

your global specialist

Carbon capture lubrication solutions

Maximise efficiency. Minimise impact.



Rise above CO₂ compressor challenges

Carbon dioxide (CO₂) emissions are a pressing global concern. This makes carbon capture technologies crucial, not only in reducing overall environmental impact, but also in running efficient individual plants. CO₂ poses unique lubrication challenges. When dealing with CO₂, a lubricant must be able to:

- Withstand high pressures, temperature fluctuations, and aggressive chemical interactions
- Handle supercritical phase transitions without compromising efficiency
- Resist corrosion caused by carbonic acid formation
- Prevent oil carryover that can easily result from absorption of CO₂

That's why Klüber Lubrication created cutting-edge carbon capture CO₂ compressor oils – so you can maximise efficiency, increase runtime, reduce downstream complications, and save money.

Case studies

Because wet CO₂ can corrode your compressors and piping (particularly those made of carbon steel), choosing a lubricant tailored to your specific application is crucial for protecting your equipment.

The differences between various lubricant formulations are striking in this respect. This is illustrated by the pictures on the right, showing comparative results of rigorous carbonic acid tests attained by two similar base oils with different additive packages.

CO₂ can also strip base oils of crucial additives (such as viscosity improvers and polymers), causing residue to build up in your system. This can lead to potential failures in critical components such as valves, rod packing, piston rings, and riderbands.

The repercussions can extend beyond the confines of your system and create build-up within well injectors, piping walls, and other downstream equipment. Not the example on the right which shows the importance of choosing the right versus wrong oil for your application.



Equip #260: ISO 480: Mineral oil - valve cage

Excessive build-up on component; varies from hard and crusty to thick and sticky



Equip #280: Synthetic oil - valve cage

Component is clean with a light viscous oil film evident.



Product range



At Klüber Lubrication, we understand the critical role that lubricants play in the efficient and effective operation of carbon capture CO₂ compressors.

Our innovative range of lubricants allows you to pick an oil tailored specifically to your carbon capture application. Each product is designed to suit specific scenarios and different economic considerations without compromising quality.

Klüber Summit NGL Series

When maximum performance is non-negotiable, the Klüber Summit NGL Series rises to the occasion. This premium, polyglycol lubricant is engineered to provide unparalleled protection and efficiency, allowing your CO₂ compressors to operate at peak performance levels with confidence. Forget about corrosion, oil carryover, or build-up and focus on your carbon capture initiatives.

Klüber Summit NGS Series

For applications where extreme temperatures or harsh operating conditions are a concern and a PAG-based product is not an option, the Klüber Summit NGS Series delivers unmatched performance and reliability. As a PAO, its resistance to absorption by the gas stream and its high viscosity index ensure consistent lubrication, even under the most challenging circumstances. Compatible with mineral based oils, NGS will reduce the cost to switch from your existing oil to the Klüber product.

Klüber Summit NGP Series

Specifically formulated for CO₂ compressor applications, the Klüber Summit NGP Series provides outstanding lubrication and protection, even in high-pressure environments. Its advanced formula extends equipment life and reduces maintenance costs, making it an excellent choice for carbon capture facilities looking for the most economic choice.

Choose sustainability. Choose reliability. Choose Klüber Lubrication for your carbon capture lubrication needs.

Why choose Klüber Lubrication?

- 1. Expertise:** With years of experience in lubrication technology, Klüber Lubrication is at the forefront of developing solutions for emerging industries such as carbon capture. Our team of experts is dedicated to understanding the unique challenges faced by CO₂ compressors and formulating lubricants that meet these challenges head-on.
- 2. Performance:** Our lubricants are designed to deliver exceptional performance, even in the most demanding conditions. They provide superior protection against wear, corrosion, oil carryover, and downstream build-up, ensuring the longevity and reliability of your compressor equipment.
- 3. Environmental responsibility:** At Klüber Lubrication, we are committed to sustainability and environmental stewardship. Our lubricants are formulated with sustainably sourced materials and comply with the highest environmental standards, minimising the impact on the planet while maximising performance. We are your partner in sustainability efforts.
- 4. Custom solutions:** We recognise that every carbon capture facility is unique, with its own set of operating conditions and requirements. That's why we offer customised lubrication solutions tailored to your specific needs, ensuring optimal performance and efficiency.

Our experts at Klüber Lubrication offer specialised lubrication solutions for carbon capture CO₂ compressors. With our high-quality lubricants, technical expertise, and strong customer support, you can ensure the longevity and efficiency of your equipment.

Klüber Lubrication – your global specialist

Innovative tribological solutions are our passion. Through personal contact and consultation, we help our customers to be successful worldwide, in all industries and markets. With our pioneering technical concepts and experienced, competent staff we have been fulfilling increasingly demanding requirements by manufacturing efficient high-performance lubricants for more than 90 years.

www.klueber.com



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