



RODUTHERM R12

(-85°C to 230°C)

Synthetic Heat Transfer Fluid | Technical Data Sheet

Introduction

Rodutherm R12 is a specially developed low-viscosity coolant designed for closed liquid phase systems operating at extremely low temperatures. Engineered for applications where reliable heat transfer performance at very low temperatures is critical, it delivers excellent cooling efficiency down to -70°C while maintaining outstanding pumpability even under the most demanding cold-temperature conditions.

Its advanced formulation ensures exceptionally low viscosity at operating temperature, enabling efficient fluid circulation with minimal pump energy consumption — even at -70°C. This results in superior heat transfer performance, reduced energy costs and reliable system operation in extreme cold environments.

Rodutherm R12 is the coolant of choice for industries such as chemical processing, pharmaceuticals, food and beverage, and industrial refrigeration, where precise and stable low-temperature cooling is essential for process integrity and product quality. Its non-corrosive properties protect piping, heat exchangers and system components, ensuring long-term system reliability and reduced maintenance costs.

Benefits

- Can be used efficiently in operating systems ranging from -85°C to 230°C. It specializes in dealing with a variety of stringent temperature requirements.
- Has a tipping point of -100°C and excellent low-temperature fluidity. It can be used as an energy-saving low-temperature cooling and heat conduction oil in a wide range of temperatures.
- Particularly suitable for applications that require low toxicity and low odor.

Typical Properties

Property		Typical Value
Appearance		Transparent
Density @15°C		0.766 kg/m ³
Pour point		< -100°C
Kinematic Viscosity	@ 40°C	1.23 cSt
	@ 100°C	0.56 cSt
Flash point (closed)		62°C
Auto-ignition Temperature		247°C
Moisture Content		< 100 ppm
Distillation	10%	190°C
	90%	204°C

Liquid Properties

Temp. (°F)	Temp. (°C)	Vapor Press. (kPa)	Heat Cap. kJ/(kg·K)	Therm. Cond. W/m·K	Viscosity cSt	Therm. Enthalpy kJ/kg	Density kg/m³
-120	-84		1.70	0.1243	330	-121.4	835
-100	-73		1.74	0.1230	79.7	-102.3	827
-80	-62		1.78	0.1216	28.1	-82.8	820
-60	-51		1.82	0.1201	15.1	-62.8	812
-40	-40		1.86	0.1186	7.06	-42.3	805
-20	-29		1.90	0.1171	4.41	-21.4	797
0	-18	0.002	1.95	0.1156	3.02	0	789
40	4	0.017	2.03	0.1123	1.71	44.2	774
80	27	0.103	2.12	0.1089	1.13	90.3	758
120	49	0.452	2.21	0.1054	0.812	138.4	741
160	71	1.55	2.30	0.1017	0.618	188.4	725
200	93	4.26	2.39	0.0978	0.488	240.4	708
240	116	10.6	2.48	0.0938	0.393	294.5	690
280	138	22.7	2.57	0.0896	0.322	350.6	672
320	160	44.3	2.67	0.0852	0.267	408.7	653
360	182	79.8	2.79	0.0807	0.224	469.0	633
400	204	135	2.91	0.0760	0.188	531.5	611
440	227	215	2.99	0.0712	0.159	596.3	588
480	249	327	3.08	0.0662	0.136	663.4	563

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The data presented is typical and subject to normal manufacturing variation. For product safety information, please refer to the Safety Data Sheet.