

PROTECT TURBO N

Cold and corrosion protection for all ground-source heat pump systems

Art.-No. 31973

Base

PROTECT TURBO N is a nitrite, amine, phosphate and silicate free mixture of corrosion inhibitors and monoethylene glycol, according to the latest Organic Acid Technology (OAT).

Specifications

Complies with all international specifications for antifreeze systems in terms of material compatibility, temperatures, long-term use, corrosion, etc.

Features

PROTECT TURBO N is a clear, yellow colored, slightly smelling liquid based on monoethylene glycol. The product is miscible with water in any ratio and, depending on the concentration, provides antifreeze protection down to approx. -50°C. Mixtures of PROTECT TURBO N and water do not segregate. The corrosion protection inhibitors of PROTECT TURBO N protect all metal materials commonly used in heat pump technology long and reliably against corrosion, aging and incrustation, even in mixed installations. PROTECT TURBO N / water mixtures do not attack the sealing materials commonly used in heat pump technology.

Miscibility

PROTECT TURBO N is miscible with all commercially available ethylene glycol-based antifreeze agents. However, we recommend consulting our application technology department before mixing PROTECT TURBO N with other products.

Application

PROTECT TURBO N is added to water in concentrations of at least 25 percent by volume (drinking water quality with max. 100 mg/kg chloride, or demineralized. Water) is added. If more than 60 % by volume of PROTECT TURBO N is added, the frost protection is reduced. For reasons of corrosion safety, the application concentration should not fall below 25 % by volume. At lower concentrations, there is a risk of corrosion for the system due to underinhibition.

Technical data

		Value
Color		Yellowish
Specific gravity at 20°C	g/cm ³	1.114
Refractive index at 20°C	-	1.4290 - 1.4305
Flash point	°C	>105
pH value concentrate	-	8.7
pH 30% in water	-	8.6
Reserve Alkalinity (ASTM D 1121)	ml 0.1 M HCl	min. 4
Specific heat at 20°C	kJ / (kg- K)	2.3
Thermal conductivity at 20°C	W / (m-K)	0.29

The information in this technical data sheet is based on general knowledge and possible applications. Strub + Co. AG is not liable for damage resulting from improper use of the products. The measurement and production tolerances customary in the industry apply to the characteristic data given. In general, no legal binding force can be derived from these data. Our products are subject to continuous further development. Therefore, Strub + Co. AG reserves the right to change all technical data in this data sheet at any time and without prior notice.

Guide values Dilution: PROTECT TURBO N

Vol. %	25	30	35	40	50
Item no.	32165	32293		32426	
Freeze protection °C Ice crystals *	- 13	- 16.5	- 21	- 25	- 37
Antifreeze °C Crystal mush	- 14.5	- 18	- 24	- 28	- 41
pour point °C	- 17	- 21	- 26	- 32	- 48

* Reading refractometer antifreeze

Note

For optimum performance and controlled quality, we recommend the use of deionized, distilled or tap water not exceeding the following limits for the preparation of ready-to-use dilutions:

- Hardness of max. 3.6 mmol/l
- Chlorides max. 500 ppm
- Sulfates max. 500 ppm

Transportation

ADR/SDR No dangerous goods

Disposal

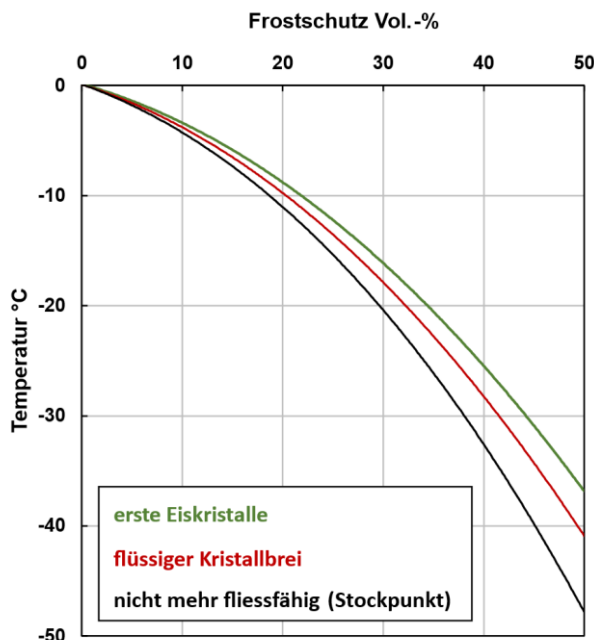
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General information on the antifreeze effect

The antifreeze / frost protection (crystal slurry) is the mean value of the temperatures of ice flake formation and the pour point (solidification temperature) of the liquid. The mixture is still liquid and free-flowing.

Refractometers are available from STRUB for determining frost resistance.

Freezing behavior of STRUB GEO-OAT N water mixtures:



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