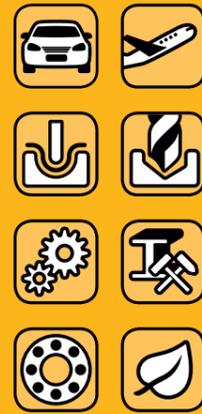


## Lubrication Solutions for Industry

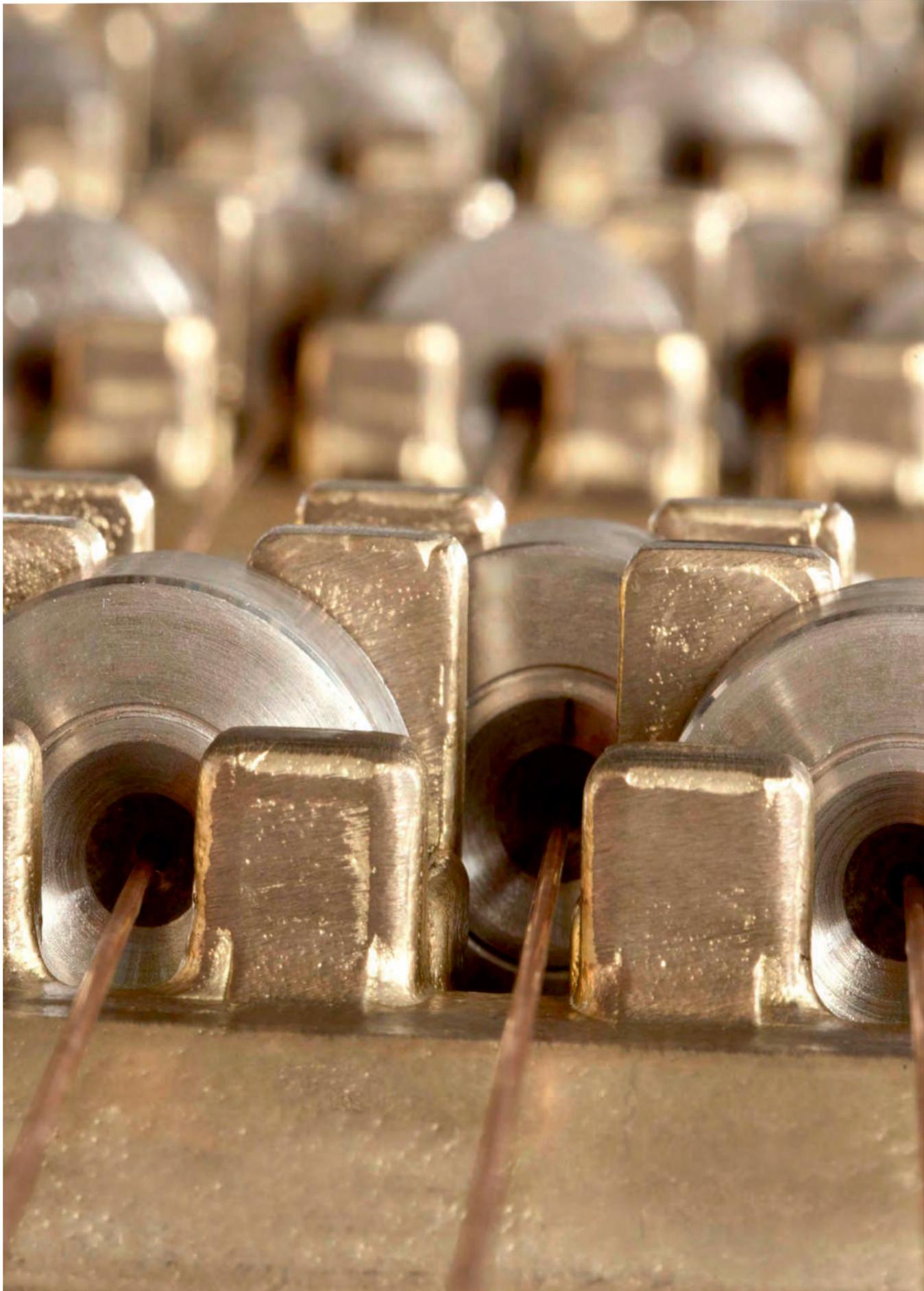


## Next Generation Lubricants for Metal Forming processes

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## Pioneers in Metal Forming Lubricants

Extreme surface pressures and specific frictional forces are critical aspects that affect tool and work piece in a metal forming process. Knowledge of distribution of contact stresses and frictional coefficients over the die surface is critical in formulating the right lubricant that has to perform under demanding conditions.

Collaborating with end users, machine and tool manufacturers, BECHEM has developed the next generation metal working fluids for the entire spectrum of metal working processes.

## Wire Drawing Lubricants

BECHEM's Unopol and Berudraw range are globally sought after lubricants for wire drawing processes of Copper and Aluminium alloys. These advanced lubricants provide superior lubricity ensuring excellent

surface finish for drawn wires. The dynamic additive package extends the service life of the lubricant and drawing die as well.



# >> Wire Drawing Shortlist <<

Copper and Alloys	Product	Application	Properties
	<b>BECHEM Unopol G 560</b> 	Rod break down	High-performance drawing lubricant for rod breakdown and medium wire drawing process. For drawing of bare, tinned and silver plated copper wires of diameters up to 0.20 mm in single and multi wire machines.
	<b>BECHEM Unopol G 580</b> 	Rod breakdown, Fine wire drawing	High-performance drawing lubricant for use in rod breakdown and medium wire drawing, achieving a final diameter of upto 0.10mm. It is suitable for use on multiple wire machines for drawing bare, tinned, silver and nickel-plated copper wire. BECHEM Unopol G 580 ensures good lubrication performance, with a high cleaning effect and a long emulsion life. Ensures a drastic reduction in consumption pattern.
	<b>BECHEM Unopol F 811</b> 	Fine wire drawing	Semi-synthetic drawing lubricant for medium and fine drawing process. For tinned, nickel and silver plated copper wires in single and multiwire systems with diameters down to 0.07mm.
	<b>BECHEM Unopol FX 200</b> 	Fine wire drawing	High-performance lubricant designed for fine drawing of bare, tinned and silver plated copper wire on both single and multi-wire machines, achieving final diameters down to 0.07 mm. It ensures stable pH levels, minimal foaming and ease of handling during re-drawing. BECHEM Unopol FX 200 provides corrosion protection to copper and extends the service life of drawing dies. It also offers excellent cleaning efficiency.
	<b>BECHEM Unopol SPG 623 and Additive BUI</b> 	Annealer lubricant	Next generation water miscible, mineral oil containing semi synthetic drawing lubricant. Designed as an annealing fluid for continuous annealing and fine wire drawing process. Product offers excellent cleaning effect as well as protection against corrosion and staining.
	<b>BECHEM Unopol S 643</b> 	Superfine wire drawing	High performance drawing lubricant for fine drawing of copper and copper alloys. Recommended for use in super fine wire drawing in single and multi wire machines (upto final diameter of 0.05mm). BECHEM Unopol S 643 provides good lubrication and cooling. Also, exhibits low foaming tendency.

Aluminium and Alloys	Product	Viscosity [mm <sup>2</sup> /S] at 40 °C	Application	Properties
	<b>Berudraw AL 20</b> 	135-160	Rod breakdown	Non-water miscible drawing lubricant for wet drawing. Can also be used in medium wire breakdown systems of diameters up to 0.60 mm. Combination of selected lubricating additives and inhibitors ensure stable viscosity and longer sump life. Can be applied in dipping and spraying machines.
	<b>Berudraw AL 22 SEA</b> 	140	Rod breakdown and medium wire drawing	High performance drawing oil for rod break down and medium drawing of aluminium alloys wires (final diameters > 0.5mm) offering good lubrication properties and high oxidation stability. It ensures longer life and lower consumption.
	<b>Berudraw AL 3</b> 	27-33	Fine wire drawing	Low viscous non-water miscible wire drawing lubricant developed for continuous wet drawing. Contains proven combination of lubricity improvers and oxidation inhibitors for superior lubricating properties with high resistance to ageing and corrosion protection. extends die life. For medium and fine drawing of wires of diameters upto 0.20mm.
	<b>BECHEM Unopol AL 570</b> 	-	Fine wire drawing	Water miscible drawing lubricant for aluminium wires with an input diameter of approx. 3.5mm and final diameters of 0.10 -0.80 mm in single and multiple wire machines with continuous annealing process. Can be used for aluminium wire drawing for the production of enameled wires up to final diameter of 0,1 mm as well. Ensures longer lubrication life and good cleaning effect.
	<b>BECHEM Unopol 580 Roll</b> 	225 (at 20°C)	Aluminium Hot Rolling	Water miscible semi-synthetic rolling lubricant for hot rolling of aluminium wire in continuous casting systems. Select emulsifiers, surfactants ensure excellent lubricity with excellent rinsing and cleaning powder. Unopol 580 Roll emulsion shows excellent stability and provides extended service life.

OCG	Product	Base Oil	Thickener	NLGI Grade	Base oil viscosity [mm <sup>2</sup> /S] at 40°C	Properties
	<b>BECHEM High Lub L2</b> 	Mineral	Metal Complex	2	100	Protection grease for electrical transmission systems. Universal high-performance lubricant with excellent anti-corrosion properties suitable for long-term protection of electrical cables and electrically conductive connection elements. The main application is the protection of Steel-Aluminium wires for overhead conductors.

SS, Steel & Alloys	Product	Viscosity [mm <sup>2</sup> /S] at 40 °C	Application	Properties
	<b>BECHEM Form 180 C</b> 	170-210	Deep drawing, Punching, Fine blanking, Tube bending, external and internal lubrication in cold pilger processes of stainless steel and nickel alloy tubes.	High-performance extreme pressure forming oil delivers excellent lubrication and significantly extends tool life. It offers superior corrosion protection and ensures an exceptional surface finish. BECHEM Form 180 C exhibits excellent adhesion on stainless steel and enables maximum reduction per pass in the cold pilgering process.
	<b>Berudraw 244</b> 	20-24	Medium and fine wire drawing	Non-water miscible free oil for medium and fine wire drawing of Steel and SS wires. EP and AW additive package in the lubricant ensures extended tool life.

Universal Cleaner	Product	Viscosity [mm <sup>2</sup> /S] at 20°C	Flash Point (°C)	Materials	Properties
	<b>Beruclean Eco</b> 	1.8	≥65	Copper, Aluminium, Steel and Stainless Steel	Solvent-based biodegradable cleaner (OECD 301F). Suitable for ultrasonic and manual cleaning as well. Removes oil traces and dust from drawn wires. Suitable for stranding application. Ensures effective cleaning of dies and panels.
	<b>Beruclean 3050</b> 	-	-	Aluminium, Concrete, Ferric, Glass, Plastic surfaces, Steel, Tiles	Universal alkaline cleaner for cleaning or drawing dies, capstans, drawing and annealing chambers as well as machine area. Suitable for ultrasonic machine and manual cleaning processes as well. Neutral towards paints, rubber seals, plastics, textiles and aluminium. It has a pH of 10 at 5% concentration.

## Application



Wire drawing



Bending



Wire rope



Roller bearings



Plain bearings



Biodegradable



Low foaming



Extends tool life



Good rinsing performance



Corrosion protection



Drilling

## Properties



Low residue level



Good pumpability



Food grade / Pharma



Chlorine free



Manual Cleaning

## The BECHEM Edge

- Bio-stable
  - \* Enhanced emulsion stability resulting in savings of upto 50-100% on initial fills with service life of up to 24-48 months
- Good filterability
  - \* Longer sump life
- Low make up quantities
  - \* 0.15 to 0.4 Kg per ton for drawing processes
- Provides excellent lubricity
  - \* Ensures 10-15% increase in die life
  - \* Less wire breakage, excellent surface finish
- Less foaming reduces spillage thereby improving working condition
- Built-in antioxidants restricts blackening

## BECHEM's Range for Metal Working Processes

### Metal Forming Fluids

- Cold forging oils
- Release agents for semi hot and hot forging oils
- Wire drawing lubricants
- Deep drawing oils
- Tube drawing oils

### Metal Working Mediums

- Coolants
- Cutting oils
- Deep drilling oils
- Cleaning fluids

## BECHEM's Legacy

Established in the year 1834 in Germany, BECHEM pioneered the concept of specialty lubricants. As one of the earliest lubricant firms, BECHEM focused on constant product innovation and thorough application engineering. This guiding principle helped BECHEM evolve as a niche supplier of high performance specialty lubricants.

Based on advanced formulations, The BECHEM Group today offers specialized products for critical industrial applications across the world.

BECHEM India is a 100% subsidiary of BECHEM GMBH with its plant and corporate office located in Bangalore. With a dedicated sales team and distribution network spread across the country, BECHEM India caters to various industrial segments like Cement, Steel, Automotive, Textile, Food & Pharma and Metal Working Processes.

## Awarded – BECHEM Lubricants

High quality lubricants are indispensable products which are worth their investment, they are winners of prestigious awards – by making a decisive contribution

to performance, energy efficiency and sustainability of products and processes.



Awarded for Berufluid, a mutual project with the Fraunhofer-Institut for Process and Technology and the Braunschweig Institute for Machine Tools and Production Technology.



BECHEM was awarded a prize for tailor-made solutions for vehicles in the premium segment.



As an award winner, BECHEM now belongs to the 20 most innovative companies in North Rhine-Westphalia, Germany.



BECHEM received an award for innovative lifetime lubrication of various vehicle components.

