

AirForge[®]
Forging lubricants



Human Technology
for man, environment
and machines

HUTECH



Philipp and Martin Storr • Managing Directors

Your partner for cooling lubricants

oelheld is a medium-sized company, which has more than 130 years of tradition and experience. Since the foundation in 1887 by Carl Christian Held, oelheld has become an established specialist for lubricants. Partnerships, research, and human resources technology have grown as a valuable tradition of which we are proud of.

Numerous customers and machine manufacturers along with national and international universities have partnered with us to develop high quality lubricants. Through this cooperation we are able to focus intensively on meeting and adjusting to specific requirements on a wide range of different manufacturing processes. Our laboratories are equipped with state-of-the-art analytical equipment and numerous application testing systems that guarantee today's demanding requirements, and many of tomorrow's ever changing new standards.

„Innovative product development, strengthened by continuous quality control and comprehensive customer service, is the key to the success of our products.“



Human Technology

Innovations for man, environment and machines

Hutec is our main focus in the development and production of our products. It is also our mission statement in our use of resources and at oelheld always presence.

What does this mean?

- REACH requirements are fulfilled
- Skin reviews and approvals available for most products
- Low emission and aromatics free / low aromatic products
- Products free of heavy metal
- State-of-the-art production facilities
- Environmentally friendly production processes
- Products are tested for compatibility with machine components
- Sustainability in the selection of raw materials
- Environmentally friendly and resource-saving products





The right lubricants for the forging industry

Increasingly demanding and complex forging processes require new developments of release agents that reduce the number of forming steps in the process.

oelheld's AirForge products (glass coating) for the aerospace industry have been established in the international market for many years. Now, oelheld is increasingly penetrating the market of water-miscible forging lubricants, both in the hot and in the warm forging industry, e.g. in the automotive industry.

Whether with or without graphite, i.e. black or white, the outstanding properties of AirForge products meet the highest demands. We are also well positioned in the field of oil graphite products.

Tell us your requirements and optimize your manufacturing process with the right product of our AirForge series.

AirForge
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Glass-
Coating
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Advantages

- Increased die life
- Clean engravings
- Superior release, cooling and discharge properties
- Reduced down-time
- Excellent wettability
- Perfect part quality
- Highly economical
- Environmentally friendly
- Skin friendly due to low pH value

Industry sectors

- Aerospace
- Automotive
- Medical engineering
- Energy
- Tool manufacturing



AirForge – Black Products

AirForge 5200 – Water graphite

- Water miscible, water graphite based, stable die lubricant
- Produced with extremely fine graphite
- Very easy to mix with water
- Forming a very homogeneous release film
- Excellent wettability
- Excellent release properties at a wide temperature range
- Suitable as pre-lube
- Skin-friendly due to very low pH value of the concentrate

Material

- Steel
- Steel alloys

AirForge 5300 – Water graphite

- Water miscible, water graphite based, die lubricant
- Very easy to mix with water
- Forms a grey release film on the surface
- Excellent wettability
- Reduction of forming forces
- Excellent adhesion properties
- Temperature stable
- Especially suitable for forgings with deep engravings, long drawing distances and hollow bodies

Material

- Steel
- Special steel alloys
- Ferritic and austenitic stainless steels with high chromium or nickel content

AirForge 5308 – Water graphite

- Water miscible, water graphite based, die lubricant
- Very easy to mix with water
- Forms a grey release film on the surface
- Excellent wettability
- Excellent adhesion properties
- Temperature stable
- Especially suitable for difficult flowing stainless steels and forged parts with engravings

Material

- Steel
- Special steel alloys
- Non-ferrous metal
- Aluminium

AirForge – Black Products

AirForge 5310 – Water graphite

- Water miscible, water graphite based, die lubricant
- Very easy to mix with water
- Forms a grey release film on the surface
- Excellent wettability
- Reduction of forming forces
- Excellent adhesion properties
- Ensures clean engravings due to minimal build-up
- Temperature stable
- Especially suitable for forgings with deep engravings, long drawing distances and hollow bodies

Material

- Steel
- Special steel alloys
- Ferritic and austenitic stainless steels with high chromium or nickel content

AirForge 5410 – Water graphite

- Water miscible, water graphite based, die lubricant
- Very easy to mix with water
- Forms a grey release film on the surface
- Excellent wettability
- Especially suitable for aluminum forming as well as non-ferrous metals
- Temperature stable
- Reduction of forming forces

Material

- Non-ferrous metal
- Aluminium



AirForge – Glass Coating

Advantages

- Excellent reproduction accuracy
- Can be applied by immersing, brushing or airless spray system
- Good adhesion after drying
- Superior high temperature lubrication
- Forms a barrier against gas diffusion
- No chemical reaction with metal surfaces
- Very good release properties
- Good compatibility with usual die lubricants
- AirForge Glass-Coating is water based

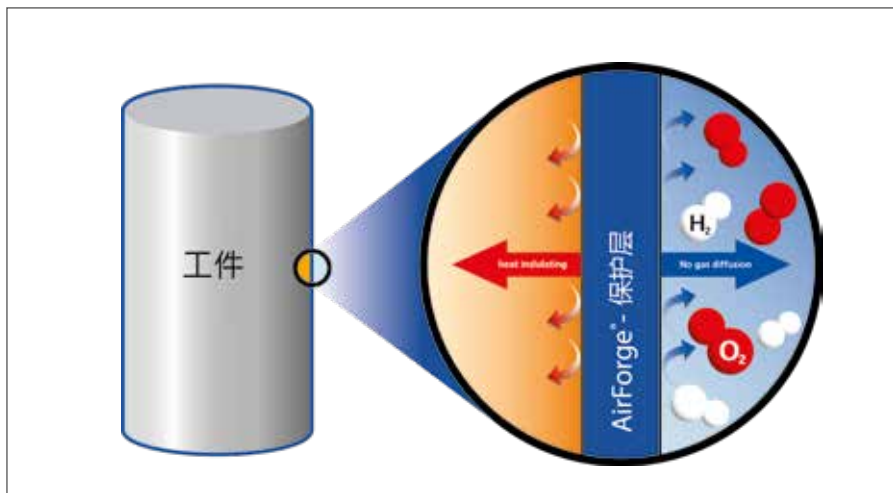


AirForge – Glass Coating

Advantages

Protective effect

It was our goal to develop a protective and lubricating glass coating layer for each specific forging temperature which would ensure an optimized material flow during the forging process for different materials such as titanium as well as nickel-based and steel alloys. The AirForge protective layer surrounds the workpiece and prevents hot gas corrosion and hydrogen diffusion. In addition, good thermal insulation properties ensure optimum material flow throughout the forging process.



Health benefits

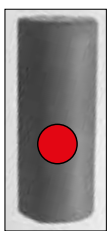
The AirForge Glass Coating product range has been developed in accordance with the latest EU directives and does not contain any hazardous substances such as lead, bismuth, chromium or organic solvents.

High elasticity of the lubricating film

Thanks to the extraordinarily high elasticity of the lubricating film, AirForge Glass Coating guarantees optimal reproducibility, especially in particularly sensitive and inaccessible areas.

Cooling under laboratory conditions

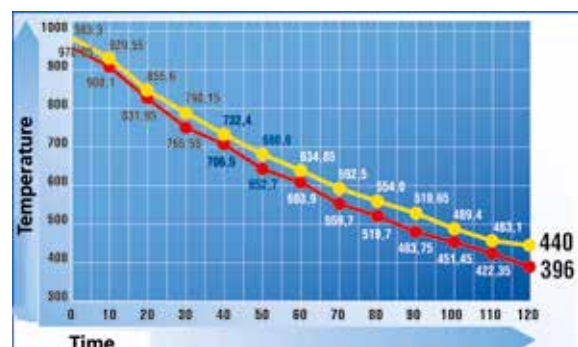
Very good thermal insulation ensuring a lower cooling rate and better material flow during forging process.



Workpiece damaged by hot gas corrosion



Workpiece protected by AirForge coating



AirForge – Glass Coating

Glass-based release agent for hot forming of titanium and special alloys

Product Overview

AirForge 2472

- Color can be selected
- Melting point: 750 – 950 °C (1380 – 1740°F)

Material

- Titanium
- Titanium alloys

AirForge 1983

- Color can be selected
- Melting point: 830 – 930 °C (1525 – 1705 °F)

Material

- Titanium
- Titanium alloys
- Nickel
- Nickel-based alloys

AirForge 2596

- Color can be selected
- Melting point: 900 – 1100 °C (1650 – 2010 °F)

Material

- Titan
- Titanium alloys
- Nickel
- Nickel-based alloys

AirForge 2371

- Color can be selected
- Melting point: 950 – 1150 °C (1740 – 2100 °F)

Material

- Titanium
- Titanium alloys
- Nickel
- Nickel-based alloys
- Special steel alloys





Service analytics and technical advice for your all-round service

- We accompany you right from the start with our technical service on site and our service analysis.
- With us each customer has a direct technical service contact person, who provides advice and support.

The combination of service analytics and technical service in particular offers our customers added value and the security of receiving the appropriate service for the product.

Our service analytics offer a wide range of methods and state-of-the-art analytical instruments, which are used specifically for the requirements of our customers. With this know-how we can provide assistance in troubleshooting and optimize production processes. Employees in these areas take part in training courses and exchange knowledge with each other. This systematic transfer of knowledge ensures that know-how continues to grow and plays an important role in future product developments.

Contact us to learn more about our role for future service!

Process optimization

You want your machine to be more efficient?

1



Contact oelheld

2



First analysis on site by an expert

3



Detailed consultation and proposal

6



Purchase of the lubricant

5



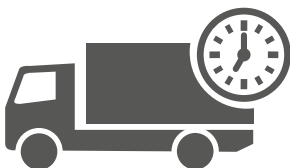
Optimal laboratory analyses

4



Testing phase (if applicable)

7



Fast delivery

8



Regular checks by your oelheld contact

9



Seminars





Quality
since 1887

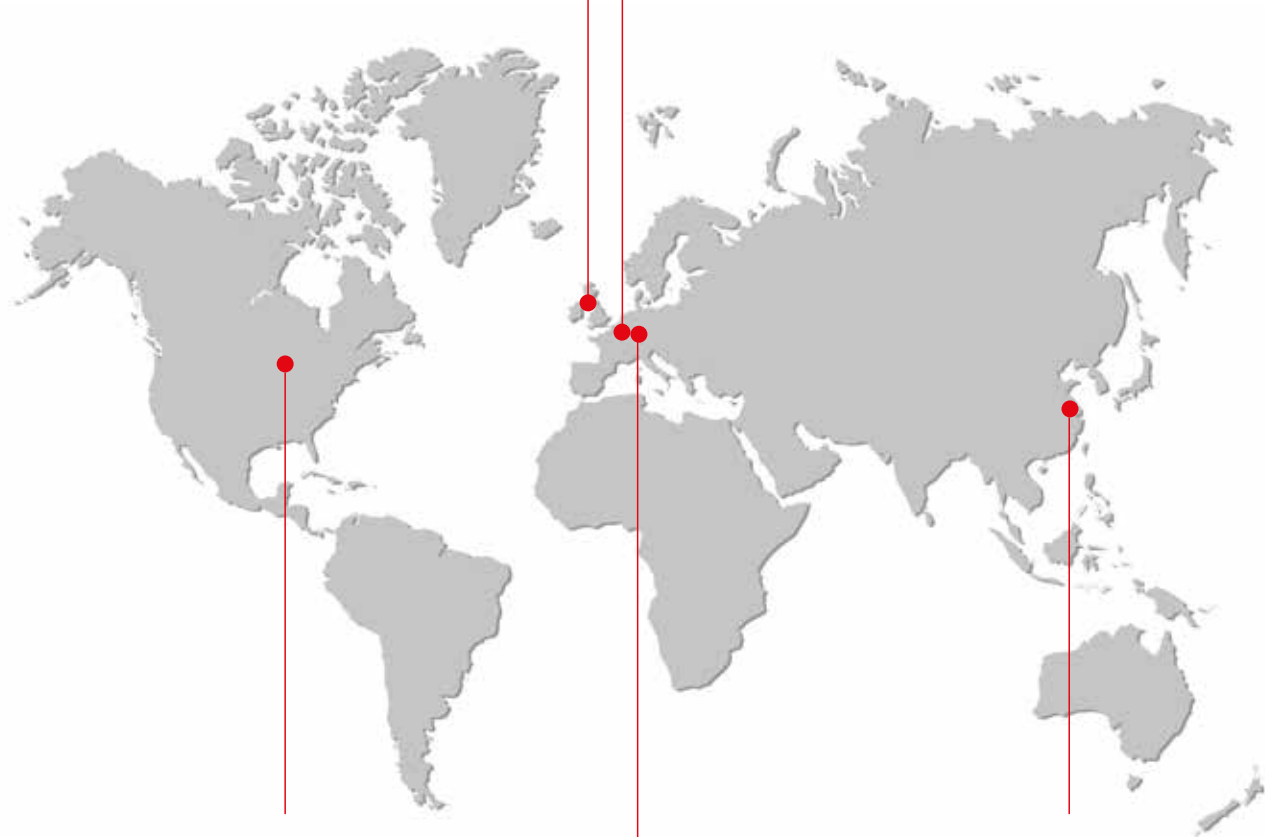
High-tech products for machines – worldwide!

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