

Bioflow is a high performance concentrated, multi-component, inhibited low oral toxicity mono propylene glycol based heat transfer fluid designed specifically for use in secondary refrigerant systems and in food and beverage processing plants. It is a suitable anti-freeze for use in industrial, commercial and agricultural applications where there is a possibility of incidental contact with food (NSF Nonfood Compounds HT1 Registration No. 151069).

Bioflow (NSF HT1) has been formulated with US FDA approved direct and indirect food additives which pose minimal risk to human health. The Bioflow (NSF HT1) formulation helps to improve the longevity of the system by providing excellent freeze protection, corrosion protection and higher resistance to degradation whilst maximising heat transfer efficiency and reducing long terms costs associated with system maintenance.

Bioflow (NSF HT1) is tested to and exceeds the ASTM D1384-05 corrosion test standard for metals commonly found within secondary refrigerant systems including copper, steel, cast iron, solder, brass and aluminium.

### Features and benefits

- **For use in food and beverage processing and secondary refrigerant systems**
- **Low oral toxicity propylene glycol (propane 1,2 diol) based**
- **Formulated with US FDA approved direct and indirect food additives**
- **Conforms to ASTM D1384-05 corrosion test standard**
- **Temperature range -35 to 120°C**

### User guidelines

Before installation of Bioflow it is strongly recommended that all systems are cleaned and disinfected, with all debris and deposits removed and treated with an effective sanitising solution to prevent bacterial contamination.

The use of de-ionised water or the highest possible water quality is highly recommended when diluting the product concentrate to ensure optimum corrosion protection.

### Monitoring

A fluid health check is highly recommended at least once a year to check for signs of fluid degradation, signs of corrosion and/or biological fouling.

### Dosage

The dilution rate depends on the freeze point required by the system.

- Product concentrate should not be diluted below 25% v/v
- Product concentrate >30% v/v for optimal protection

Water hardness should not exceed 250 ppm and chloride content should not exceed 25 ppm for optimum performance.

Dilution % v/v	Freeze point	Density @ 20°C	Refractive Index
25	-9	1.0218	1.3599
30	-12	1.0253	1.3649
35	-15	1.0288	1.3699
40	-19	1.0323	1.3749

**The above indicated dilutions are also available from Nexus as ready-to-use products diluted with de-ionised water for optimum scale and corrosion protection.**

## Physical properties

Property	Test Method	Unit	Value
Appearance	Visual	N/A	Undyed Liquid
Boiling point @ 1013mbar	ASTM D1120-11	°C	ca 151
Density @ 20°C	ASTM D7042-11	g / cm <sup>3</sup>	1.02 - 1.10
Dynamic Viscosity @ 20°C	ASTM D7042-11	mPa.s	ca 54.0
Flash Point (CoC)	ASTM D92	°C	ca 108
Kinematic Viscosity @ 20°C	ASTM D7042-11	mm <sup>2</sup> /s	ca 51.8
Pour Point	IP15	°C	<-25
pH @ 20°C (33% Vol in water)	ASTM E70-07	pH	8.2-9.6
Refractive Index @ 20°C	ASTM D1747-09		ca 1.431
Reverse Alkalinity	ASTM D1121	mls HCl (0.1M)	ca 3
Surface Tension @ 20°C (33% Vol in water)	ASTM D1331	mN / m	ca 37
Water Hazard Classification		WGK 1	

**All properties are in concentrate form unless otherwise stated.**

**Bioflow is available in the following pack sizes:  
5, 10, 20, 25, 215, 1000 litre or bulk tanker deliveries.**