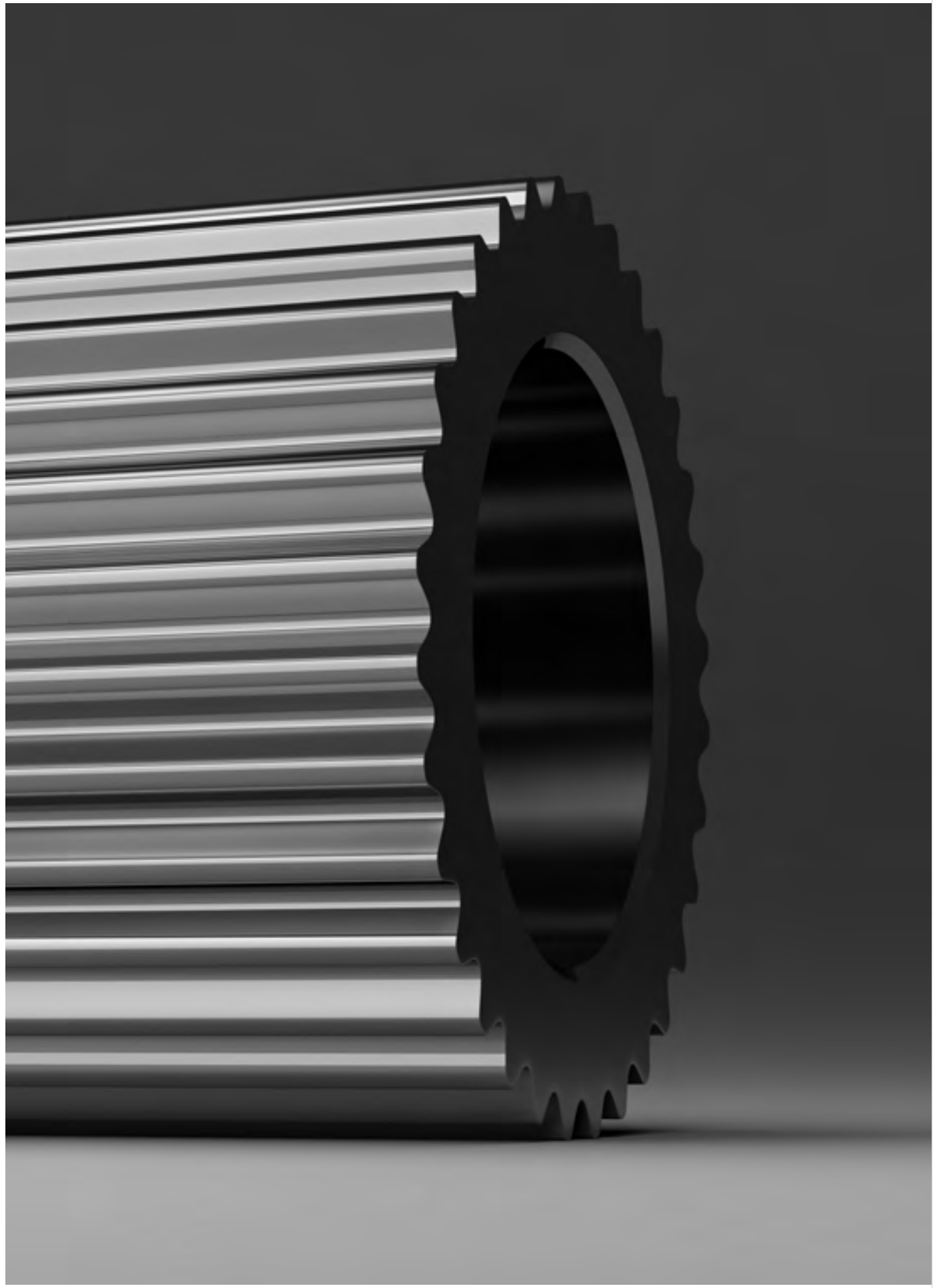


Berucut XC –
The new fluid generation of cutting and grinding oils

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

PROPERTIES

Chlorine-free

Good rinsing performance

Low foaming

Extended tool life

Corrosion protection

High loads

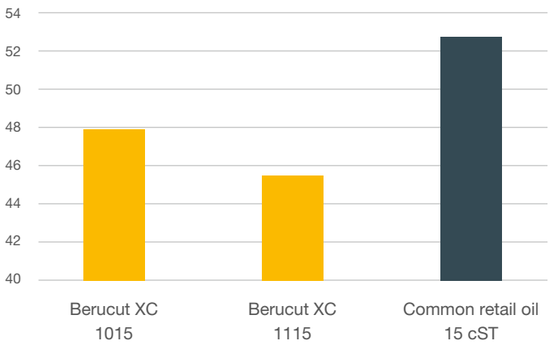
Low residue level

For the highest of performances in metalworking: BECHEM XC Fluids

The new BECHEM XC Fluids establish a pioneering standard for metalworking fluids that are not mixable with water. Using innovative base fluids and synergistically active additive technologies results in new excellent performance benchmarks and optimized production processes. BECHEM XC Fluids have been developed for demanding metal cutting and make a compelling case given their higher flashpoints, low evaporation and reduced oxidation tendency, and they lead to increased performance and extended tool life.

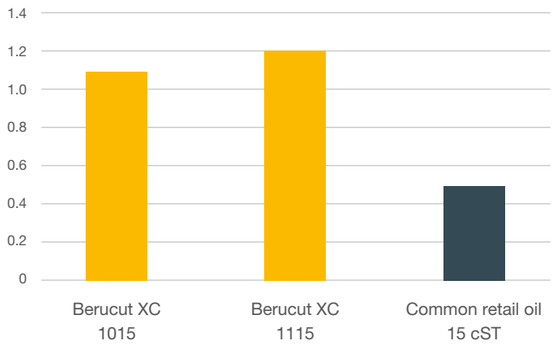
The mineral-oil free BECHEM XC Fluids are based on synthetic base fluids and ensure a stable and safe production process. Users profit from improved work safety and low consumption. The continuously rising demands in metal cutting and machining processes require fluids with ever stronger performance. Berucut XC is the new generation of BECHEM metalworking fluids that have been developed today for the future already and which set the highest BECHEM standard.

Viscosity at 10°C [mm²/s]



The lubrication performance of a metalworking medium is closely tied to the viscosity-temperature behavior. In deep temperatures, too strong a rise of the viscosity is counterproductive, as the cooling and flushing capacity of the oil reduces. This is decisive whenever a process has not reached its operating temperature yet.

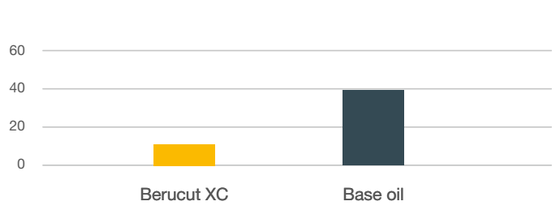
Viscosity at 200°C [mm²/s]



In very high temperatures, in contrast, the thickness of the available lubricant film is decisive because the aspect of cooling becomes less important. Compared to conventional metalworking oils, the Berucut XC series proves to have substantially better viscosity-temperature characteristics in both high as well as low process temperatures, whereby it contributes to a significant improvement of productivity.

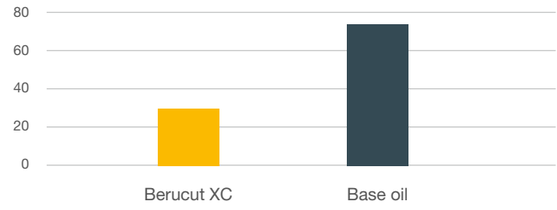
Berucut XC – the new technology for more reliability and safety

Evaporation loss [%]



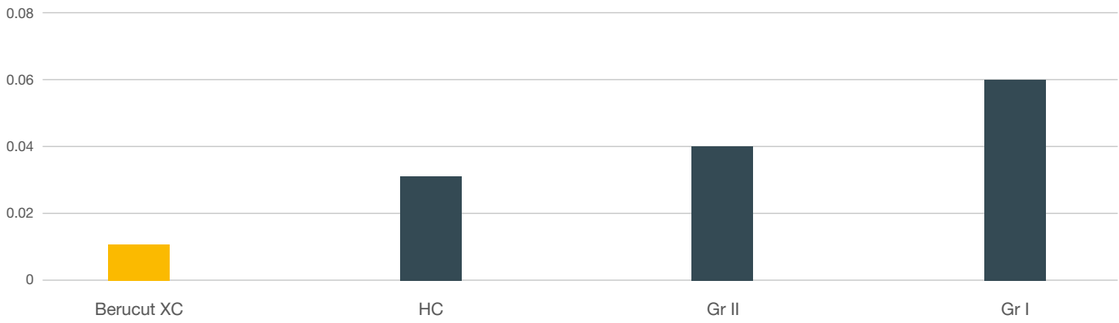
The evaporation loss of a base oil in increased temperatures is closely tied to the aerosol load of the direct machine environment. The poorer the evaporation characteristics of a metalworking medium, the more must be invested in suitable extraction systems. Compared to conventional mineral oils, the evaporation loss could be lowered by more than one-quarter through the use of the BECHEM XC Fluids and the odor build-up could be reduced significantly as well.

Air separation characteristics [sec.]



Modern metalworking processes use high lubricant oil pressures of 70 bar up to more than 100 bar. The air separation characteristics of the base oil therefore becomes an important factor in terms of quality, as the high shear strain when pumping the lubricant oil introduces a lot of air to the medium. Compared to conventional mineral oils, the air separation characteristics of the new Berucut XC series is up to three times faster.

Percentage in PAH [%]



Since there are proven hazards to health caused by numerous polycyclic aromatic hydrocarbons (PAH), research on how to substantially reduce their concentration in metalworking media has been underway for many years. Because PAH is a natural constituent of coal and crude oil, the choice of base fluids is of special importance.

The base oils of the Berucut XC series stand out in the ppb range (parts per billion) by virtue of an extremely low PAH concentration and they are therefore differentiated clearly from highly refined hydrocrack qualities. The Berucut XC series therefore contributes to raising work safety in metalworking.

Berucut XC impresses with outstanding characteristics

Advantages of the BECHEM XC Fluids

- Excellent oxidation stability
- Very high flashpoint
- Very high viscosity index
- Very low evaporation loss
- Excellent UV stability
- Low pour point, good deep temperature behavior
- Very good lubrication performance
- High cutting speeds
- Good material compatibility
- Very good foam control
- Very low PAH values (polycyclic aromatic hydrocarbons)

In-vitro cytotoxicity

Products that are used in medical technology must fulfill particularly strict standards regarding their toxicity and compatibility with biological systems. For medical products with longer-term or permanent tissue contact, the biological safety test for biocompatibility according to ISO 10993 is mandatory. Berucut XC 1015 has passed the test for in-vitro cytotoxicity according to DIN EN ISO 10993-5:2009 with the best possible rating (0 reactivity).

In the processing of implants made of titanium, Berucut XC guarantees very good surface and processing quality.

PRODUCT	Materials to be processed	Viscosity [mm²/s] at 40°C	Viscosity index	Density at 20°C	Flashpoint [°C]	Pour point [°C]	Foam	Brugger	VKA	Copper corrosion	Evaporation loss in % (1h, 180°C)	Processes	Properties
Berucut XC 2005	Cast iron materials, steel, stainless steel, titanium, hard metal	4,50 – 5,50	132	0,770 – 0,830	≥ 145	-24	0/0	22	1400/1500	1a	69	Honing, grinding, engraving	Very good surface qualities, excellent dispersing properties with very good residue behavior
Berucut XC 2007	Cast iron materials, steel, stainless steel, titanium, hard metal	7,00 – 9,00	117	0,790 – 0,820	≥ 167	-32	0/0	22	1600/1700	1a	25	Honing, grinding, engraving	Very good surface qualities with very low evaporation tendency, excellent dispersing properties with very good residue behavior
Berucut XC 1010	Steel, stainless steel	11,00 – 14,00	130	0,830 – 0,840	≥ 179	-59	0/0	104	4200/4400	2c	24	Turning, drilling, milling, grinding, deep drilling, thread manufacturing, gear flank grinding	High-performance AW/EP additives ensure a high load-bearing capacity and reduce wear and tear on the tool, supports high cutting speeds, excellent flushing capacity
Berucut XC 1015	Steel, stainless steel	13,90 – 17,00	135	0,830 – 0,870	≥ 182	-45	0/0	94	5000/5500	1a	13	Turning, drilling, milling, grinding, deep drilling, thread manufacturing, gear flank grinding	High-performance AW/EP additives ensure a high load-bearing capacity while reducing wear and tear on the tool, supporting high cutting speeds with excellent flushing capacity, in-vitro cytotoxicity according to DIN EN ISO 10993-5:2009 with a rating of 0 reactivity
Berucut XC 1115	Steel, stainless steel	13,90 – 17,00	140	0,850 – 0,900	≥ 187	-39	0/0	129	5500/6000	1a	11	Turning, drilling, milling, grinding, deep drilling, thread manufacturing, gear flank grinding	High-performance AW/EP additives ensure a high load-bearing capacity while reducing wear and tear on the tool with low evaporation tendency, very good flushing capacity
Berucut XC 1022	Cast iron materials, steel	21,40 – 26,20	129	0,840 – 0,860	≥ 169	-45	0/0	116	6000/6500	4b	10	Turning, drilling, milling, grinding, deep drilling, gear flank grinding	High-performance AW/EP additives ensure a high load-bearing capacity while reducing wear and tear on the tool, supporting high cutting speeds with excellent flushing capacity, very temperature-stable
Berucut XC 1122	Steel, titanium, stainless steel, nonferrous metals	20,60 – 24,50	158	0,830 – 0,850	≥ 170	-24	0/0	90	3400/3600	1a	25	Turning, drilling, milling, grinding, deep drilling, thread manufacturing, gear flank grinding	High-performance AW/EP additives ensure a high load-bearing capacity while reducing wear and tear on the tool, supporting maximum cutting speeds in high-speed cutting with excellent flushing capacity, very temperature-stable
Berucut XC 5022	Steel, stainless steel	21,00 – 24,00	158	0,870 – 0,890	≥ 180	-48	0/0	200	8000/>8000	4c	7	Vertical reaming, sawing, thread manufacturing, cold massive forming	High-performance AW/EP additives for a high load-bearing capacity and strong cutting performance, excellent flushing capacity
Berucut XC 4015	Steel, stainless steel	13,50 – 16,50	129	0,845 – 0,865	≥ 187	-64	0/0	161	6500/7000	4b	19	Deep drilling (all methods), peeling, rolling operations, burnishing	High-performance additive package for excellent surfaces, high performance in the cut, prevents build-up edges, strong cooling effect, supports demanding processing parameters, presence of cross-holes is unproblematic
Berucut XC 4122	Steel, stainless steel, aluminum alloys, nonferrous metals	20,70 – 25,30	148	0,850 – 0,870	≥ 192	-54	0/0	119	3400/3600	1b	25	Deep drilling, peeling, rolling operations, burnishing, reaming, thread manufacturing	High-performance additive package for excellent surfaces, high performance in the cut, suitable for steels, aluminum and nickel base alloys with tensile strengths of up to 800 N/mm²
Berucut XC 1110	Cast iron materials, steel	9,50 – 11,60	119	0,810 – 0,830	≥ 178	-29	0/0	89	2800/3000	4c	22	Grinding, simple metal cutting	Very good surface qualities, excellent dispersing properties with very good residue behavior
Berucut XC 2105	Cast iron materials, steel, nonferrous metals	4,00 – 6,00	136	0,790 – 0,810	≥ 139	-12	0/0	22	1400/1500	1b	89	Honing, grinding, finishing	Ensures high surface qualities

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