oelheld®
innovative fluid technology

# IonoVit®0 - IonoVit®S

## Dielectric fluids for EDM fast hole drilling machines

Human Technology
for man, environment
and machines
HUTEC

# Superior fluids for all your applications

## Quality is the key to success!

**Philipp and Martin Storr**
Managing directors

The company which was founded by Carl Christian Held in 1887, has become the corporation group as we know it today. In his day, Held could never have imagined that his company would be amongst one of the leading manufacturers of high-tech lubricants.

In the following summary, we outline to you just one example of the high requirements fulfilled by oelheld, in the newest innovation of dielectric technologies.

At oelheld you receive sealed and certified quality since 1996. The certificates according to DIN EN ISO 9001 and DIN EN ISO 14001 prove our solid standards regarding product and service quality.

Eroding fast hole drilling machines are no longer only used for start hole drilling. The call for more precision becomes louder in this section.
oelheld accepted this challenge and developed two dielectrics for fast hole drilling machines which meet these requirements.


ZERTIFIKAT

DQS GmbH

oelheld GmbH

ISO 9001 : 2008 ISO 14001 : 2004


IQNet

THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

oelheld GmbH

ISO 9001 : 2008 ISO 14001 : 2004

## Human Technology

- Human technology is not just a trademark at oelheld - it is a guiding principle. Low risk potential as well as environmental safety of the products and the application are most important for us.
- Following the principle, we develop fluids that are best-suited for the application of our customers but also provide the best possible health and environmental aspects. Therefore our production plant is based on special sealed floors and equipped with the latest blending technology which provides additional safety.
- **Human Technology for Man, Environment and Machines – our contribution toward a better future!**

HUTEC

# High-quality precision holes when using IonoVit®0

## High-performance dielectric IonoVit®0

This new development by oelheld, a water-based medium which contains proper additives, guarantees the manufacturing of reproducible and high-quality holes for electrode diameters of 0,1 – 3,0 mm and larger.

IonoVit®0 is delivered ready-to-use. The brix-value is in a range of 5% - 7%. A dielectric aggregate (water treatment) is necessary, which is responsible for a good quality in cooperation with the mixed-resin cartridge. The medium should be cooled as otherwise a steady performance cannot be reached.

**Measuring device:**
- Refractometer 5% - 7% Brix (water down only with deionised water)
- Conductivity meter: conductance 0 - 10 µS/cm
- pH-value test strip 5 - 7

**Peripheral requirement:**
Water treatment
- Dielectric aggregate with filter and deionised resin absolutely necessary
- Integrate the cooling coil into the cooling system - recommended for reproducible quality (optional) -
- Good electrode quality (electrode with bar)

## IonoVit®0 – Your benefits –

- **Steel machining**
  - No corrosion formation
  - Free of heavy metal and chlorine compounds

- **Heavy metal machining**
  - No visible cobalt leaching at bore entrance
  - Technological changes at the machine are not necessary
  - No machine soiling
  - Free of heavy metal and chlorine compounds

# IonoVit®S for quality fast hole drilling machines

## High-performance dielectric IonoVit®S

IonoVit®S is a high-performance dielectric designed for economic and fast working from an electrode diameter of 0,5 mm. It is also suitable for the processing of aluminum. Work pieces made of ferrous metals are temporarily protected from corrosion.

IonoVit®S is a ready-to-use product. The concentration is regulated using a hand refractometer: The refractometer display for the ready-to-use IonoVit®S is 7,0 % Brix.

**Measuring device:**
- Refractometer 7% Brix (water down only with deionised water)

**Peripheral requirement:**
Water treatment
- Dielectric aggregate with filter
- Integrate the cooling coil into the cooling system - recommended for reproducible quality (optional) -
- Normal electrode quality is sufficient

## IonoVit®S – Your benefits –

- **Free of heavy metal and chlorine compounds**
- **Low electrode wear**
- **No foaming**
- **Little time exposure during drilling**
- **Temporary corrosion protection**
- **Mild in odour**

# Distinction*

*Results determined by the EDM-Technology centre of oelheld.

## Deionised water

### Drill holes in steel and carbide (electrodes ø 1,5mm)


**Deionised water**
Material: steel
Electrode: brass
Entrance
ø = 1,69 mm

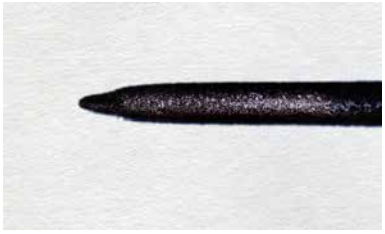

**Deionised water**
Material: steel
Electrode: copper
Entrance
ø = 1,72 mm


**Deionised water**
Material: carbide

Entrance
ø = 1,69 mm

### Electrode wear

**Deionised water**
Diameter = 1,5 mm



### Corrosion

**Deionised water**
Corrosion,
already after several hours

## IonoVit®0


**IonoVit®0**
Material: steel

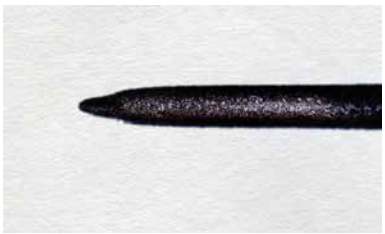
Entrance
ø = 1,67 mm


**IonoVit®0**
Material: carbide

Entrance
ø = 1,68 mm

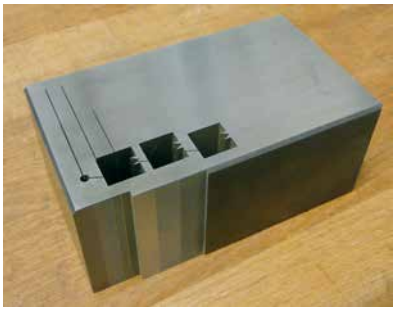
### Electrode wear

**IonoVit®0**
Diameter = 1,5 mm



### Corrosion

**IonoVit®0**
No corrosion,
even after several days



## IonoVit®S


**IonoVit®S**
Material: steel

Entrance
ø = 1,68 mm


**IonoVit®S**
Material: carbide

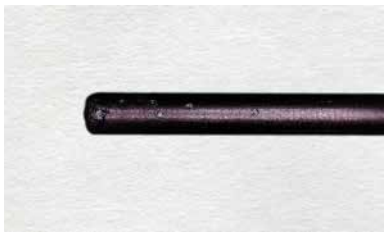
Entrance
ø = 1,83 mm


**IonoVit®S**
Material: carbide

Exit
ø = 1,69 mm

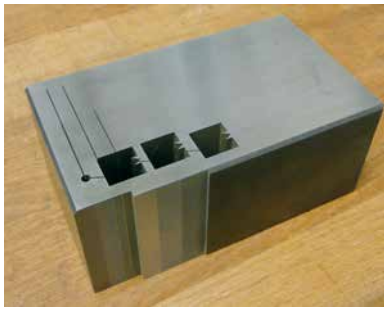
### Electrode wear

**IonoVit®S**
Diameter = 1,5 mm



### Corrosion

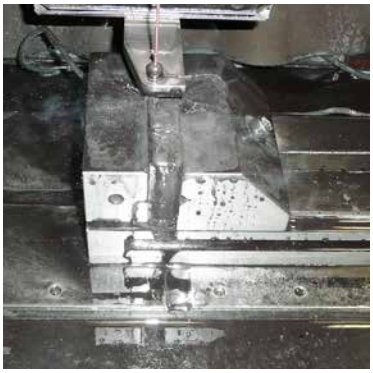
**IonoVit®S**
No corrosion,
even after several days



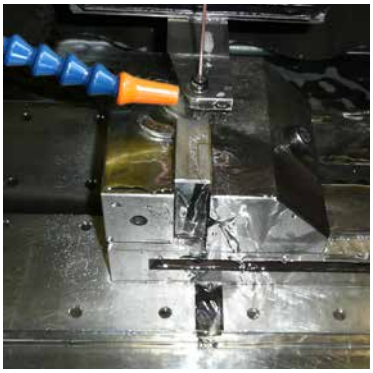
# Distinction

## Cleanness

**Competitive product**
Strong soiling

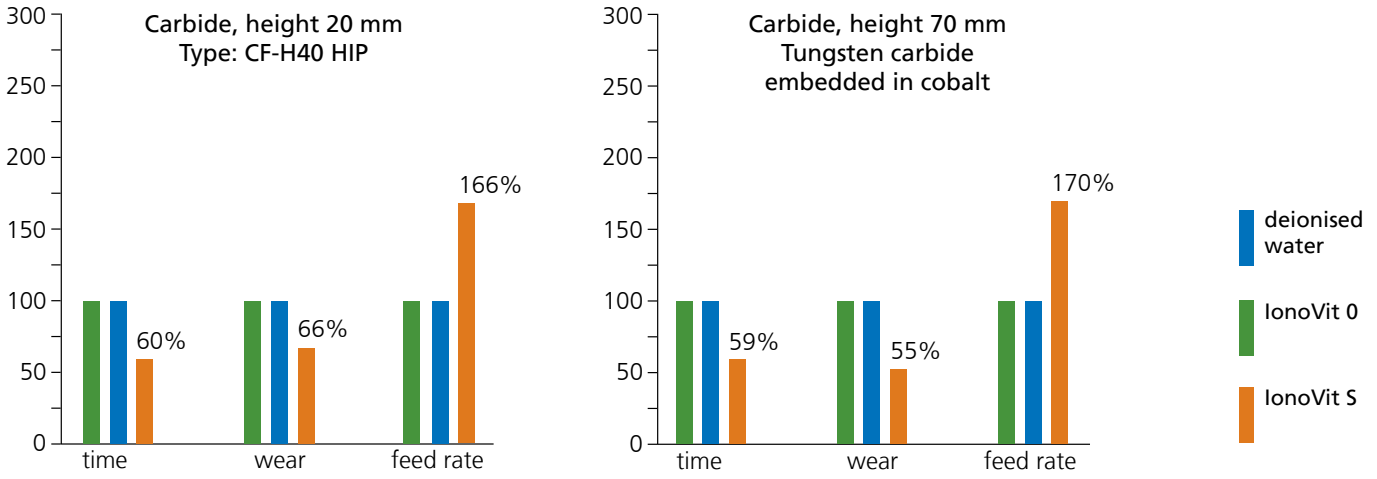


**Deionised water, IonoVit 0, IonoVit S**
Without flushing
Low soiling

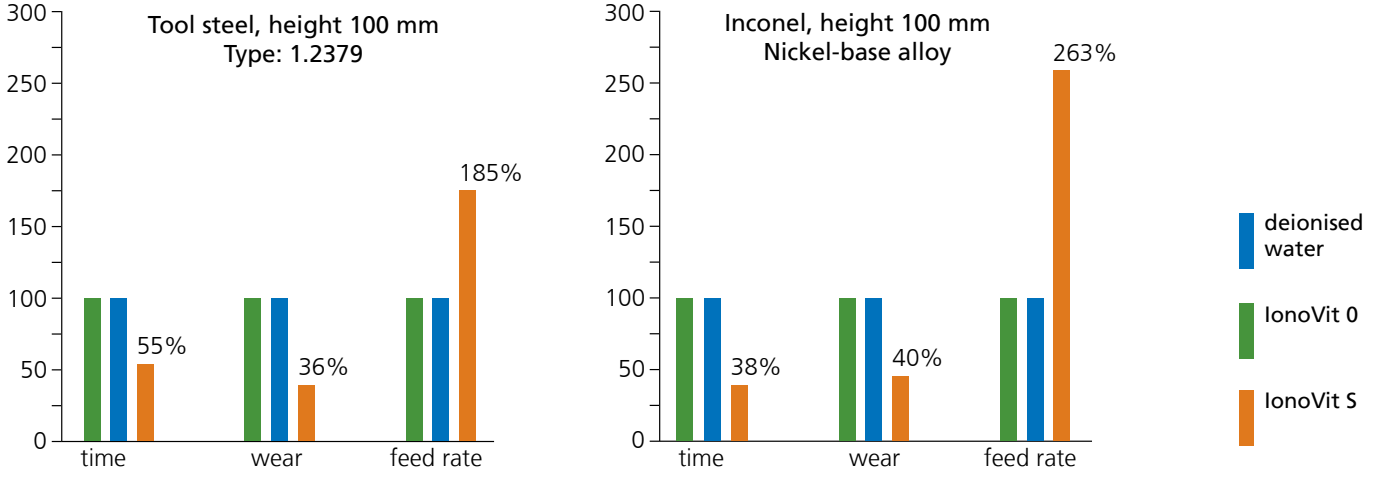


**Deionised water, IonoVit 0, IonoVit S**
With flushing
Clean workplace

## Benefits of IonoVit®S against deionised water / IonoVit®0




## Benefits of IonoVit®S against deionised water / IonoVit®0



# Peripheral products

## Water treatment

For the application of IonoVit®0 and IonoVit®S a dielectric aggregate is required.

If none is included in the machine, the DA 60 can be used.

**Important:**
The recommended cooling guarantees a reproducible quality with both products.

The cooling coil is not included (optional).

## Hand refractometer

This measuring device is necessary to measure the concentration of these products and, if required, to adjust with deionised water.

## pH-value test strips


The quality inspection of the water quality of IonoVit®0 takes place by using pH-value test strips.

## Conductivity meter

When using IonoVit® 0, a water conductance smaller than 10 µS/cm is required.
At a value bigger than 10 µS/cm the resin cartridge has to be changed.

# High-tech products for machines – worldwide!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