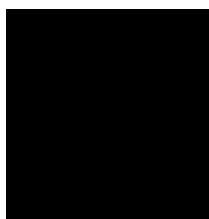




## Geothermal & Air Source Fluid

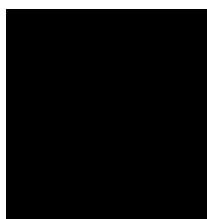
High Efficiency Non-Toxic Heat Transfer Fluid with Antifreeze Function. Based on Ethylene Glycol blended with patented DeTox™ additive and BS6580 & ASTM D1384 proven Corrosion, Scale and Biological Inhibitors.



Antifreeze



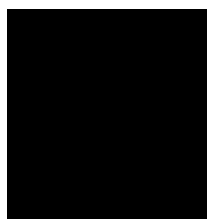
Non-Toxic



Optimum Flow



Protection



Biodegradable



Quality Assured

### Performance Properties:

**Thermox DTX** has been especially formulated for use in Geothermal and Air Source heating systems, 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.

**Antifreeze:** **Thermox DTX** is miscible with water in all proportions and can protect Geothermal and Air Source systems down to -50°C depending on concentration.

**Non-Toxic:** Although based on Ethylene Glycol, **Thermox 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 **Thermox 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 **Thermox DTX** or Ethylene Glycol are required to achieve a specific freeze protection.

**Optimum Flow:** **Thermox 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:** **Thermox 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.

**Thermox DTX** also contains scale and biological inhibitors to help prevent fouling - thus promoting long operational life and high thermal efficiency.

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

**Quality Assured:** All Hydratech products are manufactured in accordance with certified ISO9001-2008 procedures

## Physical Properties:

**Thermox DTX** is a clear, slightly viscous liquid. It is mildly sweet to the taste and has a non-pungent but characteristic aroma.

**Density:** 1.04 - 1.15 g/cm<sup>3</sup>  
**pH:** 7.5 - 10.5 depending on inhibitors  
**Boiling Point:** >100°C

## 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 minimized. A pressurised system is best.

Determine the total system volume and add **Thermox DTX** to the system according to the minimum operating temperature required (see table). The minimum dose of **Thermox DTX** should not be less than 22% 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-].

## Diluting Concentrate:

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

**Health & Safety:** Please refer to the associated Safety Data Sheet. Available by Login or upon request.

**Shelf Life:** >3 years when stored in sealed containers out of direct sunlight.

**Available in:** 5, 10, 15, 20, 25, 205 & 1000 litre containers and bulk tankers.

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

Frost Protection °C	v/v of Thermox DTX	Refractive Index
-10	22%	1.356
-15	28%	1.362
-20	33%	1.367
-25	38%	1.372
-30	42%	1.376
-35	46%	1.380

**SureFlow** Support Services ensure that end users and distributors receive the full benefit of working with a specialist manufacturer.

- Expert technical advice on all aspects of fluid selection, including Environmental Impact Assessments, Thermal Performance etc.
- Fluid Maintenance Program; for the proactive verification of fluid and system condition.
- Huge stock inventory facilitating same day dispatch and delivery.
- Bespoke formulations for specialist applications.

Hydratech are contributing members of the following profession associations: