

**Properties:**

COOLFLOW DTX has been especially formulated to exploit the advantages Ethylene Glycol has over Propylene Glycol. Specifically;

- More efficient heat transfer.
- Easier to pump, especially at low temperatures.
- Less volume for the same freeze protection.
- Cheaper per litre.
- Resulting in higher coefficient of performance and significantly reduced energy bills.

Although based on Ethylene Glycol, **COOLFLOW DTX** has been tested and classified as Non-Toxic<sup>1</sup> by an EPA<sup>2</sup> certified laboratory. Previously Propylene Glycol was the only non-toxic glycol based fluid available. That is no longer the case<sup>3</sup>.

The **DeTox™** additive prevents Ethylene Glycol from being metabolised (during digestion) into toxic by-products<sup>4</sup>. Tests carried out on **COOLFLOW DTX** confirmed the toxicity was “so low that it was impossible to determine an LD50<sup>5</sup> value”.

The **DeTox™** additive has very little effect on heat transfer or antifreeze performance. In fact similar volumes of **COOLFLOW DTX** or Ethylene Glycol are required to achieve a specific freeze protection.

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

**COOLFLOW DTX** 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 corrosion standards for mild & stainless steel, aluminium, copper, brass and cast iron. Zinc or galvanised components are not recommended for use in closed loop cooling or heating systems.

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



High Efficiency Non-Toxic Process Coolant, based on Ethylene Glycol blended with patented DeTox™ additive and BS6580 proven Corrosion, Scale and Biological Inhibitors.



Anti-Freeze



Optimum Flow



Non-Toxic



Biodegradable



Corrosion Control



Quality Assured

**“Tested and approved for use in Dairies, Bakeries and Breweries”**

## Properties (continued):

**COOLFLOW DTX** is miscible with water in all proportions and can protect Process Cooling Systems down to -50°C depending on concentration.

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

**COOLFLOW DTX** exhibits super-cooling characteristics and mixtures containing in excess of 50% by volume do not freeze solid, alleviating any concern over possible expansion and burst damage.

**Density:** 1.04 - 1.15g/cm<sup>3</sup> depending on inhibitors

**PH:** 7.5 - 10.5 depending on inhibitors

**Boiling Point:** >100°C

## Application

As per BSRIA guide AG 1/2001.1 all pipe-work systems should be clean and free from biological contamination prior to commissioning.

To minimise corrosion air <sup>6</sup> ingress should be minimized. A pressurised system is best.

Determine the total system volume and add **COOLFLOW DTX** to the system according to the minimum operating temperature required (see table). The minimum dose of **COOLFLOW 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<sup>-</sup>].

**Health & Safety:** Please refer to the associated Safety Data Sheet.

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

**Available in:** 5, 10, 15, 20, 25, 205 & 1,000 litre containers and in bulk tankers.

**COOLFLOW DTX** can also be supplied pre-mixed, as a Ready-To-Use solution.

## Mixing Guide for COOLFLOW DTX

Frost Protection °C	% v/v of COOLFLOW DTX in the system	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

When measuring the percentage of **COOLFLOW DTX** in the system use a refractometer



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

- Fluid Maintenance Program; for the proactive verification of fluid and system condition.

### Nomenclature

- 1 According to the Hodge & Sterner Toxicity Scale, an LD50 rating between 500 - 5,000 mg/kg body-weight (bw) is classed as "Slightly Toxic" and anything above 15,000 mg/kg bw is classed as "Relatively Harmless" I.E. Non-Toxic.
- 2 EPA = United States Environmental Protection Agency.
- 3 COOLFLOW DTX LD50 (Oral Rat) >21,000 mg/kg bw.  
Propylene Glycol LD50 20,000 mg/kg bw.  
Ethylene Glycol LD50 4,700 mg/kg bw.
- 4 According to the US Department of Health & Human Services as little as 150ml of Ethylene Glycol can lead to death and much smaller amounts can lead to renal failure in humans.
- 5 LD50 = Lethal Dose (oral) that causes the death of 50% of the lab rats.
- 6 Oxygen feeds the corrosion process and consumes inhibitors.

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