



Berufluid  
Coolant Lubricants



**BECHEM**  
LUBRICATION  
TECHNOLOGY





# Berufluid

## Coolant lubricant 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 
- Milling 
- Turning 
- Deep drawing 
- Deep drilling 
- Industrial fittings 
- Tool manufacture 
- Automotive Industry 

#### PROPERTIES

- High loads 
- Low foaming 
- Adjustable viscosity 
- Extended tool life 
- Corrosion protection 
- Good rinsing performance 



# A new basis for cutting operations

Berufluid is an example for premium products in the range of water miscible coolant lubricants. As trend-setting boron-free product concept which is free from formaldehyde releasing agents, Berufluid eliminates the need for mineral oil. The innovative technology was honoured with the first German raw material efficiency prize in 2011. This milestone in coolant technology is considered as the first step of sustainable lubricant development. The consequent development from the first prototypes to a complete range of coolant lubricants resulted in the realisation of numerous process innovations in metal working applications.

Of course, Berufluid products are REACH compliant and meet the latest regulatory modifications in the field of coolant lubricants.



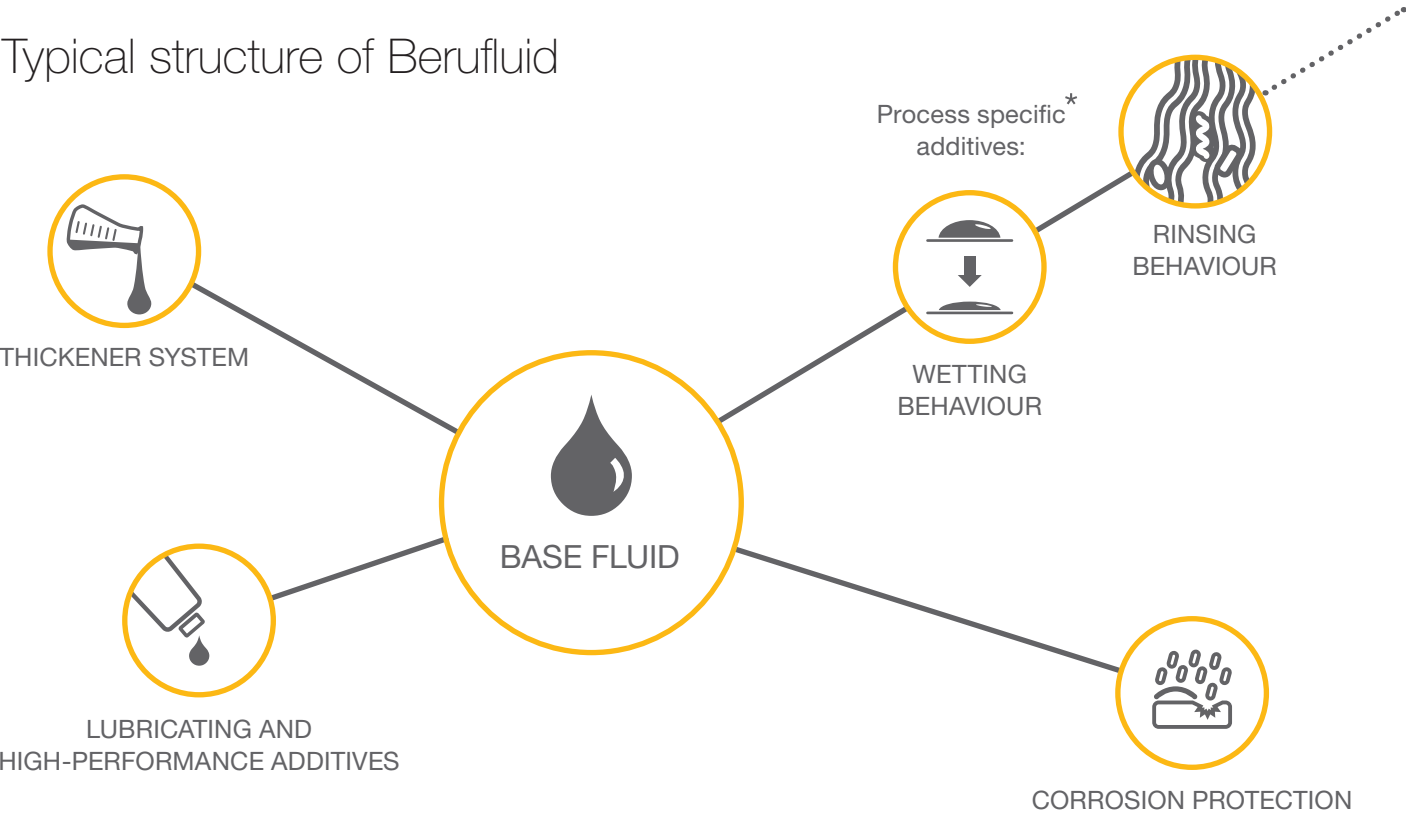
## Advantages of Berufluid

### Cost savings and resource conservation



With the unique processing oils of the Berufluid range considerable improvements in cost effectiveness can be realised. If, for example, we have a look at energy costs for re-cooling of the processing oils and the specifically higher pressure of the system pumps, these cost savings become evident. In many cases, the elimination of fire protection measures and insurances allows optimised processes and costs. An improved working area – no formation of aerosols and precipitation – is a very convenient side effect.

### Typical structure of Berufluid



\* Certain properties, such as excellent wetting, rinsing and flow behaviour, can be embedded in coolant formulations.

# The adequate solution?

In cutting operations there is a complex relation between work piece, tool, machine and lubricant with a variety of parameters. Therefore coolants must always be adjusted to new machine types with special material, process and manufacturer requirements.

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.

The trendsetting product concept Berufluid is the answer to these trends. In close cooperation with scientific associations and users this fluid technology is permanently adjusted to the changing requirements. In case the machining processes require the use of non water soluble lubricating additives, BECHEM offers high-performance alternatives with their range of emulsions and processing oils.

BECHEM is always looking for new and innovative lubricant concepts. Various awards show that BECHEM is on the right way.



Precision milling with Berufluid

PRODUCT	Materials to be processed	Amin-free	Boron-free	FAD-free	Lubrication performance	Inhibition against discoloration of non-ferrous metals	Process / Applications	Properties
<b>Berufluid AS 1006</b> 	Cast iron, alloy steel, aluminium	-	•	•	••	Basic machine protection	General cutting and grinding operations	Fully synthetic high-performance formulation, very good rinsing properties, excellent temporary corrosion protection
<b>Berufluid AS 1007</b> 	Cast iron, alloy steel, aluminium	-	•	•	••••	Basic machine protection	General cutting and grinding operations	Fully synthetic high-performance formulation, very good rinsing properties, excellent temporary corrosion protection
<b>Berufluid ST 1003</b> 	Cast iron, steel, titanium, nickel alloys	-	•	•	•••	Basic machine protection	General cutting and grinding operations	High biostability, extended tool life
<b>Berufluid AL 1004</b> 	Aluminium, titanium, steel	-	•	•	••••	○	Turning, drilling and milling, produces excellent surfaces	High performance, extended tool life, very good corrosion protection, good biostability, neutral in smell, gentle to the skin
<b>Berufluid NE 1003</b> 	Yellow metals, steel	-	•	•	••	○○	General cutting and grinding operations	Highly inhibited against discoloration of non-ferrous metals, very good filterability, good corrosion protection
<b>Berufluid NE 1004</b> 	Yellow metals, cast iron, steel	-	•	•	••	○○○	General cutting operations	Highest level of inhibition against discoloration of non-ferrous metals, very good filterability, good corrosion protection
<b>Berufluid NE 1005</b> 	Cast iron, alloy steel, titanium, nickel alloys, yellow metals	-	•	•	••••	○	General and severe machining operations	Universally applicable up to severe machining processes
<b>Berufluid Grind HM-B</b> 	Carbide, cast iron, steel	-	•	•	•••	○○	Grinding in tool production, processing of cam shafts and piston rods (Diskus grinding), Forming (yellow metal)	Excellent material removal flow rate with reduced tool wear, good bio-stability, good corrosion protection,
<b>Berufluid Grind HM-K</b> 	Carbide	-	•	•	••	○○	High-performance grinding of hard metal, e.g. flute grinding	Excellent material removal rate with reduced tool wear
<b>Berufluid Cut 'N Grind KA</b> 	Cast iron, steel, titanium, nickel alloys	-	•	•	••	○	General cutting operations and grinding	Very good filterability, low foaming, neutral odor

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

• = low ... ••••• = very high      ○ = low ... ○○○ = high

## 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.

DEUTSCHER ROHSTOFF  
Effizienz Preis  
© BGR Hannover

European Supplier Leadership Award  
Global Growth  
Johnson Controls

NRW Wirtschaft im Wandel  
Ein Wettbewerb für Unternehmen mit Zukunft

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 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



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