

PRODUCT DATA SHEET

Version 26.01



A HIGH PERFORMANCE HEAT TRANSFER FLUID

The secret behind CRANE Temper's excellent fluid and environmental properties lies in the optimal mix of organic salts giving it its very low viscosity. This in turn reduces the overall energy consumption and makes it ideal for a wide range of industrial refrigeration applications. The fluid contains an advanced organic adsorption inhibitor package to ensure an optimal corrosion protection. Key properties and benefits include:

- Low viscosity
- High thermal conductivity
- Designed to minimize energy cost
- Readily biodegradable
- Non-toxic, NSF certified
- Adaptive protection technology
- Personalized technical support

AREAS OF USE

CRANE Temper can be used wherever a liquid heat transfer fluid is required in indirect cooling, stationary or mobile installations. CRANE Temper offers significant advantages compared with glycol mixtures across a wide range of industries and applications, including:

- Food industry
- Logistic centers
- Defrosting of CO₂ aircoolers
- Pharmaceutical industry
- Climate test centers
- Fuel cell/hydrogen filling stations
- Ground freezing

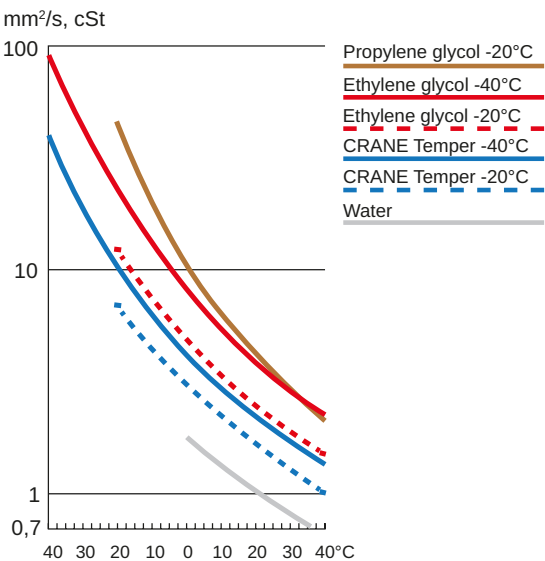
GENERAL PROPERTIES

Appearance	Colourless to pale yellowish
Boiling point	Approx. 109°C
Density	1086-1260kg/m ³
Freezing point	-10°C to -60°C

PERFORMANCE

CRANE Temper's excellent fluid properties in terms of viscosity, specific heat and thermal conductivity make it the ideal choice of heat transfer fluid at very low temperatures. The great fluid properties not only enable you to use smaller pumps and heat exchangers but also significantly reduce the total energy consumption. This applies especially at very low temperatures.

KINEMATIC VISCOSITY OF CRANE TEMPER AND GLYCOL



ENVIRONMENTAL & HEALTH INFORMATION

Non-toxic for mammals – LD50 oral, rat > 5,000 mg/kg calculated from literature data

Non-toxic for aquatic life – OECD TG 203: LC50/96 = 13,900mg/l

Microtox – Not acute toxic

Readily biodegradable – OECD 301A: 99 % after 28 days

Bioaccumulation – Does not bioaccumulate

The freezing point depression substances in CRANE Temper consists mainly of potassium acetate which is used as food preservative.

CRANE Temper[®]

THE ENERGY-EFFICIENT HEAT TRANSFER FLUID - DESIGNED TO LAST

ADAPTIVE PROTECTION TECHNOLOGY

CRANE Temper consists of a smart adaptive protection technology which allows temporary, local mono-molecular protection of metal surfaces only when needed. This allows maximized heat transfer through the lifetime of the refrigeration system. The creation of local protection is reversible, and the corrosion inhibitor returns to the fluid without being consumed when electrical diversion is reduced. The CRANE Temper adaptive protection technology is chemically selective to construction metals and do not interfere with other ions or non-construction metals.

CRANE Temper has passed the ASTM D1384 test, which involves immersion of metal specimens in the fluids under elevated temperature to accelerate the potential corrosion process. Please see CRANE Temper Technical Data Sheet for more information.

	CRANE Temper adaptive technology	Film forming corrosion inhibitors
Trigger mechanism	Electrical potential	Always present
Local	Yes	No
Reversible	Yes	No
Possible to measure	Yes	No
Impact on heat transfer	Minimal	High

MATERIAL COMPATIBILITY

Most of the common materials can be used such as copper, bronze, brass (dezincification resistant), steel, stainless steel, cast iron, as well as plastic pipes (ABS, PE). Plastic materials must be suitable for the system's minimum and maximum temperatures. High temperatures involve an increased risk of corrosion. Selection of materials must therefore take into account the operational temperature within the system. The higher the temperature, the better the quality of the materials is recommended. Galvanized steel is not recommended to be used together with CRANE Temper.

ANALYSIS & TECHNICAL SUPPORT

It is recommended to regularly check the fluid in respect of parameters such as pH, freezing point (density), metal ions and corrosion inhibitor level. With a test kit you may easily check freezing point (density) and pH value. KRAHN Specialty Fluids can assist you with more advanced analysis, such as metal ion concentration and corrosion inhibitor level to secure the well-functioning of the system. Along with the test result, a complete report with conclusion and recommended actions is always provided.

PACKAGING

CRANE Temper is supplied in the following packaging, as well as bulk deliveries:



25 L blue canister made of PE with sealed cap. The canister's weight is 1.2 kg.



208 L blue barrel made of PE, with a sealed cap. The barrel's weight is 9.0 kg.



1000L black IBC, the IBC weight is 70.0 kg. Outlet valve NW 50



Bulk deliveries for larger volumes

STORING, HANDLING & TRANSPORT

Store in unopened original containers not below its freezing point. Shelf life is at least two years from production date when stored as recommended. Avoid contact with eyes and skin. When transporting CRANE Temper, there is no restriction since the product is not classified. Further information can be found in the safety data sheet.