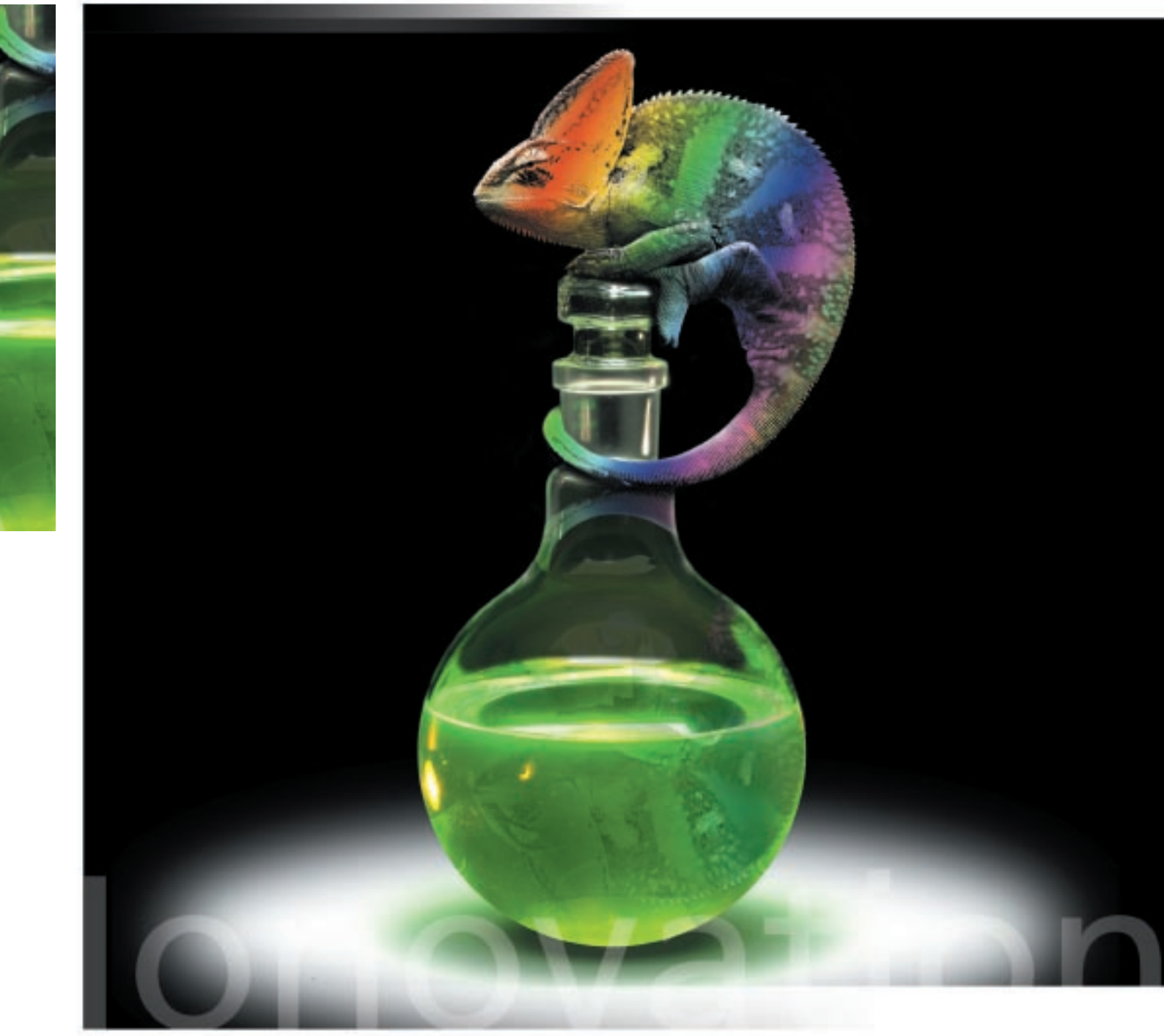
oelheld®
innovative fluid technology

# Dielectrics




HUTEC

# Strong fluids for your application

# Dielectrics

## Quality as the key to success!

When Carl Christian Held started the production of machine oils and greases in 1887, he laid the foundation stone for a medium-sized company that over the past decades has established itself as a specialist in the lubricants sector. oelheld GmbH has existed in its present form since 1989, and has been managed by Dr. Manfred Storr since 1973.

**Innovative fluid management, stringent product development and quality assurance are the key to the success of our products.**

Numerous machine manufacturers therefore develop products together with us that are specially tailored to the demands of their machines. That naturally applies also to our customer.
1948

Our many years of experience with high-tech lubricants also enable us to work intensively to the specific demands of our customers and to adapt existing fluids to a wide range of different production processes.

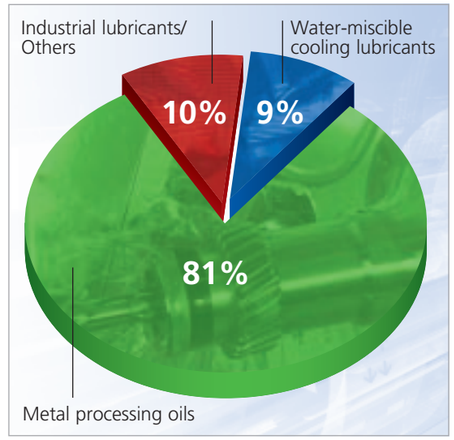
**"Innovative fluid management, stringent product development and quality assurance are the key to the success of our products."**

Dr. Manfred Storr, Managing Director


In order to achieve this, oelheld GmbH works not only very closely with various universities but also has its own laboratories equipped with the latest analysis apparatus and numerous test rigs.

The engineers and technicians in our Research department develop tailored products here that have proven themselves worldwide for many years using the latest basic oil and additive technologies. Metal processing oils, dielectrics and water-miscible cooling lubricants account for the largest proportion of our broad assortment of basic products. We regard these areas as our spheres of key competence and have proved this through numerous patented and extremely successful products.

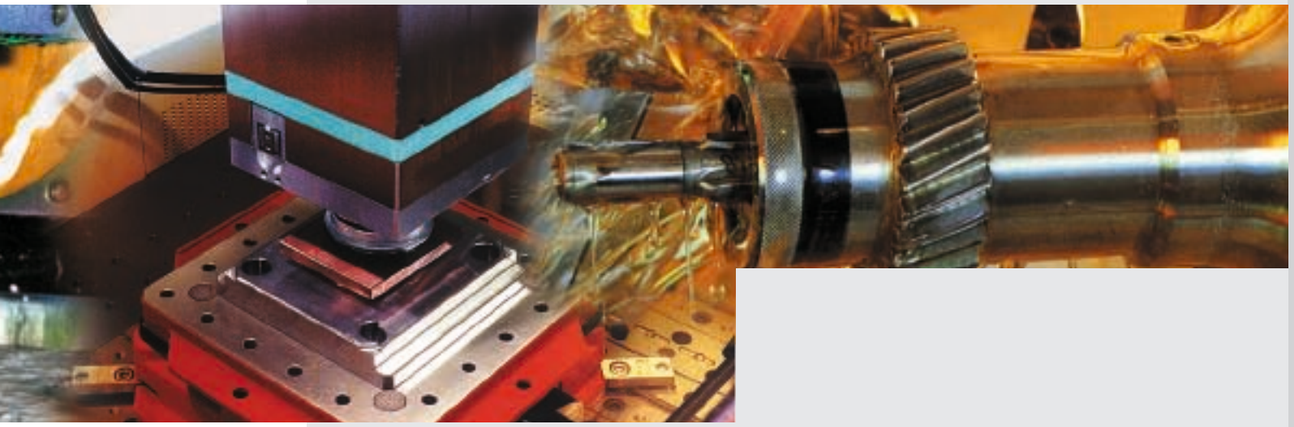
Should you need more than just a standard product or wish to increase the productivity of your production, come to us and put our laboratory to the test. We guarantee a long service life for many of our products and also carry out regular analyses of your products currently in use.




Managementsystem
ISO 9001 ISO 14001

Reg.-No. 057411 QM UM

Whether for roughing work or use in ultra-fine finishing – the dielectric has to satisfy the very specific requirements for every application. The high-performance dielectrics from oelheld are made from synthetic base oils and contain discharge-intensifying and wear-reducing additives and ageing inhibitors for use in electric discharge machining (EDM). By contrast with the conventional mineral oil products, the high-purity synthesis products enriched with the oelheld-patented satellite electrodes from the IonoPlus® series are manufactured in a special blending process.



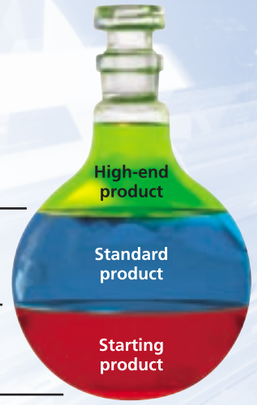
## The benefits of oelheld

The dielectrics from oelheld are characterised in particular by performance-enhancing and application-friendly properties.

- **Less electrode wear**
- **Better polishing results**
- **Faster machining**
- **No filtration problems**
- **Neutral odour**
- **No health hazards**
- **All oelheld dielectrics can be mixed**

## The right dielectric for every machine!

Our dielectrics for EDM can be sub-divided into 3 product categories:




**IonoPlus® Series**

**IME Series**
(shaded for easier identification)

**EcoSpark 105**
(shaded for easier identification)

**EDM**
**erosion discharge machines:**
**IonoPlus® / IME / EcoSpark**

**EDM**
**wire cutting machines:**
**IonoFil / ControFil 2**

**EDM**
**fast hole drilling machine:**
**IonoVit**

The dielectrics from oelheld have been tested in extensive series of trials and have proved to be effective in practice for decades. Leading manufacturers of erosion discharge machines and filters expressly recommend our grades. The dielectrics have very high disruptive strength, are as clear as water (exept IonoPlus®) and practically odourless. Furthermore, they achieve the degree of purity of pharmaceutical white oils and are more or less free of aromatics.

The individual dielectrics from the oelheld product series are specially formulated in their different viscosities and additives to the machining steps and materials in question. In each product series you will find a variant specially formulated for polishing, roughing and universal application.

### EcoSpark 105

- **Good discharge properties**
- **Non-irritating to the skin**
- **Low price**

### Additional products for EDM:

| | |
|---|---|
| ControFil 2 | Corrosion protection for wire erosion |
| IonoVit S | Dielectric for starting hole erosion |
| ControXid Spray | Corrosion protection for wire erosion |

### IME Series Dielectric

- **No odour**
- **Transparent colour**
- **High discharge properties**
- **No irritation to the skin**
- **Low electrode wear**
- **Good surface qualities**
- **Excellent polishing properties**
- **Long service life of the dielectrics**

### Technical Data – IME Series

| | | |
|---|---|---|
| Density at 15° C (g/cm³) | 0,76–0,82 | DIN 51757 |
| Viscosity at 40° C (mm²/s) | 1,30–3,70 | DIN 51562 |
| Flash point ° C | 56–120 | DIN EN 22719 |
| Aromatics content (% w/w) | < 0,01 | DIN 51378 |

### IonoPlus® Series

- **Combination of high-purity synthetic products**
- **Enriched with satellite electrodes**
- **Up to 20% higher discharge capacity than the IME dielectrics**
- **Free from aromatics**
- **No odour**
- **Transparent green colour**
- **Even lower electrode wear than with the IME dielectrics**
- **Excellent surface qualities**
- **Ever higher polishing properties**
- **Long service life of the dielectrics**
- **No toxic or allergic reactions**

### Technical Data IonoPlus® Series:

| | | |
|---|---|---|
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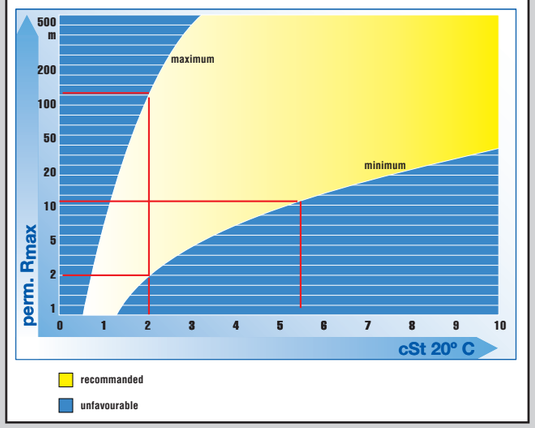
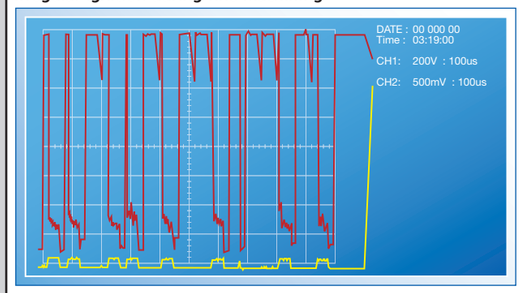
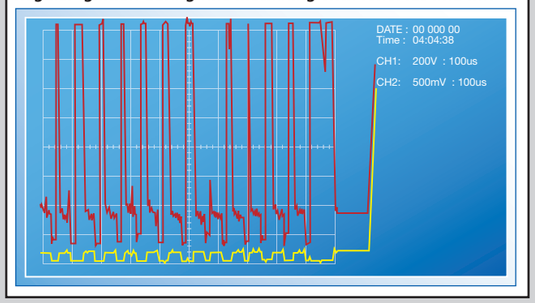
**Table of recommended viscosity as a function of $R_{max}$**




**Irregular ignition during fine machining**




**Regular ignition during fine machining with IonoPlus IME-MH**




As can be seen from the diagram above, more regular ignitions per unit of time can be achieved by changing the dielectric from IME to IonoPlus®. That means more discharges and hence shorter discharge times. The secret are the satellite electrodes distributed in the fluid that create a faster discharge bridge that produces an effectiv spark channel.

All oelheld dielectrics have been classified by the Research and Materials Institute Baden- Württemberg as representing no health hazard in their operational safety and industrial hygiene.