FILTREC®

▲BSOLUTEβETA® H2O H2OPLUS

Failures and unplanned downtime in a hydraulic system are often imputed to excessive levels of solid contamination but also water can be a serious contaminant as it can cause breakdowns but also affects the performance of the fluid.

The presence of water damages the components of the system increases service costs and, in the oil, induces oxidation and rust formation. It decreases the quality of lubrication, additives action and viscosity.

ABSOLUTE BETA | H2O technology filter elements are specifically designed for the absorption of water from hydraulic fluids.

This configuration is an efficient method to remove water contamination. The absorbing media, embedded in the filter material, removes water by a physical-chemical reaction. When absorbed, the water particles are locked physically by the gel formed and are not able to return to the fluid. This reaction is not reversible also with increased pressure.
However hydraulic oil passes through this media without interference. When the gel formation is complete, the media stops the water removal reaction. Water removal results can extended oil life, decreased system downtime, and increase the life of the equipment.

A wide range of Filtrec filter elements can be manufactured with **ABSOLUTE BETA |H2O**, in addition, **ABSOLUTE BETA |H2O PLUS** can be an effective water absorption configuration of separating water from hydraulic fluids and at the same time an optimal filtration of solid particles.

HOW TO CALCULATE THE NUMBER OF FILTER ELEMENTS NEEDED?

It is important to know the number of filter elements necessary to drop the rate of water down to the target value, this can be calculated with the formula below.This formula provides only a rough estimate of the number of elements. Depending on the viscosity of the oil and the flow rate, the value obtained from this formula could deviate from the number of elements actually needed.
The amount of water in the fluid is expressed in ppm (parts per million).

$$N = \frac{V_{oil} \times C_w}{1000 \times (k_{H_2O} \times A)}$$

N = number of filter elements needed

V_{oil} = oil volume in the system (l)

C_w = water concentration in the system (ppm - Karl Fisher method)

K_{H2O} = 0.078 ml/cm^2 for H$_2$O Plus
0.082 ml/cm^2 for H$_2$O

A = filtering surface of filter element (cm^2)

WHICH PROBLEMS CAN CAUSE WATER?

WHAT ARE THE BENEFITS OF ▲BSOLUTEβETA® | H₂O | H₂O PLUS ?

The problems caused by water contamination can be serious, for example:

- Water damages the components of systems and machines.

- It increases the service costs.

- Water particles can cause corrosion, early wear, and oxidation of the fluid.

- It increases solid contamination.

- Ice creation at low temperature.

- Acidification of the fluid.

Our new technology **ABSOLUTE BETA | H2O** can guarantee:

- **Water and solid particles removal especially with ▲BSOLUTEβETA® | H₂O PLUS**

- **Reduction of oil degradation and longer oil service.**

- **Better efficiency and reliability of the system.**

- **Reduction of unplanned downtimes.**

- **Reduction of the cost of ownership.**

- **Maximize the lifetime of hydraulic components.**

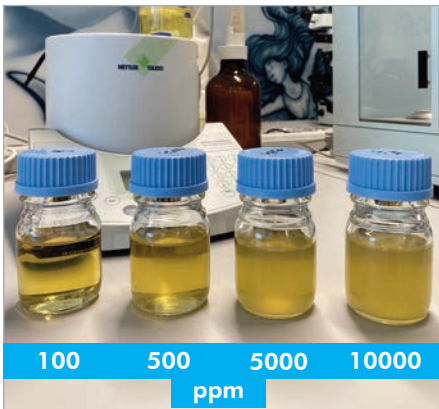| 100	500	5000	10000
		ppm	

Fig.1 Water content determination according to Karl Fischer titration method ISO 12937
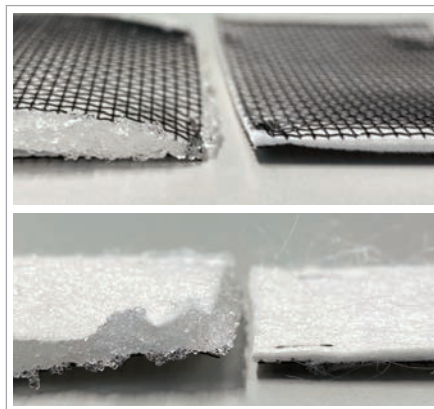
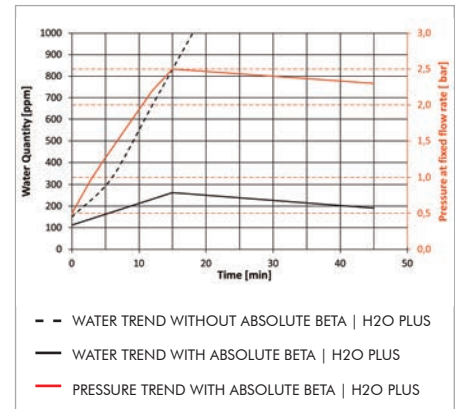Fig.2 Absolute Beta H2O and H2O| plus media with and with and without absorbed water

- - - WATER TREND WITHOUT ABSOLUTE BETA | H2O PLUS
—— WATER TREND WITH ABSOLUTE BETA | H2O PLUS
—— PRESSURE TREND WITH ABSOLUTE BETA | H2O PLUS

Fig.3 Example of water and pressure trend on an Absolute Beta H2O | PLUS element.

HOW TO RECOGNIZE IT?

You will find

△β ⬡ | △β ⬡⁺

hallmark on the endcap of the new **ABSOLUTE BETA| H2O - H2O PLUS** and a new label on the box.

KINDNESS AS A VALUE

To ensure a top quality solution: for any enquiries there is a Filtrec specialist that will assist you, from choosing the right size to configuring your system.

**www.filtrec.com
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