Biotherm DTX

Non Toxic Glycol Antifreeze

For use in high temperature biomass heating systems

Performance Properties

Biotherm DTX has been especially formulated for the Biomass sector to exploit the advantages Ethylene Glycol has over Propylene Glycol, whilst delivering a non toxic *solution*. Specifically;

- More efficient heat transfer.
- Easier to pump, especially at low temperatures.
- Less volume for the same freeze protection.
- Cheaper per litre.

Non Toxic:

Although based on Ethylene Glycol, **Biotherm DTX** has been tested and classified as Non Toxic by an EPA certified laboratory. Previously Propylene Glycol was the only non toxic glycol available, that is no longer the case. Hydratech in alliance with Evans Cooling Systems, Inc. have developed and patented the DeTox® additive. DeTox® prevents Ethylene Glycol from being metabolised (during digestion) into toxic by-products, which cause kidney failure, blindness and death. Tests carried out on **Biotherm DTX** confirmed the toxicity was "so low that it was impossible to determine an LD50 value". The DeTox® additive has very little effect on heat transfer or antifreeze performance. In fact similar volumes of **Biotherm DTX** or Ethylene Glycol are required to achieve a specific freeze protection.

Optimum Flow:

Biotherm DTX has improved heat transfer characteristics. Including lower Dynamic Viscosity and higher Thermal Conductivity. For detailed comparison please refer to the Fluid Performance Chart - available upon request.

Protection:

Biotherm DTX contains synergistic corrosion inhibitors to protect metals commonly found in such systems. It has been independently tested and found to meet BS6580 and ASTM D1384 corrosion standards. Biotherm DTX also contains scale and biological inhibitors to help prevent fouling – thus promoting long operational life and high thermal efficiency.

Application

As per BSRIA guide BG 29/2012 all pipework systems should be clean and free from biological contamination and debris prior to commissioning. To minimise corrosion air ingress should be minimized. A pressurised system is best. Determine the total system volume and add **Biotherm DTX** to the system according to the minimum operating temperature required (see table). The minimum dose of **Biotherm DTX** should not be less than 22% of the system volume and the maximum does not normally exceed 60%. We

Physical Properties

Frost Protection
-50°C depending on concentration.

Density
1.11 g/cm³

pH
7.5 - 9.0 depending on inhibitors

Boiling Point
>100°C
For operating temperatures above 100°C, refer to Hydratech for technical advice.

Characteristics
Clear, straw coloured, slightly viscous liquid. It is mildly sweet to the taste and has a non-pungent but characteristic aroma.

Biodegradability
Biotherm DTX mixtures are readily biodegradable (90% over ten days) and will not remain in the environment or bio-accumulate.

Container Sizes
Available in: 5, 10, 25, 205L drums & 1000L IBCs

recommend the use of deionised, distilled or UltraPure™ water for this dilution. Avoid water containing high levels of calcium salts or Chlorides [Cl-].

Biotherm DTX can be supplied as a Ready-To-Use solution.

Diluting Concentrate

When measuring the percentage concentration of Biotherm DTX in solution we recommend the use of a recently calibrated refractometer.

Frost Protection °C	v/v of Biotherm DTX %	Refractive Index
-10	22.0	1.35600
-15	28.0	1.36200
-20	33.0	1.36700
-25	38.0	1.37200
-30	42.0	1.37600
-35	46.0	1.38000

Fluid Management Services

To ensure inhibitor levels are being maintained and the system fluid is in good condition, we recommend periodic sampling and testing. Hydratech operate the Fluid Monitoring Program (FMP) service for all users of our products. For more information on the FMP please call or visit www.hydratech.co.uk.

Quality Assured

Biotherm DTX meets or exceeds the corrosion standards laid down in ASTM D-1384. Hydratech products are manufactured in accordance with ISO 9001: 2015 procedures.

Storage & Shelf Life

At least 3 years when stored in sealed containers, below 40°C and out of direct sunlight.

Health & Safety

Please refer to the associated Safety Data Sheet, which is available online via Login and/or by mail.

24/7 Technical Support

Technical support services and products to ensure ongoing system efficiency and protection.

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