

# FRAGOLTHERM® X-40

## Heat Transfer Fluid

**-60 °C to 120 °C (200 °C / 200 °C)**

### Application

FRAGOLTHERM® X-40 is suitable for use in baths (with or without covers) from -60 °C to 120 °C. In other open systems with atmospheric contact and in closed systems under the exclusion of oxygen (e.g. inertisation with nitrogen), use up to 200 °C is possible. In summary, this means:

- 60 °C to 120 °C: Baths (with or without covers)**
- 60 °C to 200 °C: Other open systems with atmospheric contact and closed systems without exposure to oxygen**

Due to the low pourpoint, application temperatures below -60 °C are also possible with an appropriate system design.

The suitability of FRAGOLTHERM® X-40 for the low temperature range reduces with an increasing water content, because the water released can separate at temperatures of <0 °C and the formation of ice is then possible. This can lead to a deterioration of the thermal transfer and to a blocking of the system.

In order to avoid moisture entering the heat transfer system, it is recommended that inertisation with nitrogen takes place, or a molecular sieve be installed in a bypass. Alternatively, moisture can be driven out by "stripping" with nitrogen in the expansion tank at approx. 120 °C.

FRAGOLTHERM® X-40 is the ideal heat transfer medium for temperature control systems and applications, e.g. in laboratories, in which freezing and heating processes are combined.

### Quality

FRAGOLTHERM® X-40 is a synthetic heat transfer fluid based on polydimethylsiloxane.

FRAGOLTHERM® X-40 is compatible with the standard materials used in heat transfer technology. Not suitable are silicone elastomers.

FRAGOLTHERM® X-40 is a crystal-clear, odourless and inert fluid that is characterised by low toxicity.

### Packaging

FRAGOLTHERM® X-40 is available in steel drums and pails.

### Note

Please expressly note that it is possible in general terms, when using heat transfer fluids (also below the maximum specified bulk temperature), that low and high-boiling substances may arise due to thermal or oxidative decomposition.

When handling the product it is essential to observe the safety data sheet.

Please get in touch with us if you require further information or general technical advice.

### Properties

FRAGOLTHERM® X-40		Method
Density @ 25 °C	[kg/m³]	924
Viscosity @ 40 °C	[mm²/s]	4.00
Thermal capacity @ 25 °C	[kJ/kgK]	1.63
Thermal conductivity @ 25 °C	[W/mK]	0.13
Pourpoint	[°C]	<-100
Flashpoint	[°C]	>120
Boiling point @ 1013 mbar	[°C]	>200
Film temperature max.	[°C]	220
Bulk temperature max.	[°C]	200
Hazardous substance according to IATA/IMDG/ADR	[-]	no

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**FRAGOL THERM<sup>®</sup> X-40**

Temp. °C	Vapor Press. kPa (abs)	Density kg/m <sup>3</sup>	Heat Capacity kJ/kgK	Thermal Cond. W/mK	Visc. (kin) mm <sup>2</sup> /s	Visc. (dyn) mPas	Prandtl- Number
-60		1000	1.50	0.156	50.0	50.0	481
-40		982	1.53	0.150	24.0	23.6	240
-20		963	1.56	0.145	12.5	12.0	130
0		946	1.59	0.139	8.00	7.57	86.6
20		928	1.62	0.134	5.40	5.01	60.6
25		924	1.63	0.133	5.00	4.62	56.6
40		910	1.65	0.128	4.00	3.64	46.9
80		874	1.71	0.116	2.40	2.10	30.9
100		856	1.74	0.111	1.95	1.67	26.2
120	1	838	1.77	0.105	1.60	1.34	22.6
140	1	820	1.80	0.099	1.38	1.13	20.6
160	1	802	1.83	0.093	1.20	0.96	18.9
180	3	784	1.86	0.088	1.03	0.81	17.1
200	4	766	1.89	0.082	0.91	0.70	16.1
220	7	748	1.92	0.076	0.85	0.64	16.1
240	11	730	1.95	0.071	0.80	0.58	16.0

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All the above information is provided to the best of our knowledge. Any legal liability for the content of this information and the suitability of the product for certain applications is rejected. Technical data are approximate values and are subject to the usual production fluctuations.