



**Special Lubricants for the
Sheet Forming Industry**



About us

In 1834 Carl Bechem founded the first German oil factory. Still today the **CARL BECHEM GMBH** is managed as family-owned company meanwhile in the sixth generation. With daughter companies in France, India and Switzerland as well as Joint Ventures in the USA, South Africa, Sweden and China **BECHEM** belongs to the “global players” in the field of tailor-made high-performance lubricants.

In addition, **BECHEM** has built up a tight network of competent sales partners and thus guarantees that the **BECHEM** lubricant solutions, accompanied by the required individual support, are available in about 60 countries all over the world.

Tailor-made solutions for each application

New technologies in the sheet forming industry, increased cost pressure and strict environmental regulations require high responsibility in handling lubricants in use.

Demanding metal alloys and increasing requirements with regard to the surface quality and residual contamination on the parts call for permanent reflection and further development of the forming lubricants.

For **BECHEM** an intensive development work has always been of major importance in order to meet the prevailing market requirements and to be a competent contact for their customers and solve their problems. This is supported by active work in associations as well as by the participation in research projects of various institutes and universities.



BECHEM can be seen as a partner of the sheet forming industry who, together with the customer, considers and coordinates the complete process chain. Thus the **BECHEM** forming lubricants guarantee optimal process reliability and efficiency thanks to innovative product technologies and tailor-made lubricant solutions.

True to the motto “Obligated to tradition – committed to the future” **BECHEM** permanently deals with the future challenges in order to further maintain their leading market position and to guarantee the **BECHEM** customers competitive advantages.

After mutual detailed examination we are developing a solution together with you in order to recommend a process optimising lubricant tailored to your requirements.



Volatilizing punching oils

The BECHEM VSM product series is used when clean surfaces are required in easy forming operations with low material thickness. Different gradations of volatilizing components and lubricating parts guarantee very economic forming operations since further processing can in most cases be done without additional degreasing.

Special products for stainless forming of aluminium

For processing of highly sensitive aluminium alloys BECHEM offers special lubricant solutions which guarantee stainless forming operations.

Emulsifiable, chlorine free punching and deep drawing lubricants

The BECHEM STE product series has been designed for the application as emulsion diluted with water; in individual cases it can also be used as neat forming oil. Since cleaning can be done with pure, slightly heated water, excellent surface qualities as well as very economical production processes and easy processing are guaranteed.

Non water miscible, chlorine free punching and deep drawing oils

With the STO series BECHEM offers a product range tailored to viscosity and performance which is based on latest technology: from forming oils for easy operations and all metal materials up to high performance oils which, in stainless steel processing, are a real alternative to chlorinated products. The exchange of critical substances in metal working fluids is a considerable benefit not only with regard to process reliability and economy, but also for ecology.

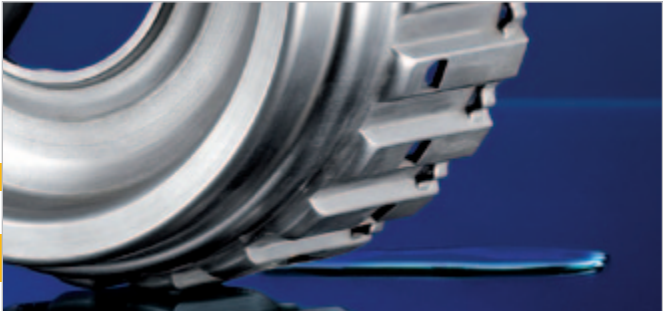
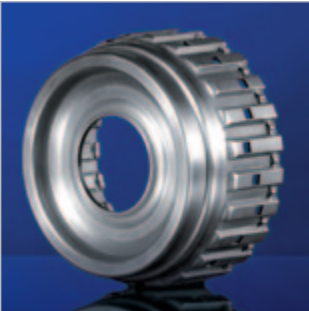
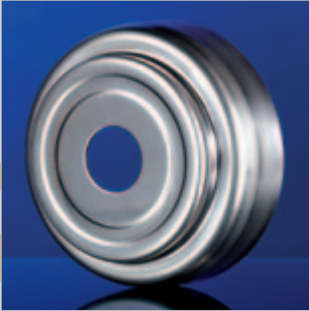
Chlorine free pastes

Products from the BECHEM STP product series have been developed for most demanding forming operations where oils are no longer sufficient. In view of their pasty consistency these products are emulsifiable so that slightly heated water is sufficient for cleaning. Main focus can be concentrated on high surface qualities and economic production processes.



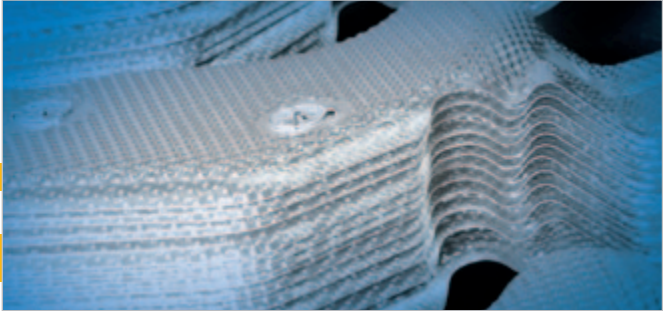
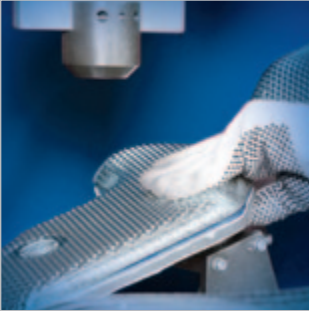
Product Portfolio Sheet Forming

| Technical Data | | | | Application | | | | | | | | |
|------------------------------------------------------------------|---------------------------------------------------------|-------------|-------|-------------|-----------------|-----------|-----------------------|----------|---------------|--------------|---------|---------------------------------|
| Product | V ₄₀ (in mm ² /sec) approx. | Performance | | Material | | | | Process | | | | Minimum quantity lubrication |
| | | Polar | EP | Steel | Stainless steel | Aluminium | Non-ferrous metals | Punching | Fine blanking | Deep drawing | Bending | |
| Non water miscible, chlorine free punching and deep drawing oils | | | | | | | | | | | | |
| BERUFORM STO 114 ZF | 80 | +++ | ++++ | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ |
| BERUFORM STO 116 ZF | 100 | +++ | ++++ | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ |
| BERUFORM STO 121 ZF | 100 | +++ | +++++ | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ |
| BERUFORM STO 311 | 32 | ++ | + | ■ | | ■ | ■ | ■ | | | ■ | ■ |
| BERUFORM STO 465 | 40 | +++ | +++ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| BERUFORM STO 533 | 30 | ++ | + | ■ | | ■ | | ■ | | ■ | ■ | ■ |
| BERUFORM STO 606 | 58 | ++++ | ++++ | ■ | ■ | | | ■ | ■ | | ■ | ■ |
| BERUFORM STO 711 | 68 | ++ | + | ■ | | ■ | ■ | ■ | | ■ | ■ | ■ |
| BERUFORM STO 765 | 68 | ++++ | +++ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| BERUFORM STO 1268 | 120 | ++++ | +++++ | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ |
| BERUFORM STO 2557 | 250 | ++++ | ++++ | ■ | ■ | | | ■ | ■ | ■ | ■ | |
| BERUFORM STO 3446 | 340 | ++++ | ++++ | ■ | ■ | | | ■ | | ■ | ■ | |
| BERUFORM STO 8006 | 800 | +++++ | ++++ | ■ | ■ | | | | | ■ | ■ | |



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| Volatilizing punching oils | | | | | | | | | | | | |
| BERUFORM VSM 9 | 1 | – | – | ■ | | ■ | ■ | ■ | | | ■ | ■ |
| BERUFORM VSM 41 | 1 | + | – | ■ | | ■ | ■ | ■ | | | ■ | ■ |
| BERUFORM VSM 101 | 1,5 | ++ | – | ■ | | ■ | ■ | ■ | | | ■ | ■ |
| BERUFORM VSM 164 | 6 | + | ++ | ■ | ■ | ■ | ■ | ■ | | | ■ | ■ |
| Special products for stainless forming of aluminium | | | | | | | | | | | | |
| SPRAYLUB A 20 | 27 | ++++ | – | ■ | | ■ | ■ | ■ | | | ■ | ■ |
| Emulsifiable, chlorine-free punching and deep drawing oils | | | | | | | | | | | | |
| BERUFORM STE 4023 | 480 | ++ | ++ | ■ | | | | | | | | |
| BERUFORM STE 5023 | 570 | ++ | +++ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | |
| BERUFORM STE 5033 | 440 | +++ | +++ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | |
| Chlorine-free pastes | | | | | | | | | | | | |
| BERUFORM STP 50 CA | | +++++ | ++++ | ■ | ■ | | | | | ■ | ■ | |
| BERUFORM STP 150 DL | | +++++ | + | ■ | ■ | | | | | ■ | ■ | |
| BERUFORM STP 3734 | | ++++ | +++ | ■ | | | ■ | | | ■ | ■ | |
| BERUFORM STP 22 | | ++++ | +++++ | ■ | ■ | | | | | ■ | ■ | |



Tomorrow's technologies. Today.

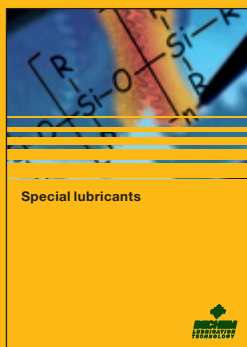
A tradition we are proud of since 1834. This is still today demonstrated by our trademark: the Rhus Flower. After permanent development, BECHEM is today a »Global Player«.

BECHEM special lubricants, industrial lubricants, metal working fluids and solutions for forming technology are based on our extensive experience in the development of special chemistry and on the latest tribologic knowledge. Our know-how with regard to friction, wear and lubrication always takes account of our customers' requirements for economical and ecological optimisation. We feel obliged to tradition and progress.

Besides the headquarter in Hagen, BECHEM has two other production sites in Germany – in Mieste and Kierspe. In addition to that, our worldwide distribution network allows us to develop markets all over the world. With daughter companies in France, India and Switzerland, as well as Joint Ventures in the USA, South Africa, Sweden and China, BECHEM shows its international presence.

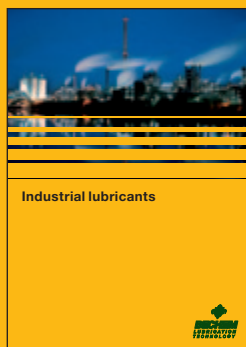
It is our target to supply our customers with high-quality products and to simultaneously meet the corresponding international standards. The quality of our products is guaranteed by our quality management system in accordance with the automotive standard ISO/TS 16949. All our production sites are systematically controlled by internal audits and regular external inspections by the certification association TÜV NORD CERT GmbH. Audits which are regularly carried out by our customers confirm the compliance with our high quality requirements.

Further information material is available either direct from us or at www.bechem.com



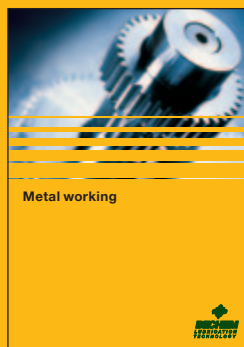
Special lubricants

- Low and high temperature lubricants
- Plastic lubrication
- Electrical contact lubricants
- Food grade lubricants
- Valve lubricants
- Anti-Friction-Coatings



Industrial lubricants

- High performance multipurpose greases
- Heavy duty and high temperature lubricants
- Hydraulic oils
- Gear lubricants
- »Green« lubricants



Metal working

- Coolant lubricants
- Cutting and grinding oils
- Deep drilling oils
- Corrosion protection oils
- Cleaning agents



Forming technology

- Wire drawing lubricants
- Cold forging oils
- Massive forming
- Tube drawing lubricants
- Sheet forming