhanced FOOD Industry grease portfolio



Arcanol "Linear"



Arcanol LOAD680



• Biodegradable grease







To be phased out

- Arcanol L218
- Arcanol L92
- Arcanol L252 (Will be merged with Arcanol SPEED2,6)
- Arcanol L271 (Will be merged with Arcanol LOAD150)

Relabeling





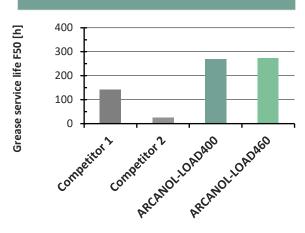
Agenda

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Arcanol in wind energy applications: Strong partner for main bearings



Superior performance of Arcanol LOAD400 and LOAD460 grease!









SIEMENS

Some global windenergy customer:





- → Sales increase >25% in 2020 through wind power in China
- → Strong further sales increase for wind in China planned in 2021

How come?

- → Arcanol recommended by Schaeffler application engineering during the bearing design phase
- System of bearing and corresponding high performance Arcanol grease suggested to customers

Review 2020: Schaeffler Arcanol lubricants at a glance

New big wind sector

customer for Arcanol
LOAD400 & LOAD460:
GOLDWIND China

Arcanol in new SCHAEFFLER design since Q4/2020.



New Arcanol
MOUNTINGPASTE2
available since Q4/2020

Local filling of
Arcanol MULTI2 started in
SCHAEFFLER China
(Taicang Campus)

SCHAEFFLER arcanol

180 kg barrels sold: 3640 pieces

= stacked height of >3200m (2019: 2702 pieces)

Portfolio: 18 premium bearing greases. 3 local standard greases. 2 auxiliary service products

>1.000.000 kg
Arcanol greases sold

+13% Arcanol portfolio sales growth yoy

443.936 Arcanol product units sold

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Useful further information SCHAEFFLER

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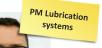


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Useful links

1. Product Portfolio Arcanol Lubricants (website):

Arcanol Rolling Bearing Greases | Publications | Schaeffler Group

2. Technical Product Information Arcanol - TPI168 (website):

<u>Arcanol Rolling Bearing Greases | Publications</u>

3. Overview Arcanol Lubricants (website):

Arcanol Lubricants

4. Arcanol - Material Safety Data Sheets (website):

Arcanol MSDS

5. Arcanol - Technical Data Sheets with product information (website):

Arcanol Technical Data Sheets

6. Arcanol Lubricants & Lubricator systems (SConnect):

<u>Lubrication Systems & Arcanol Lubricants EN | Schaeffler CONNECT</u>

7. Customer Success Story with DONGFANG Electric China / LOAD460 in wind turbines (website):

Customer project wind turbines

8. Technical product information lubricators (website):

<u>Lubricators | Publications</u>

9. Digital Customer Platform and E-commerce channel medias business (website):

Schaeffler medias | Product catalogue & consulting platform

10. (Technical) Support and general questions:

Technical support

Mathias Feuser

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