



BECHEM Avantin
Coolant Lubricants



BECHEM
LUBRICATION
TECHNOLOGY



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 | Mineral oil ca. [%] | Amin-free | Boron-free | FAD-free | Lubrication performance | Process / Applications | Properties |
|--|-----------------------------------|---------------------|-----------|------------|----------|-------------------------|---|--|
| | | | | | | | | |
| BECHEM Avantin 400 FF 🔧👁️🔥🔧🔧 | Cast iron, steel | 0 | - | • | • | 🔥 | Grinding, disc grinding, plain and surface grinding, roll grinding | Fully synthetic formulation, excellent coolant life due to special additive technology, excellent corrosion protection, low tendency to stick, excellent foaming properties |
| BECHEM Avantin 402 🔧👁️🔥🔧🔧 | Cast iron, steel | 0 | - | • | - | 🔥🔥 | General cutting and grinding operations | Fully synthetic formulation with excellent temporary corrosion protection, high performance, very low consumption |
| BECHEM Avantin 405 🔧👁️🔥🔧🔧 | Cast iron, steel | 0 | - | • | • | 🔥🔥 | General cutting operations, high-performance milling, thread rolling | Fully synthetic high-performance formulation, excellent temporary corrosion protection, very low consumption |
| Berucool 4000 🔧👁️🔥🔧🔧 | Cast iron, steel | 0 | - | • | • | 🔥🔥 | General grinding, grinding of carbide metals | Fully synthetic formulation, excellent corrosion protection, excellent foam behavior, low adhesion tendency, good skin tolerance |
| BECHEM Avantin 320 FF 🔧👁️🔥🔧🔧 | Cast iron, steel | 19 | - | - | • | 🔥🔥 | General cutting and grinding operations | Excellent corrosion protection, excellent dirt-bearing capacity, high emulsionstability, excellent filterability, good skin tolerance, for central and single lubrication systems |
| BECHEM Avantin 420 🔧👁️🔥🔧🔧 | Cast iron, steel | 20 | - | • | • | 🔥🔥 | General cutting and grinding operations | Semi-synthetic formulation with excellent dirt-bearing capacity, excellent corrosion protection, good foam control, good cleaning effect |
| BECHEM Avantin 360 🔧👁️🔥🔧🔧 | Cast iron, steel | 55 | - | - | - | 🔥🔥 | General cutting and grinding operations | Excellent corrosion protection, high emulsionstability, excellent wetting behaviour, good skin compatibility, for central and single lubrication systems |
| BECHEM Avantin 331 FF 🔧👁️🔥🔧🔧 | Cast iron, steel, aluminum alloys | 30 | - | - | • | 🔥🔥 | General machining and grinding operations, machine construction and tool making | Semi-synthetic formulation for universal use, very good flushing performance, good corrosion protection |
| BECHEM Avantin 341 🔧👁️🔥🔧🔧 | Cast iron, steel, aluminum | 30 | - | - | - | 🔥🔥 | General to demanding cutting operations | Semi-synthetic formulation with excellent flushing properties, good corrosion protection and optimized performance concept |
| BECHEM Avantin 441-10 🔧👁️🔥🔧🔧 | Cast iron, steel, aluminum | 38 | - | • | • | 🔥🔥 | Demanding cutting operations and grinding, machine construction and tool making | Semi-synthetic formulation with excellent flushing properties, optimized for soft water, good corrosion protection, high emulsionstability, excellent filterability, good skin tolerance |
| BECHEM Avantin 441-20 🔧👁️🔥🔧🔧 | Cast iron, steel, aluminum | 55 | - | • | • | 🔥🔥 | Demanding cutting operations and grinding, machine construction and tool making | Semi-synthetic formulation with excellent flushing properties, optimized for hard water, good corrosion protection, high emulsionstability, excellent filterability, good skin tolerance |
| BECHEM Avantin 4015 🔧👁️🔥🔧🔧 | Cast iron, steel, aluminum | 0 | - | • | • | 🔥🔥 | General to demanding cutting operations and grinding, thread milling | Fully synthetic formulation for universal, high-performance implementation, excellent flushing properties, excellent corrosion protection |
| BECHEM Avantin 3332 🔧👁️🔥🔧🔧 | Cast iron, steel, aluminum | 30 | - | - | - | 🔥🔥🔥 | General to demanding cutting operations | Semi-synthetic formulation with excellent flushing properties, good corrosion protection and optimized performance concept |
| Berucool HM 🔧👁️🔥🔧🔧 | Carbide | 0 | - | • | • | 🔥 | Grinding of carbide | Fully synthetic formulation for excellent surface qualities for carbide machining |

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

🔥 = low ... 🔥🔥🔥🔥 = very high

Systematic process reliability

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 highstrength materials or to demanding forming operations. In this regard, BECHEM offers convincing advantages thanks to their broad worldwide experience.

When processing sensitive aluminum 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.



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

| PRODUCT | Materials to be processed | Mineral oil ca. [%] | Amin-free | Boron-free | FAD-free | Lubrication performance | Process / Applications | Properties |
|----------|---|---------------------|-----------|------------|----------|-------------------------|---|--|
| | | | | | | | | |
| Aluminum | BECHEM Avantin 270 Aluminum, steel, non-ferrous metals | 70 | • | • | • | ▲ | Allround processing | Universal application at different metal material combinations |
| | BECHEM Avantin 251 Aluminum, steel | 45 | • | • | • | ▲▲ | General cutting and grinding operations | Universal application also at higher water hardnesses |
| | BECHEM Avantin 451 Aluminum, cast iron, steel, 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 I-N Aluminum, cast iron, steel | 50 | - | - | • | ▲▲▲ | General to demanding cutting operations, machining of motor blocks and cylinder heads | Universal formulation for excellent surface qualities, high emulsionstability, optimal rinsing performance |
| | 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 455 Aluminum, high-alloy steel | 35 | - | • | • | ▲▲▲▲▲ | Demanding cutting operations | Excellent surface qualities especially of aluminum alloys used in automotive and aerospace industry |
| | BECHEM Avantin 255 Aluminum, high-alloy steel | 42 | • | • | - | ▲▲▲▲▲ | Highest cutting performance, Powertrain | Universal, high-performance formulation for high and low water hardness |
| Steel | BECHEM Avantin 408 M Steel, high-alloy steel, titanium | 0 | - | • | • | ▲▲▲ | High cutting performance | Fully synthetic high-performance formulation, good corrosion protection, excellent filterability, highest tool life, demulsified 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

Typical process chain in the metal-working industry



Lubrication solutions for industry



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