Technical Information

SOLARCLIN®

Cleaning Fluid for Solar Thermal Systems

TYFOROP Chemie GmbH

Applications for TYFO products

Renewable energy

Thermal solar systems place high demands on the properties of heat transfer fluids. Both during cold winter nights and under the hot midday sun — you need your solar system to work reliably, year in and year out. Our products make sure your solar thermal fluid remains liquid and pumpable all the way down to –30 °C while resisting breakdown up to 200 °C. Since there is always a possibility of leakage causing contamination of the hot water supply, solar thermal fluids must not present a health risk. That's why they are formulated with non-toxic propylene glycol. Heat transfer fluids for geothermal systems have it easier in comparison. Here, the main objective is to ensure that heat is transferred from the earth to the heat pump even when temperatures are below freezing, all the while protecting the system's components against corrosion. We also provide specialized products for drinking water protection zones and other areas that fall under special regulations.

Products: TYFOCOR®, GE, L, L-eco®, LS®, G-LS, HTL, LG

HVAC

Central air-conditioning systems in large buildings provide heat in the winter and cooling in the summer. To accomplish this, the heat transfer fluid in the central air-conditioning system is either heated or cooled and then transported to the heat exchangers in the individual rooms through piping. The heat transfer fluid used has to live up to all the demands placed on it regarding heat transfer and corrosion protection over an extended period of time and under both high and low temperatures. Even in buildings at remote locations which are not heated the entire winter through, our products prevent the heating system from freezing and thus ensure a long, trouble-free service life.

Products: TYFOCOR®, GE, L, L-eco®

Refrigeration

A number of technical processes require rapidly cooling equipment or components to very low temperatures. To achieve this, products are required which not only have good thermal transfer and corrosion inhibiting properties, but which also possess very low viscosities across the entire temperature range. This is the only way to ensure sufficient flow with rapid and efficient heat transfer.

Products:
TYFOCOR®, L, L-eco® | **TYFO**XIT® 1.15–1.25, F15–50

Food & Beverage

Wherever you look — refrigerated cases in the supermarket or steps during food and beverage processing: Excess heat has to be removed quickly and products need to be kept at consistently low temperatures to maintain shelf life. For use in the food and beverage industry, our products need to possess an additional quality beyond their technical specifications: they must be absolutely non-toxic. This is an important prerequisite to ensure that spills and even small leaks cannot lead to foods being contaminated with potentially hazardous substances.

Products: TYFOCOR® L, L-eco® | **TYFO**XIT® 1.15–1.25, F15–50

Chemical description

Methyltriglycol, triethylene glycol monomethyl ether
2-(2-(2-methoxy ethoxy)ethoxy) ethanol

$$CH_3O–(CH_2–CH_2O)_3–H$$

CAS No: 112-35-6. EC No: 203-962-1

Properties

SOLARCLIN® is a neutral, light yellow, slightly hygroscopic, high-boiling and almost odourless liquid. It is miscible with water and commonly used organic solvents in all proportions. Because of it's chemical structure it is capable to dissolve degradation products which have been formed during sustained overheating of the heat transfer fluid.

Application

In order to achieve an optimal cleaning effect it is necessary to remove the overheated fluid as completely as possible from the solar thermal system. Dilution with either solar fluid or water will lower the cleaning performance of **SOLARCLIN**®. The collectors must be covered before starting the flushing process. After the filling of the system, **SOLARCLIN**® is circulated for several hours at 50 to 60 °C. Higher temperatures should be avoided with regard to the sealing materials present in the solar thermal system. The duration of the flushing process depends on the extent of the contamination. After terminating the flushing, at first the fluid must be drained as completely as possible from the system. Residual amounts of **SOLARCLIN**® that may be still present in the installation finally can be removed by rinsing with water and subsequent use of compressed air.

Advice for safe handling

Protective measures:

The usual safety and industrial hygiene measures relating to combustible liquids and chemicals must be observed in handling **SOLARCLIN**®. The information and instructions given in the Safety Data Sheet must be strictly observed.

Protection against fire and explosion:

Ensure adequate ventilation! Do not smoke! Take precautionary measures against static discharges! Keep away ignition sources! Keep fire extinguisher in place!

Storage:

Prevent entry of air/oxygen (peroxide formation). Store containers tightly shut in a cool and dry place.

Disposal:

In accordance with regulations for special waste, **SOLARCLIN**® must be taken to an authorised special waste incineration plant. Pick up spilled or accidentally released product with e.g. sand, kieselgur, acid binder, universal binder or sawdust and dispose of according to the regulations.

Safety instructions:

Wear rubber gloves and safety goggles. Avoid contact with skin and eyes.

The TYFO product range

TYFOCOR® is a long-life, corrosion-inhibiting antifreeze based on ethylene glycol for cooling and heating, air-conditioning, heat pump, and under-soil heating systems. It can be supplied as a concentrate or a pre-mixed, ready-to-use product as desired.

TYFOCOR® GE is a long-life, corrosion-inhibiting antifreeze based on ethylene glycol specially formulated for use in geothermal heat pump systems, air conditioning units, and under-soil heating. It can be supplied as desired in the form of a concentrate or a pre-mixed, ready-to-use product.

TYFOCOR® L is a long-life corrosion-inhibiting antifreeze based on propylene glycol for heating and air-conditioning, solar thermal, and heat pump systems. It is also used as a special food-grade brine by food and beverage manufacturers and is supplied both as a concentrate and a pre-mixed, ready-to-use product.

TYFOCOR® L-eco® is a long-life corrosion-inhibiting antifreeze based on propylene glycol that covers the same applications as **TYFO**COR® L. Practically all of the substances contained in the product are derived from 100% renewable resources.

TYFOCOR® LS® is a special, ready-to-use, almost completely vaporizable, propylene-glycol-based heat transfer fluid for use in solar systems that are subject to extreme thermal conditions.

TYFOCOR® G-LS is a special, ready-to-use, almost completely vaporizable, propylene-glycol-based heat transfer fluid for use in solar systems that are subject to extreme thermal conditions. It contains a glass protection additive that makes it suitable for use in all-glass solar collectors.

TYFOCOR® HTL is a special, ready-to-use heat transfer fluid based on non-toxic glycols for use in solar systems that are subject to extreme thermal conditions.

TYFO-SPEZIAL is a special, high-performance brine formulated for geothermal heat pumps located in areas subject to special government regulations. Due to its lack of glycols, it does not cause any underground biological oxygen depletion in the event of a leak.

TYFOXIT® 1.15–1.25 are non-toxic, high-performance, glycol-free secondary coolants based on potassium acetate with very low viscosities for chiller systems with secondary cooling. They are available as concentrates (**TYFO**XIT® 1.25) and ready-to-use mixtures ranging from –20 °C (**TYFO**XIT® 1.15) to –55 °C (**TYFO**XIT® 1.25).

TYFOXIT® F15–50 are non-toxic, high-performance, glycol-free, potassium-formate-based secondary coolants with very low viscosities for chiller systems with secondary cooling. They are available as ready-to-use mixtures ranging from –15 °C (**TYFO**XIT® F15) to –50 °C (**TYFO**XIT® F50).

To learn more about our products, visit **www.tyfo.de**

TYFOROP Chemie GmbH

Anton-Rée-Weg 7
20537 Hamburg, Germany

Phone: +49 (0) 40/20 94 97-0
Fax: +49 (0) 40/20 94 97-20

info@tyfo.de
www.tyfo.de

TYFOROP Chemie GmbH