

**Copper and Aluminium  
Wire Drawing Lubricants**



# Copper and Copper Alloys

**BECHEM Unopol – the worldwide recognized brand for highest performance**

Designed for highest lubrication and surface quality the **BECHEM Unopol** range is the first choice for most demanding processes.

Highest possible lubrication results, improved die and capstan life, a minimum of residues for an excellent further processing, low foam formation, high cleaning capacity and extended sump life; these are just some of the characteristics of the **BECHEM Unopol** product range.

Permanently increasing demands for productivity and quality require constant research and development. Combined with the well known professional assistance of **BECHEM**, this guarantees the very high reputation of the **BECHEM Unopol** series throughout the wire drawing industry.

## Hot Rolling Lubricants

### **BECHEM Unopol EM-CU**

**BECHEM Unopol EM-CU** is a fully synthetic, water-soluble fluid, which is used for the production of copper wire on hot rolling mills. **BECHEM Unopol EM-CU** has excellent cooling and separating properties and thus supports extended tool life and a perfect wire quality. **BECHEM Unopol EM-CU** shows low foaming tendency, can be easily filtered and protects copper wire from discoloration.

## Greases and Pastes for Die Boxes

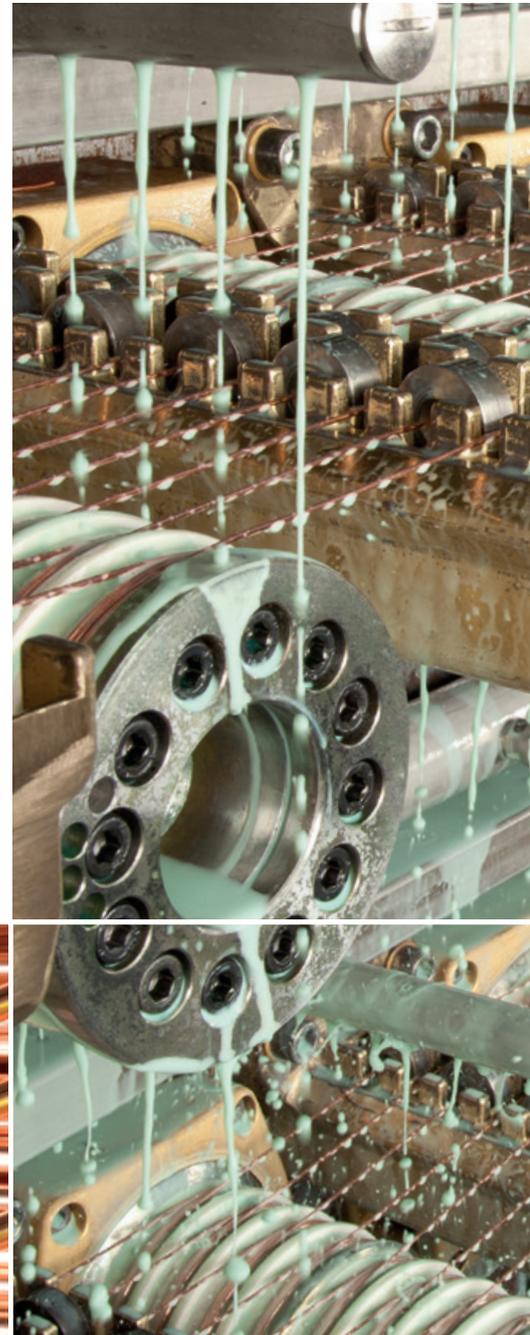
### **BECHEM Unopol VZ 800**

**BECHEM Unopol VZ 800** is a semi-fluid drawing grease used in die boxes. It provides high lubricity, good adhesion on the wire surface and excellent wear protection for the drawing dies. As it emulsifies easily it is compatible with **BECHEM Unopol** drawing lubricants.

## Universal Drawing Lubricants

### **BECHEM Unopol U 570**

Whenever a universal product for drawing rod, medium and fine wire is needed, **BECHEM Unopol U 570** is the first choice. It provides the required lubricity for rod wire drawing as well as the proper cleanliness of the wire when final diameters down to 0,15 mm are drawn. Bare copper as well as tinned and silver-plated wire is processed with **BECHEM Unopol U 570** on single and multiwire systems.



## Rod Breakdown Lubricants

### **BECHEM Unopol G 560**

BECHEM Unopol G 560 is the mostly used high performance product for drawing rod and medium sized wire. It is also used for drawing bare, tin-plated and silverplated wire in multiwire systems down to final diameters of 0,20 mm. BECHEM Unopol G 560 combines good lubrication, high cleaning efficiency of the drawing system and a long service life of the emulsion in use.

### **BECHEM Unopol G 600**

BECHEM Unopol G 600 is the most suitable product in respect of excellent lubrication combined with a long service life of the emulsion in use. The product is used for drawing profiled wire like trolley wire or for rod wire with high surface demands, e.g. for subsequent enamelling processes. BECHEM Unopol G 600 is also used in strong multiwire machines down to final diameters of 0,4 – 0,6 mm.

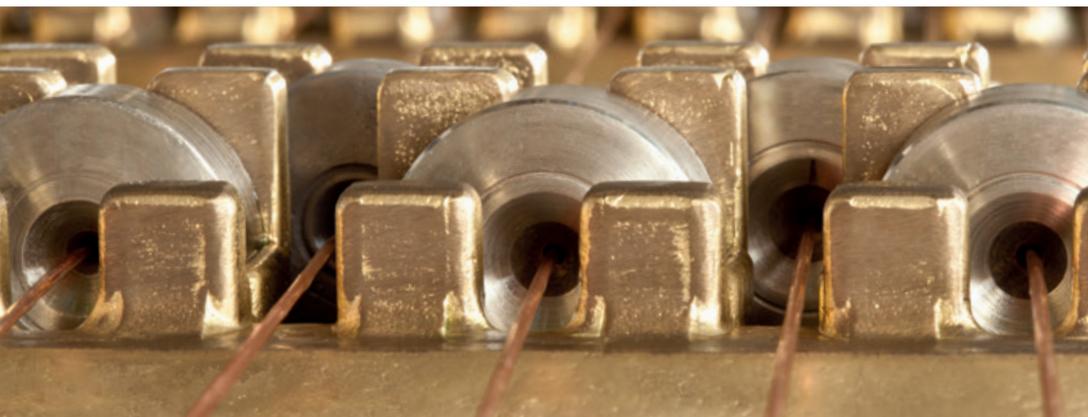
## Fine Wire Drawing Lubricants

### **BECHEM Unopol F 811**

BECHEM Unopol F 811 combines the advantages of mineral oil based and fully synthetic products. In addition to excellent cleaning properties and long service life of the emulsion in use it also guarantees the required lubricity and extended lifetime of the dies. BECHEM Unopol F 811 has especially been designed for the use in multiwire systems, but is also suitable for single wire machines, for drawing bare, tinned and silver-plated wires down to final diameters of 0,10 mm.

### **BECHEM Unopol MH**

BECHEM Unopol MH guarantees highest possible cleanliness when fine and finest wires are drawn. Based on its unique composition it is often used for drawing steps prior to enamelling processes. The product is used in single wire, multiwire and inline systems, for drawing down to final diameters of 0,07 mm.



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## Synthetic Lubricants

### **BECHEM Unopol S 630**

Providing highest lubricity combined with low tackiness BECHEM Unopol S 630 is mainly used for drawing bare copper wire in multiwire systems with starting diameters of 1,8 – 2,4 mm and final diameters of 0,2 – 0,4 mm. In addition nickel plated copper wire is drawn – mainly in single wire but also multiwire systems.

### **BECHEM Unopol S 643**

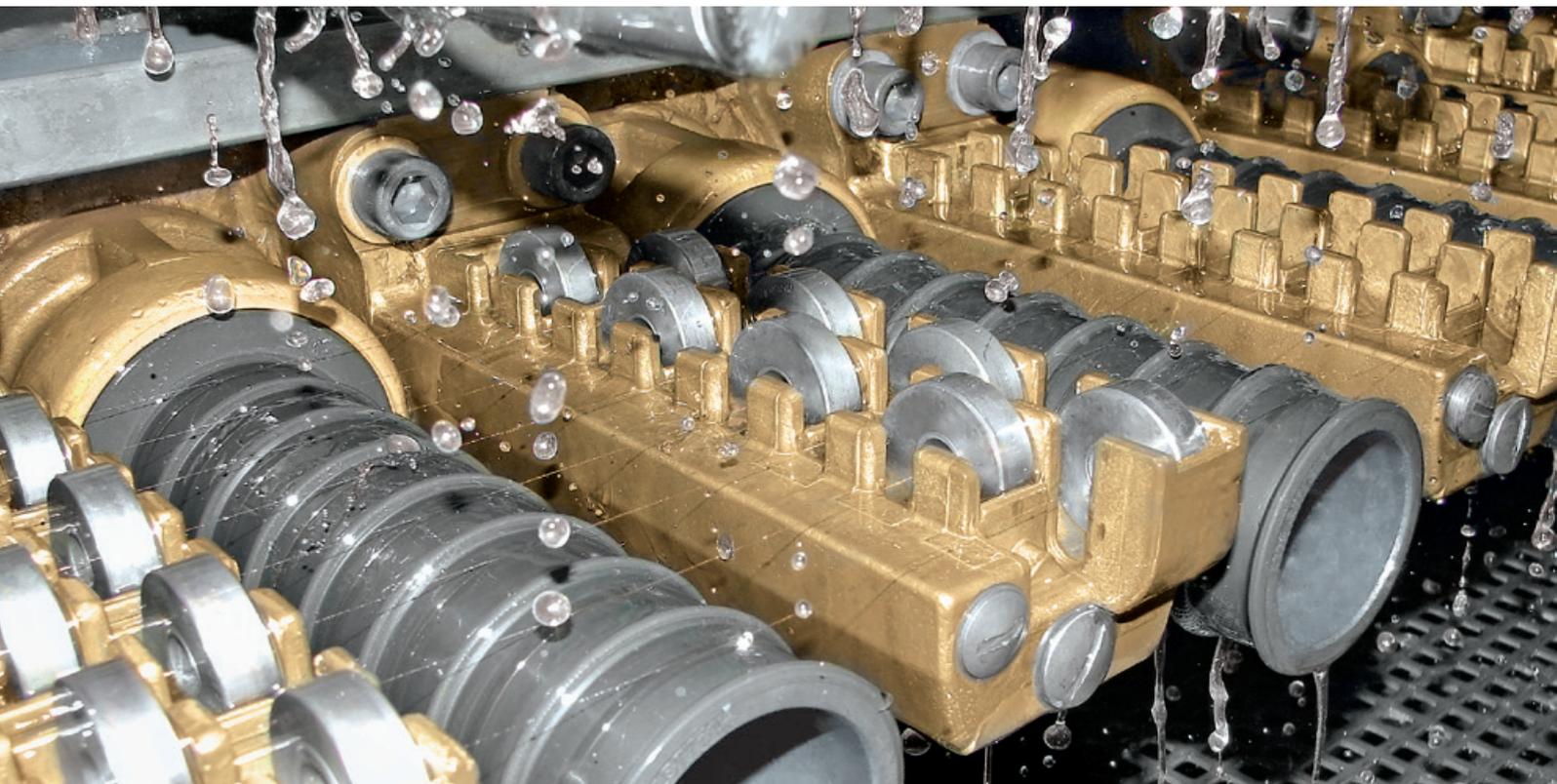
BECHEM Unopol S 643 is most suitable for drawing bare copper but also nickel, silver and tin plated wires with starting diameters of 1,6 – 2,1 mm down to final diameters of 0,05 mm. With solutions of BECHEM Unopol S 643 highest productivity can be achieved in single as well as in multiwire systems. Low foam level, low die wear and long shelf life are just some of the benefits of BECHEM Unopol S 643.

### **BECHEM Unopol S 803**

Designed for multiwire systems, BECHEM Unopol S 803 is used for drawing bare and tin plated wire down to final diameters of 0,05 mm. This synthetic product provides highest cleanliness of the system and an extremely long service life of the solution, combined with an excellent die life. Furthermore BECHEM Unopol S 803 shows good lubricating and cooling properties and low foaming tendencies.

### **BECHEM Unopol S KD**

A special product for drawing of super fine wire in single wire machines. When using BECHEM Unopol S KD, final diameters of 0,01 mm and sometimes even lower can be drawn. The range of possible materials varies from copper, brass, bronze over titanium to silver and gold.



## Special Lubricants for Annealing Units

### **BECHEM Unopol SPG 623**

The high demands of the annealing liquids require special products. In rod, medium and fine wire drawing processes BECHEM Unopol SPG 623 provides the necessary cleaning properties and protects the wire against oxidation.

### **BECHEM Unopol SP 930**

Wherever cleaning, lubrication and protection after drawing and annealing are required, BECHEM Unopol SP 930 is the right choice. It is used in spray application to clean and protect the drawn wire prior to spooling, but also for lubricating the wire guiding. BECHEM Unopol SP 930 leaves a very thin, low-viscous film on the wire which protects the copper against discoloration during storage.

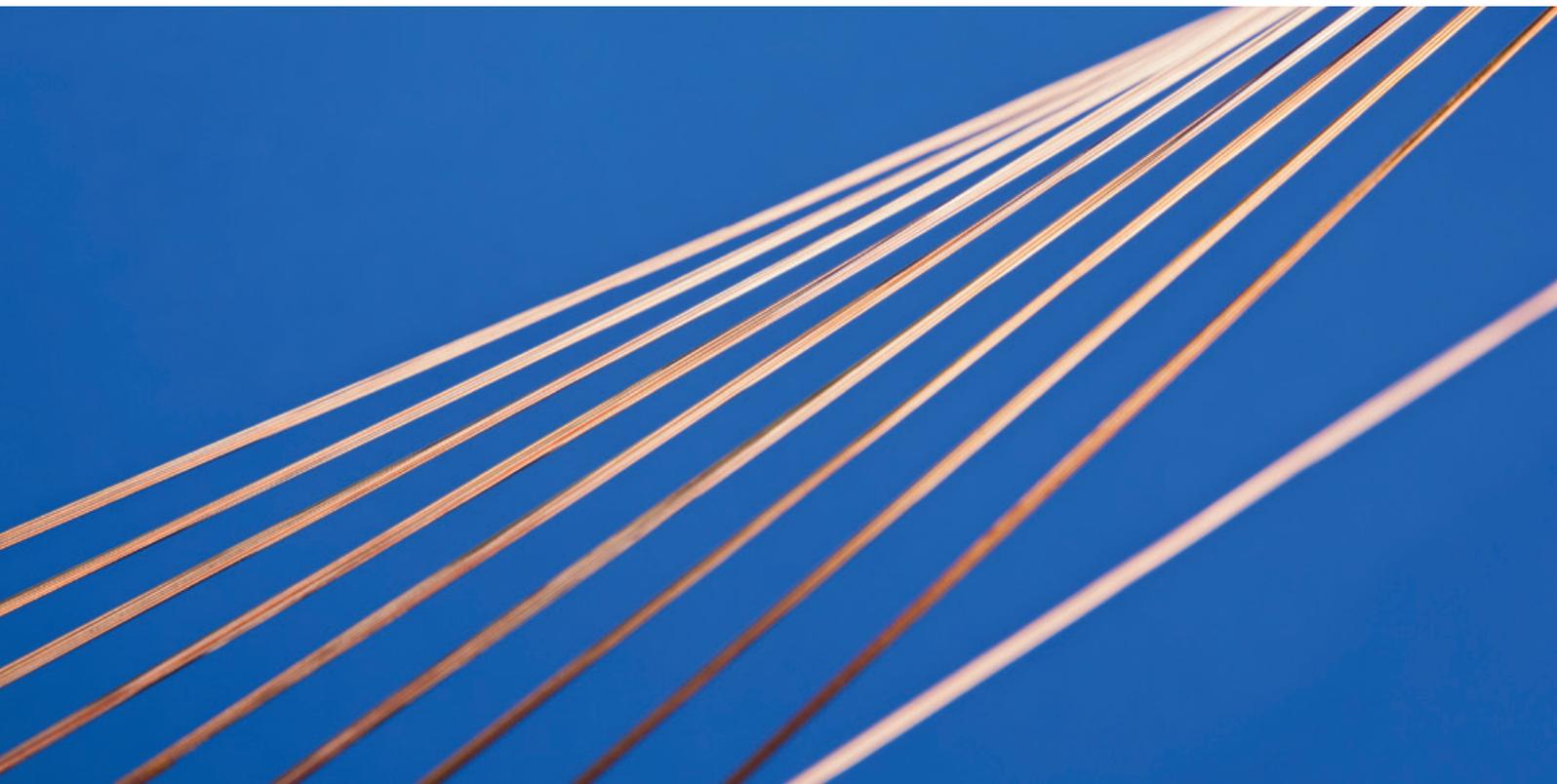
## Service Additives

### **BECHEM Unopol A 100**

Water-soluble wetting agent on tenside basis which decreases surface tension and improves cleaning effect of the drawing emulsions or drawing solutions. BECHEM Unopol A 100 is also used for stabilisation and production of a stable foam layer of older drawing emulsions.

### **BECHEM Unopol A 200**

Highly active, water-soluble wetting agent based on selected tensides which decreases the surface tension of the drawing emulsions or drawing solutions. BECHEM Unopol A 200 has excellent cleaning properties, guarantees stabilisation of the emulsion and improves the sliding behaviour of the wire with consistently low tendency to foam formation.



# Aluminium and Aluminium Alloys

## Berudraw AL – top quality drawing oils and BECHEM Unopol AL – the new era!

Berudraw AL drawing oils have been designed to match the latest requirements of the industry. Based on the well selected combination of highest possible lubricity and best oxidation stability, this product series achieves excellent shelf life.

With the BECHEM Unopol AL series BECHEM has succeeded to combine the advantages of water miscible

lubricants with the high lubricity needed for drawing wires of EC-aluminium but also aluminium alloys of the 5000, 6000 and 7000 series.

Cleaner machines, cleaner and also cooler wire, an often faster drawing speed and higher productivity are just some of the benefits of the BECHEM Unopol AL series.

## Hot Rolling Lubricants

### BECHEM Unopol Roll 570

BECHEM Unopol Roll 570 is a water miscible, semi-synthetic lubricant for hot rolling of aluminium wire in continuous casting systems. It provides excellent lubricity combined with a high rinsing and cleaning power. Emulsions of BECHEM Unopol Roll 570 show excellent stability, even under severe circumstances and ensure an extremely long lifetime.

## Greases and Pastes for Die Boxes

### BECHEM High-Lub GF 525

BECHEM High-Lub GF 525 is a semi-fluid drawing grease for die boxes. It provides high lubricity, good adherence to the wire and excellent wear protection of the drawing die. BECHEM High-Lub GF 525 is compatible with Berudraw drawing oils.

## Neat Drawing Oils

### Berudraw AL 2

A very low-viscous oil for drawing aluminium wire down to a final diameters of 0,10 mm. It is well filterable, the film remaining on the wire after drawing evaporates in a subsequent annealing process with hardly leaving any residues.

### Berudraw AL 3

Berudraw AL 3 is a low-viscous oil for fine drawing of Aluminium and its alloys in single and multiwire machines down to final sizes of 0,2 mm. Berudraw AL 3 shows very good lubricating properties combined with a long service life. The product can be filtered with special filter paper to prolong lifetime, reduce dust and dirt level in the system and keep the wire clean.



## Neat Drawing Oils (continuation)

### Berudraw AL 8

Berudraw AL 8 is a low-viscous drawing oil for drawing of EC-aluminium rod wire but also for medium wire systems where aluminium alloyed wire is drawn down to final sizes of 0,4 mm. Based on its well selected and proven combination of effective substances as well as the excellent EP-properties Berudraw AL 8 shows high resistance to aging. The key benefit of Berudraw AL 8 is the filterability using special filter paper which keeps the system and the drawn wire extremely clean.

### Berudraw AL 20

Berudraw AL 20 is a medium-viscous drawing oil designed for rod breakdown of EC-aluminium but also aluminium alloys. In addition, it is used in medium wire systems down to final diameters of 0,60 mm. Berudraw AL 20 can be applied in dipping and spraying machines. Based on its well selected and proven combination of effective substances as well as the excellent EP-properties Berudraw AL 20 shows high resistance to aging.

### Berudraw AL 50

Berudraw AL 50 is a high-viscous, non water miscible drawing oil for rod wire drawing of aluminium alloys with high tensile strength but also EC-aluminium with high reduction rates in dipping machines but also in die boxes. Furthermore difficult profiles can be drawn by using Berudraw AL 50.

## Water Miscible Drawing Lubricants

### BECHEM Unopol AL 560

BECHEM Unopol AL 560 is a semi-synthetic extremely high lubricating water miscible lubricant for rod wire drawing of EC-aluminium but also high-tensile aluminium alloys. BECHEM Unopol AL 560 is also suitable for the production of enamelled wire. Prepared emulsion show excellent lubricity, combined with highest rinsing and cleaning properties.

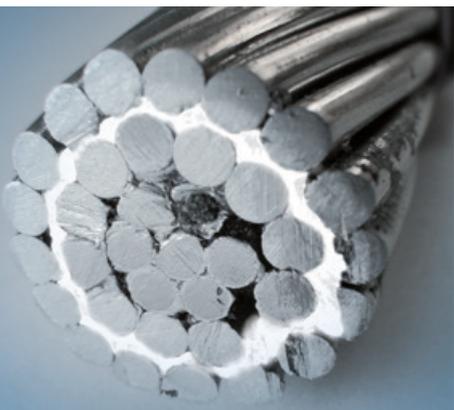
### BECHEM Unopol AL 570

BECHEM Unopol AL 570 is a water miscible drawing lubricant designed for fine wire drawing on multiwire machines with continuous annealing. Typical starting diameters are 2,4 – 2,1 mm; final wire diameters are 0,2 – 0,4 mm. Based on its high lubricity it is also well suitable for medium wire systems. BECHEM Unopol AL 570 shows excellent rinsing and cleaning power and provides a long lifetime of the emulsion.

## Corrosion Protection Greases

### BECHEM Unopol SV 2 KF

BECHEM Unopol SV 2 KF is a water repellent corrosion protection grease with high thermal stability. Its main application is the lubrication and protection of steel-aluminium conductors for overland transmission lines. The high drop point guarantees a stable protective layer even at temperatures exceeding 120 °C. At temperatures up to -35 °C the protection layer still remains flexible and will not break when bending the wire. It is easily applied at ambient temperature which results in very low operating costs.



## Lubrication Solutions for Industry

With 180 years of experience, BECHEM is one of the leading manufacturers of premium quality special lubricants and metal working fluids.

Close cooperation with research institutes, industry partners and product users as well as the knowledge, skills and major commitment by our staff are guarantees of new and innovative high performance lubricants, which contribute to the success of our customers at home and abroad.

A powerful network of distributors and several national and international production sites ensure our products are readily available worldwide.

**Tomorrow's technologies. Today.**

