



Glysofor

Glysofor Solar HT – Specification

Product features

Glysofor Solar HT is an environmentally friendly solar fluid for systems which could be subjected to high thermal loads.

In special longterm/high-temperature tests, Glysofor Solar HT has shown itself to have comparable resistance to the consequences of overheating (up to 230 °C for short periods).

Despite the glycol that it contains being susceptible to decomposition by heating (which cannot generally be prevented), the corrosion inhibitors have demonstrated very good performance. This considerably reduces the risk of the system being damaged by corrosion caused by overheating.

Glysofor Solar HT is based on propylene glycol, corrosion inhibitors (OAT), and stabilisers, is formulated as a ready-to-use product. It is used both in vacuum tube and flat plate collector solar systems.

It meets the requirements of DIN 4757 Part 3 and DIN EN 12975 for solar thermal systems based on its physiological and environmental safety.

Glysofor Solar HT is used as an antifreeze, corrosion protection agent as well as the heat transfer medium. Glysofor Solar HT optimally prevents frost damage, corrosion, deposits, sludge accumulation, and biofilms.

Environmentally friendly heat carrier medium, frost protection and anticorrosive agent in solar plants with high thermal loads

Basis: 1.2 Propylene glycol and higher glycols

Optimized corrosion protection for the high temperature range

Ready-to-use

Operating temperature: -28 to +180 °C (short-term to 230 °C)

Complies with DIN 4757 Part 3 and DIN EN 12975 for solar thermal systems

Free of nitrites, phosphates, amines, borates and silicates

Universally useable for Solar plants / Vacuum tubes

Installations made of copper, brass, solder, grey cast iron, aluminium, steel, and iron are provided with corrosion protection, even if they are implemented as multi-metal installations.

Glysofor Solar HT is completely free of nitrite, amine, phosphate, silicate, and borate. It is biodegradable and environmentally friendly. Glysofor Solar HT exhibits longterm resistance to

The freezing point of Glysofor Solar HT is significantly lower than water, allowing solar systems to be safely operated even in sub-zero temperatures. Glysofor Solar HT avoids bursts caused by frost, which also result in damage to the system.

A complex combination of corrosion protection additives optimally protects metals from corrosive attack. This corrosion protection is effective on all important metals that are generally used in solar installations.

the formation of biofilms, rot, and microbiological decomposition, which avoids deposition and sludge accumulation.

Glysofor Solar HT does not separate during extended system downtimes. This guarantees year-round, longterm, and low-maintenance operation of the system.

In its delivered state, Glysofor Solar HT is frost resistant to -28 °C.

Product data

Chemical name	1.2 propylene glycol and higher glycols, anticorrosion additives
Appearance	Colorless liquid
Packaging	Canisters / barrels / IBCs / tank vehicles
ADR	KI 0 number
WHC	1
Labelling	-
Applied concentration:	Undiluted (Frost protection up to approx. -28 °C)
Operating temperature range:	-28 to +180 °C – short-term higher
Areas of application:	Solar plants / Vacuum tubes and plate collector
Density (20 °C)	1,01 - 1,02 g/cm ³
pH-value	7,5 – 8,5
Boiling point (1013 mbar)	approx. 105 °C
Specific heat (20 °C)	approx. 3,55 kJ/kg K
Thermal conductivity (20 °C)	0,37 W/m K
Solidification point	-28 °C

Application

Glysofor Solar HT is delivered ready to be filled in, with a frost protection value of -28 degrees Celsius. The product can, thanks to its special formulation, not be mixed with other antifreeze or diluted with water.

Preparation: Before the plant is filled for the first time, it should be tested for leaks. For this purpose, the plant should initially be filled with chloride-free water in the amount specified by the plant manufacturer, so that if any leakage occurs, no frost protection agent will be released accidentally. If it is not possible to test the plant using water (e.g. due to low temperatures), the plant should be observed during the filling process as much as is possible.

Filling: Glysofor Solar HT is filled directly into the plant as delivered.

Refilling: If the system needs to be refilled, only Glysofor Solar HT should be used.

Other: After filling of a system, it must be closed immediately and completely vented.

Glysofor Solar HT – active content (volume)		Frost protection up to °C
100	% - undiluted	-28

Application guidelines

Galvanised components are to be avoided, as zinc is generally volatile with glycol and products which contain glycol. Pipe connections are to be made of hard solder and chloride-containing flux materials are to be avoided or are to be removed completely by flushing after usage. Scalings on copper components, metal swarf and contaminations are to be removed completely before the plant is filled. Plants that are to be operated with Glysofor must not be in contact with any external electrical potential.

In general when developing a solar installation, temperatures over 180 °C must be prevented or kept to a minimum (especially during shutdown). The installation must generally be implemented in such a way that the collector is fully drained in stagnation mode, and the circulation is interrupted. In particular the pumping of the heat transfer medium into the collector must be interrupted. If overheating occurs, it is not generally possible to stop decomposition of the glycol. Since Glysofor Solar HT is based on propylene glycol, its maximum usage temperature in this respect is 180 °C.

When developing an installation, make sure that no interruption to circulation could be caused subsequently during operation by air pockets or deposits. Installations which use Glysofor are developed as closed systems, and must be filled and bled immediately after pressure testing. Gas and air pockets must be removed immediately. Bleeding devices must be designed to keep the system permanently free of air and oxygen, and to prevent air from being drawn in if there is a negative pressure. If an existing installation is filled with Glysofor, its corrosion state must be examined before filling. A system which already has corrosion-related damage must be fully renovated before filling.

To ensure adequate functioning and frost protection at all times, the condition of Glysofor Solar HT must be checked at least once a year. Especially for installations which could be subjected to high thermal loads, the inspection interval must be shortened and adjusted for the particular installation. An inspection of the fluid is also advisable when work has been performed on the system or before refilling with Glysofor Solar HT. Overheating must be avoided, as it can cause damage and lead to premature ageing of Glysofor Solar HT.

A sign of ageing for Glysofor Solar HT due to overheating is a darkening of the colour and the appearance of reaction products. If this occurs, Glysofor Solar HT must be replaced.

Other

Pure water/glycol mixtures have very distinctive corrosive properties. You must therefore never use pure water/glycol mixtures without inhibitor equipment. Glysofor Solar HT is delivered ready for use and offers a reliable antifreeze protection up to -28 degrees Celsius. As an alternative to a product that is pre-ready to be filled in, Glysofor Solar is also available as a concentrate. Our products Glysofor N and Glysofor L are available for other areas of application.

Packaging sizes

- 10 kg canister
- 25 kg canister
- 30 kg canister
- 220 kg barrel
- kg IBC
- 24.000 kg tank vehicle

As per the valid national and international classification guidelines, Glysofor Solar HT is not a hazardous substance. There is no toxic effect from the concentrate, nor from its dilution. The product is odourless and dermatologically safe. No irritation occurs that can lead to inflammation of the skin or mucous membrane. Glysofor Solar HT is free of nitrites, phosphates and amines. The raw materials contained in this product possess the highest possible degree of purity. Glysofor Solar HT is formulated on a 1.2 propylene glycol base, which fulfils the requirements of the DAB as well as the European Pharmacopoeia and the US Pharmacopeia. As an additive, 1.2 propylene glycol has been approved as per the Ordinance on Additives in Foodstuffs (effective 10/07/1984) as a solvent and extraction agent (BGB1.I S897, Enc. 2, List 9). In the USA, propylene glycol is categorised as a generally harmless food additive (Federal Register, Effective 01/04/1985, § 184.1666). Glysofor Solar HT, and its dilutions, are readily biodegradable. Glysofor Solar HT is classified in the lowest water pollution class WPC 1 (slightly hazardous to water). No workplace-related safety measures are necessary when handling this product. Glysofor Solar HT is non-flammable; it has not been classified in one of the hazard classes for flammable liquids. Glysofor Solar HT is not subject to labelling and not considered a hazardous substance in the national / international transport regulations. The delivery container consists of homogeneous PE and can be recycled after use. The product should be stored in a sealed state at all times. Due to the existing, extremely high level of purity, the product should not be decanted or contaminated with other substances.

This data relates to the correct and appropriate application of our products, with due consideration of the professional standards and regulations of the area of application. It is for informational purposes only and does not absolve the obligation to carry out the due materials testing upon arrival. The data is based on our current state of knowledge and is not meant to guarantee specific properties. No general or legally binding statement on certain features, in a concrete application, can be derived from the above data. It is meant to describe our products with regard to their composition and offer application advice. Any industrial property rights of third parties and the suitability for a special application purpose are to be observed and verified by the user.



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