



BECHEM Avantin Coolant Lubricants



BECHEM
LUBRICATION
TECHNOLOGY



BECHEM Avantin

Emusfiable coolants and clear, mineral-oil free solutions

BECHEM – Lubrication solutions for industry

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










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

A powerful 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 

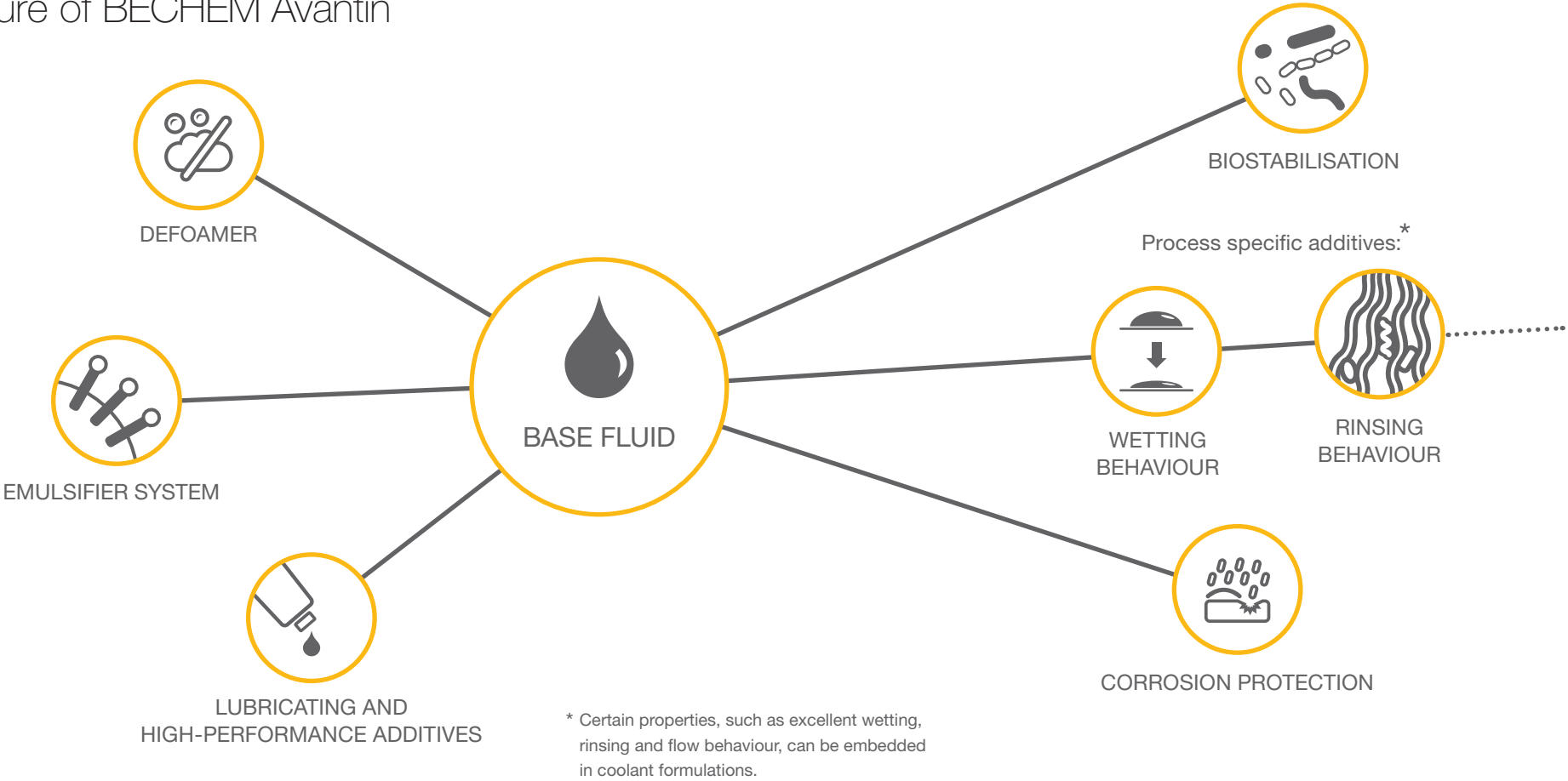
BECHEM Avantin – The classic product with modern system structure



Based on continuous optimisation, the wide range of BECHEM Avantin, which is composed of the 200, 300 and 400 series¹⁾, offers outstanding performance in all machining processes in metal working applications in order to guarantee maximum efficiency.

¹⁾ Series 200: boron- and amine-free coolant qualities
Series 300: boron- and amine-containing coolant qualities
Series 400: boron-free coolant qualities

Typical structure of BECHEM Avantin



The adequate solution – BECHEM Avantin

Cutting operations are defined by the complex interaction of work piece, tool, machine and lubricant. In addition, customer requirements with regard to e.g. filtration or industrial safety must be taken into account.

Latest processing systems, innovative alloys and demanding processes have to be supported by the coolant system. Besides aluminium and magnesium alloys those materials which are difficult to machine, such as nickel alloys, different sinter metals as well as molybdenum and

tungsten alloys are of growing importance. Simultaneously, sustainability of products and processes is more and more in the focus of coolant users.

Against this background, BECHEM is regularly analysing their product ranges. In close cooperation with scientific associations and users our products are permanently adjusted to the changing equirements.

» A large range of high-performing and cost-effective process fluids. «



Machining of motor pistons with BECHEM Avantin

| PRODUCT | Materials to be processed | Mineral oil ca. 1% | Amin-free | Boron-free | FAD-free | Lubrication performance | Process / Applications | Properties |
|--------------------------------|--|--------------------|-----------|------------|----------|-------------------------|---|--|
| BECHEM Avantin 320 | Cast iron, steel | 19 | - | - | • | ◆ | Grinding and easy cutting operations | Semi-synthetic formulation, excellent rinsing capacity |
| BECHEM Avantin 402 | Cast iron, steel | - | - | • | - | ◆ | General cutting and grinding operations, peeling of bright steel | Fully synthetic formulation with excellent temporary corrosion protection |
| BECHEM Avantin 403 | Cast iron, steel | - | - | • | • | ◆ | Grinding and easy cutting operations | Fully synthetic formulation for universal use |
| BECHEM Avantin 331 | Cast iron, steel | 30 | - | - | • | ◆ | General cutting and grinding processes | Universally applicable semi-synthetic formulation, very good rinsing performance |
| BECHEM Avantin 431 | Cast iron, steel | 30 | - | • | • | ◆ | General cutting and grinding operations | Universally applicable semi-synthetic formulation with excellent temporary corrosion protection |
| BECHEM Avantin 251 | Steel, aluminium | 45 | • | • | • | ◆◆ | General cutting and grinding operations | Universal use at high and low water hardness |
| BECHEM Avantin 341 | Cast iron, alloy steel, aluminium alloys | 30 | - | - | - | ◆◆ | General to demanding cutting operations and grinding | Semi-synthetic formulation with excellent rinsing properties and optimised performance |
| BECHEM Avantin 3332 | Cast iron, alloy steel, aluminium | 30 | - | - | - | ◆◆◆ | General to demanding cutting operations and grinding | Semi-synthetic formulation with good rinsing properties and optimised performance |
| BECHEM Avantin 335 | Cast iron, high-alloy steel | 39 | - | - | - | ◆◆◆ | Special cutting operations such as milling, drilling and reaming, e.g. processing of forged parts for automotive construction | Highly suitable for the production of excellent surface qualities with optimised tool life |
| BECHEM Avantin 423 | Cast iron, high-alloy steel | 25 | - | • | • | ◆◆◆ | General to demanding cutting operations and grinding | Universally applicable semi-synthetic formulation, highly additivated, very good rinsing performance |
| BECHEM Avantin 4015 | Cast iron, steel | - | - | • | • | ◆◆◆ | General to demanding cutting operations and grinding, thread rolling | Fully synthetic high-performance formulation, excellent rinsing properties |
| BECHEM Avantin 405 | Cast iron, steel | - | - | • | • | ◆◆ | General cutting and grinding operations, 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

BECHEM Avantin

All raw materials and additives used by BECHEM have been registered according to the latest REACH regulations. Furthermore, all BECHEM Avantin products comply with the latest regulatory modifications in the field of coolant lubricants. BECHEM offers modern boron-free coolants which are free from formaldehyde releasing agents. Upon customer request, BECHEM will also modify the formulation of their classical products to versions which are free from formaldehyde releasing agents.

» Upon request, also classical products with FAD-free* formulation available. «



The finely disperse product structure and excellent flow behaviour lead to considerable reduction of drag-out losses.

| PRODUCT | Materials to be processed | Mineral oil ca. [%] | Amin-free | Boron-free | FAD-free | Lubrication performance | Process / Applications | Properties |
|-----------------------------------|--|---------------------|-----------|------------|----------|-------------------------|---|--|
| BECHEM Avantin 355 | Aluminium, high-alloy steel | 45 | - | - | • | ♦♦♦ | General to demanding cutting operations | Excellent surface qualities especially of aluminium alloys used in the automotive industry |
| BECHEM Avantin 455 | Aluminium, high-alloy steel | 35 | - | • | • | ♦♦♦ | General to demanding cutting operations, machining of engine blocks, transmission housings and cylinder heads | Excellent surface qualities especially of aluminium alloys used in automotive and aerospace industry |
| BECHEM Avantin 451 | Cast iron, steel, aluminium, titanium | 45 | - | • | • | ♦♦♦ | General to demanding cutting operations, machining of engine blocks and cylinder heads | Universal formulation for excellent surface qualities |
| BECHEM Avantin 361 | High-alloy steel, aluminium | 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, aluminium | 50 | - | - | • | ♦♦ | General to demanding cutting operations, machining of motor blocks and cylinder heads | Universal formulation for excellent surface qualities, optimal rinsing performance |
| BECHEM Avantin 255 | Aluminium, high-alloy steel | 42 | • | • | - | ♦♦♦ | Demanding cutting operations | Universal, high-performance formulation for high and low water hardness |
| BECHEM Avantin 256 | Aluminium, high-alloy steel | 36 | • | • | - | ♦♦♦ | General to demanding cutting operations | Universal, high-performance formulation for high and low water hardness |
| BECHEM Avantin 2046 | Steel, aluminium, titanium and nickel alloys | 36 | • | • | • | ♦♦♦♦ | Most demanding machining operations | Highest performance, universally applicable |
| 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 3309 | High-alloy steel, nickel alloys | - | - | - | - | ♦♦♦♦♦ | 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 438 | High-alloy steel, nickel alloys | 35 | - | • | • | ♦♦♦♦ | Deep drilling, broaching, hydraulic cylinder machining, demanding forming operations | Semi-synthetic high-performance formulation for excellent surface qualities and extended tool life |
| BECHEM Avantin 4409 | High-alloy steel, nickel alloys | - | - | • | • | ♦♦♦♦♦ | 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 |

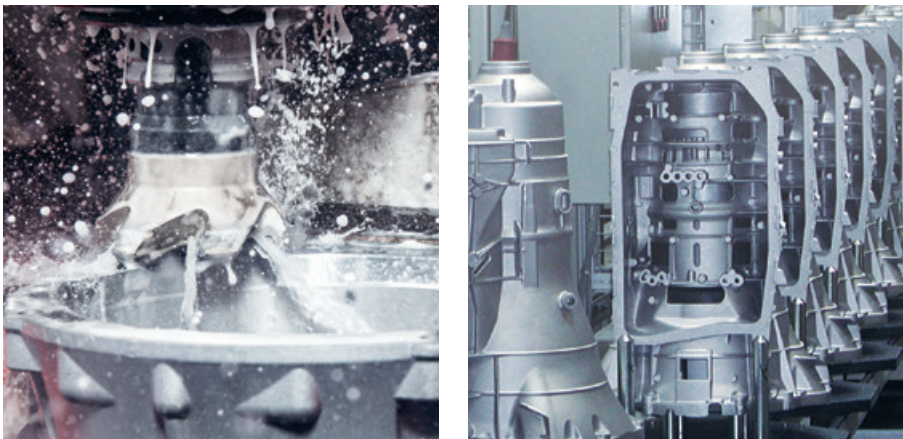
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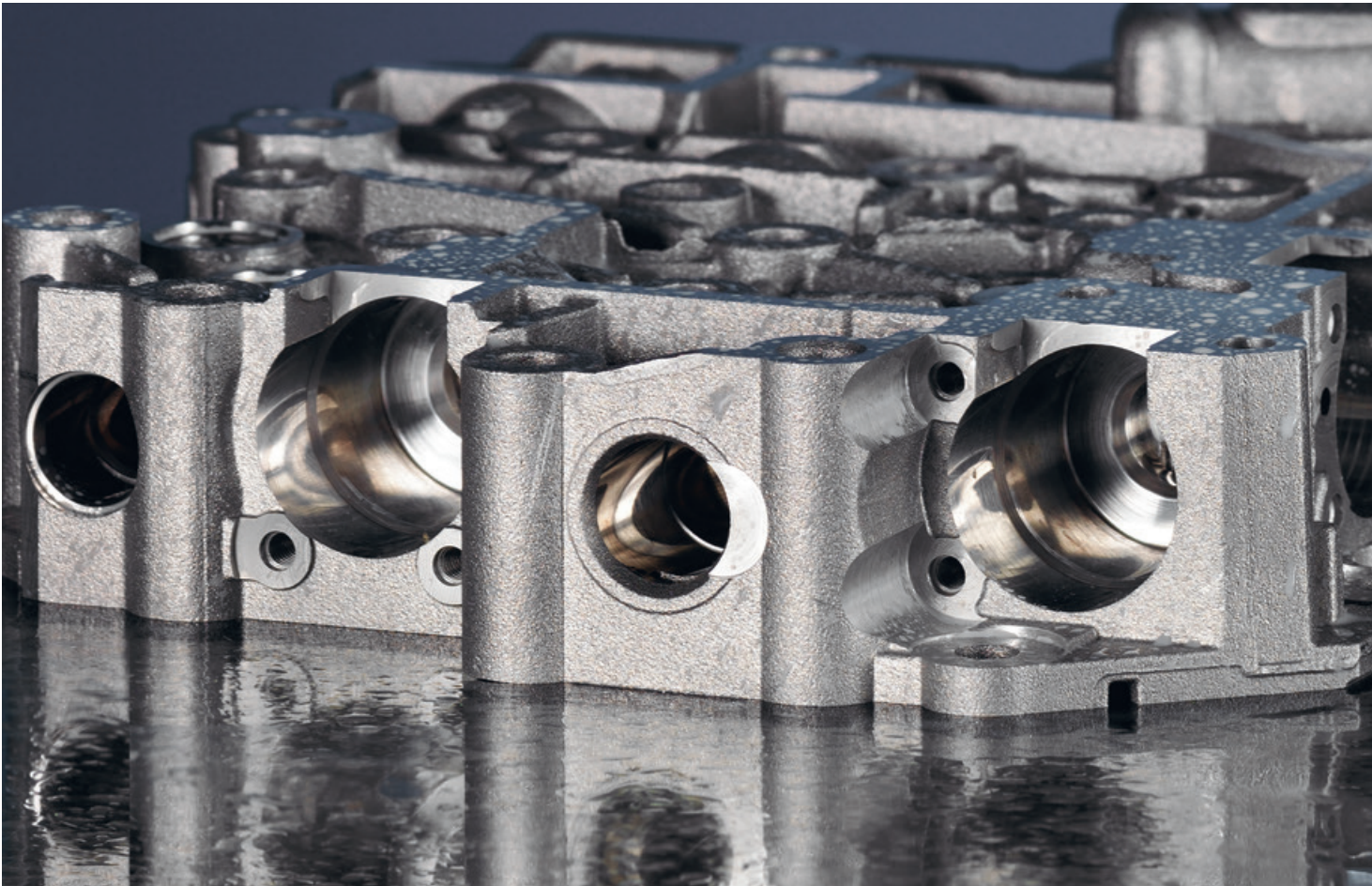
* free from formaldehyde releasing agents

BECHEM Avantin and more

In case the customer prefers oil-free, viscous coolant lubricants, we recommend our modern Berufluid coolant system. BECHEM is permanently improving this innovative process fluid which was honoured with the first German Raw Material Efficiency Prize.



BECHEM Avantin during use in transmission production



Worth their price – BECHEM lubricants

High-quality lubricants are indispensable products that are not only worth their price but that have also been honoured with numerous well-known awards. They have earned this status by making a decisive contribution to performance, energy efficiency and sustainability in a variety of industrial applications.



Berufluid* – honoured with the “German Raw Material Efficiency Prize”

* A mutual project of BECHEM, the Fraunhofer-Institut for Process and Technology, and the Institute for Machine Tools and Product Engineering (Technical University Braunschweig).

In 2013 BECHEM is honoured by Johnson Controls with the European Supplier Leadership Award “Global Growth” for tailor-made solutions for vehicles in the premium segment.

BECHEM wins the competition “NRW – Wirtschaft im Wandel” initiated by the organisation “Germany – Land of Ideas” and now belongs to the 20 most innovative companies in North Rhine-Westphalia.

Lubrication Solutions for Industry



CARL BECHEM GMBH

Weststr. 120 · 58089 Hagen · Germany · Phone +49 2331 935-0 · Fax +49 2331 935-1199 · bechem@bechem.de · www.bechem.com