Biotherm VB4

Vegetable Extract Based Antifreeze

For use in high temperature biomass heating systems

Performance Properties

BioTherm VB4 has been especially formulated to provide Biomass Heating System installers with a heat transfer fluid that is 100% RENEWABLE. I.E. not derived from non-renewable crude oil. **BioTherm VB4** is based on sustainable Refined Vegetable Extracts that are Non Toxic, Bio-Degradable and more thermally efficient than Propylene Glycol based coolants. Subsequently **BioTherm VB4** could be considered the most ecologically friendly antifreeze available.

Non Toxic:

BioTherm VB4 has an LD50 toxicity rating (Oral Rat) of >=15,000 mg/kg of body weight (bw) = 'Relatively Harmless'. As confirmed by the Hodge & Sterner Scale.

Protection:

BioTherm VB4 contains synergistic corrosion inhibitors to protect metals commonly found in such systems. It has been tested in accordance with BS5117 and found to meet BS6580 and ASTM D1384 corrosion standards.

BioTherm VB4 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 pipe-work systems should be clean and free from biological contamination and debris prior to commissioning. To minimise corrosion air ingress should be minimised. A pressurised system is best. Determine the total system volume and add **BioTherm VB4** to the system according to the minimum operating temperature required (see table, below). The minimum dose of **BioTherm VB4** should not be less than 25% of the system volume and the maximum does not normally exceed 60%. We recommend the use of deionised, distilled or UltraPure™ water for this dilution. Avoid water containing high levels of calcium salts or Chlorides [Cl-].

BioTherm VB4 can also be supplied as a Ready-To-Use solution.

Diluting Concentrate

When measuring the percentage concentration of Biotherm VB4 in solution we recommend the use of a recently calibrated refractometer.

Physical Properties

Frost Protection
-50°C depending on concentration.

Density
1.02 - 1.26 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
a clear, slightly viscous liquid. It is slightly sweet to the taste and has a non-pungent but characteristic aroma.

Biodegradability
BioTherm VB4 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

Frost Protection °C	v/v of Biotherm VB4 %	Refractive Index
-10	25.0	1.36300
-15	32.0	1.37100
-20	38.0	1.37800
-25	43.0	1.38400
-30	48.0	1.38900
-35	52.0	1.39400

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 VB4 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.

tel. 01792 586800

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