



BECHEM Avantin
Coolant Lubricants



BECHEM Avantin

A cool technology

BECHEM – Lubrication solutions for industry

As the oldest German manufacturer of industrial lubricants, BECHEM today is one of the leading producers of high-quality special lubricants and metal working fluids.










BECHEM products convince by innovative formulations in the most diverse of industrial applications – in machining and forming metal working processes, in coating technology and as for-life lubricants in various technical components.

A strong network of distributors and several national and international production sites ensure that BECHEM products are readily available worldwide.





Tomorrow's technologies. Today.

PICTOGRAMS

APPLICATIONS

- Grinding 
- Drilling 
- Milling 
- Honing 
- Turning 
- Broaching 
- Deep drilling 
- Automotive industry 
- Aviation industry 

PROPERTIES

- High loads 
- Good rinsing performance 
- Low foaming 
- Extended tool life 

The right solution – BECHEM Avantin

BECHEM Avantin is a product series of water-miscible coolant lubricants that have ensured process reliability millions of times for decades. From the all-rounder for multi-metal applications and the expert on series processing in automotive production lines, to the specialist in broaching and deep drilling operations, BECHEM offers optimal and economical product solutions. High-quality and globally available raw materials combined with the exceptional BECHEM development know-how form the basis for processing fluids that meet highest standards. The adjustment to the permanently changing process parameter guarantee the continuous development of our products. BECHEM Avantin is as complex as the field of metal cutting itself, and thus the ideal process support that meets most demanding standards.

BECHEM Avantin stays cool even when things get hot. Processes that involve high thermal loads are ideally supported by oxidation resistant, semi and fully synthetic product concepts. With minimal consumption, BECHEM Avantin impresses by excellent cooling, outstanding corrosion protection, and excellent removal of process materials.



Large bore piston manufacturing with BECHEM Avantin



BECHEM Avantin was developed to achieve optimal profitability for all metal-cutting machining processes.

PRODUCT	Materials to be processed					Lubrication performance	Process / Applications	Properties
	Mineral oil ca. [%]	Amin-free	Boron-free	FAD-free				
BECHEM Avantin 300 🔍👁️👉👈👉👈👉👈	Cast iron, steel	0	-	-	-	💧	Grinding, disc grinding, high-pressure test medium, peeling of bright steel	Good corrosion protection, good residue behaviour, excellent foam control
BECHEM Avantin 402 👁️👉👈👉👈	Cast iron, steel	0	-	●	-	💧	General cutting and grinding operations, peeling of bright steel	Fully synthetic formulation with excellent temporary corrosion protection
BECHEM Avantin 320 👁️👉👈👉👈	Cast iron, steel	19	-	-	●	💧	General cutting and grinding operations, peeling of bright steel	Semi-synthetic formulation, excellent rinsing capacity, very low consumption
BECHEM Avantin 360 👁️👉👈👉👈👉👈	Cast iron, steel	55	-	-	-	💧💧	General cutting and grinding operations, peeling of bright steel	Excellent corrosion protection, good biostability, excellent wetting behaviour, good skin compatibility, for central and single lubrication systems
BECHEM Avantin 331 👁️👉👈👉👈👉👈	Cast iron, steel	30	-	-	●	💧💧	General cutting and grinding operations	Universally applicable semi-synthetic formulation, very good rinsing performance
BECHEM Avantin 341 👁️👉👈👉👈👉👈	Cast iron, steel, aluminum	30	-	-	-	💧💧	General to demanding cutting operations and grinding	Semi-synthetic formulation with excellent rinsing properties and optimised performance
BECHEM Avantin 423 👁️👉👈👉👈👉👈	Cast iron, steel	25	-	●	●	💧💧💧	General to demanding cutting operations and grinding	Universally applicable semi-synthetic formulation, highly additivated, very good rinsing performance
BECHEM Avantin 3332 👁️👉👈👉👈👉👈	Cast iron, steel aluminum	30	-	-	-	💧💧💧	General to demanding cutting operations and grinding	Semi-synthetic formulation with good rinsing properties and optimised performance
BECHEM Avantin 335 👁️👉👈👉👈👉👈	Cast iron, alloy steel	39	-	-	-	💧💧💧	Demanding cutting operations, excellent material removal rate when processing forging parts	Universal application with high power density
BECHEM Avantin 405 👁️👉👈👉👈	Cast iron, steel	0	-	●	●	💧💧	General cutting operations, high-performance milling, thread rolling	Fully synthetic high-performance formulation, excellent temporary corrosion protection

All indications and values correspond to latest knowledge and do not represent any product specification.

💧 = low ... 💧💧💧💧 = very high

Systematic process reliability

When processing sensitive aluminium materials, BECHEM Avantin produces high-precision surfaces, e.g. in demanding internal machining processes of shock absorber tubes. In this regard, the suitable combination of the right coolant lubricant with the used high-performance tools is crucial for the result. BECHEM Avantin also ensures maximum efficiency and sustainability in the manufacturing of innovative transmission components. Just two examples for pioneering BECHEM technology.

PRODUCT	Materials to be processed	Mineral oil ca. [%]	Amin-free	Boron-free	FAD-free	Lubrication performance	Process / Applications	Properties
BECHEM Avantin 270 	Steel, aluminum, non-ferrous metals	70	•	•	•	•	Allround processing at multi-metal-mix	Universal application at different water hardnesses
BECHEM Avantin 251 	Steel, aluminum	45	•	•	•	••	General to demanding cutting operations and grinding	Universal application at different water hardnesses
BECHEM Avantin 261 	Steel, aluminum, non-ferrous metals	60	•	•	•	•••	Allround processing at multi-metal-mix	Universal application at different water hardnesses
BECHEM Avantin 451 	Cast iron, steel, Aluminum, titanium	45	-	•	•	•••	General to demanding cutting operations, machining of engine blocks and cylinder heads, gear boxes, pistons	Universal formulation with high performance potential for excellent surface qualities
BECHEM Avantin 361 	High-alloy steel, aluminum	55	-	-	•	•••	General to demanding cutting operations, reaming, deep drilling, complex machining processes	Excellent surface qualities, universal use, very good temporary corrosion protection
BECHEM Avantin 361 I-N 	Cast iron, steel, aluminum	50	-	-	•	•••	General to demanding cutting operations, machining of motor blocks and cylinder heads	Universal formulation for excellent surface qualities, optimal rinsing performance
BECHEM Avantin 455 	Aluminum, high-alloy steel	35	-	•	•	••••	Demanding cutting operations	Excellent surface qualities especially of aluminum alloys used in automotive and aerospace industry
BECHEM Avantin 355 	Aluminum, high-alloy steel	45	-	-	•	•••••	Highest cutting performance, Powertrain	Excellent surface qualities especially of aluminum alloys used in the automotive industry
BECHEM Avantin 255 	Aluminum, high-alloy steel	42	•	•	-	•••••	Highest cutting performance, Powertrain	Universal, high-performance formulation for high and low water hardness

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• = low ... ••••• = very high

Finely-dispersed BECHEM Avantin formulations enable minimal coolant lubricant discharge through excellent flow behavior.



Reliable in use

Coolant lubricants from the BECHEM Avantin series lubricate points susceptible to wear. Simultaneously the process heat is dissipated away from the machining zone. Clean machines that are protected against corrosion are a matter of course.

Complex processes require process fluids with outstanding performance, longterm stability, and long service life. For example, this applies to deep drilling processes in high-strength materials or to demanding forming operations. In this regard, BECHEM offers convincing advantages thanks to their broad worldwide experience.



»A high-performance program of economical metalworking fluids.«

PRODUCT	Materials to be processed	Mineral oil ca. [%]	Amin-free	Boron-free	FAD-free	Lubrication performance	Process / Applications	Properties
BECHEM Avantin 408 	Steel, high-alloy steel, titanium	0	-	•	•	◆◆◆	High cutting performance	Fully synthetic high performance concept, extended tool life, demulsifies process oils
BECHEM Avantin 338 	High-alloy steel, nickel alloys	38	-	-	-	◆◆◆◆	Deep drilling, broaching, hydraulic cylinder machining, demanding forming operations	Semi-synthetic high-performance formulation for excellent surface qualities and extended tool life
BECHEM Avantin 438 	High-alloy steel, nickel alloys	28	-	•	•	◆◆◆◆	Deep drilling, broaching, hydraulic cylinder machining, demanding forming operations	Semi-synthetic high-performance formulation for excellent surface qualities and extended tool life
BECHEM Avantin 3309 	High-alloy steel, nickel alloys	0	-	-	-	◆◆◆◆◆	Deep drilling, broaching, hydraulic cylinder machining, demanding forming operations	Fully synthetic high-performance formulation, highest tool life, excellent surface qualities, can also be used as additive and for forming processes
BECHEM Avantin 4409 	High-alloy steel, nickel alloys	0	-	•	•	◆◆◆◆◆	Deep drilling, broaching, hydraulic cylinder machining, demanding forming operations	Fully synthetic high-performance formulation, highest tool life, excellent surface qualities, can also be used as additive and for forming processes

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◆ = low ... ◆◆◆◆◆ = very high

BECHEM Avantin – water-miscible coolant lubricants

BECHEM Avantin offers maximum performance at maximum efficiency. Thus optimized tool life and excellent surfaces are possible for complex drilling processes in nickel-based alloys. In the production of heat exchangers or reactor components for power plants the BECHEM technology proves its superior performance.

Broaching and forming processes can be taken to the limits of what is technically feasible. Crucial in this regard is the process-optimized performance density of BECHEM Avantin coolant lubricants.

BECHEM success stories inspire. Decades of experience meet the technologies of tomorrow.

Typical process chain in the metal-working industry



Berufluid: Two worlds – one coolant lubricant

The mineral oil free product concept Berufluid is based on polymer additives, and thus for the first time the viscous properties compete against non water miscible coolants, such as cutting oils. In cutting and forming processes effects are visible which, in specific cases, can help save intermediate cleaning tasks in the process chains.

More extensive information with a detailed product overview is provided in the brochure “Berufluid Coolant Lubricants” and on the website, www.bechem.de.

For high-speed grinding (HSG) metal removal rates can be achieved that cannot be realized either with aqueous or mineral-oil based systems.

Awarded – BECHEM lubricants

High quality lubricants are indispensable products which are worth their investment, they are winners of prestigious awards – by making a decisive contribution to performance, energy efficiency and sustainability of products and processes.



Award for Berufluid – a joint project with Fraunhofer Institute IVV and IWF Braunschweig.

BECHEM wins award for tailored solutions in the premium vehicle sector.



BECHEM as an award-winner is one of the 20 most innovative companies in North Rhine-Westphalia.

BECHEM wins the award for innovative lifetime lubrication of different vehicle components.



BECHEM wins the NRW 2015 Efficiency Award for innovative and resource-efficient coating in cold massive forming.

Lubrication solutions for industry



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