

## Thermal EG Product Notice

Thermal EG is a concentrated ethylene glycol product. For proper operation in Julabo circulators Thermal EG should be diluted to a 50% (v/v) solution with water. Doing so will provide a working range of -37 to +80 °C in open bath applications.

Please refer to the MSDS for Thermal EG prior to handling, using or disposing of Thermal EG.

### Dilution Instructions:

Thermal EG/water mixtures can be prepared prior to filling a Julabo circulator. Alternatively Thermal EG and water may be added directly to systems with a circulating pump and mixed *in situ*. To do so, add two thirds of the recommended required amount of water followed by the entire Thermal EG amount and then the remaining water.

Concentration % (v/v)	Freeze point (°C)	Boiling Point (°C)
0	0	100
5	-2	100
10	-5	101
15	8	102
20	-11	103
25	-14	104
30	-17	105
35	-21	106
40	-25	107
45	-31	108
<b>50</b>	<b>-37</b>	<b>109</b>
55	-44	110
60 <sup>b</sup>	-53	112
70		117
80		126
90		142

<sup>b</sup> Max. use concentration

### Properties of Thermal EG at 30% (v/v)

T (°C)	-10	0	20	40	80	120
Viscosity (cps)	7.27	4.72	2.38	1.41	0.69	0.47
Density (g/mL)	1.058	1.056	1.049	1.041	1.018	0.990

### Properties of Thermal EG at 40% (v/v)

T (°C)	-20	-10	20	40	80	120
Viscosity (cps)	18.6	10.4	3.16	1.82	0.86	0.57
Density (g/mL)	1.079	1.077	1.066	1.057	1.032	1.004

### Properties of Thermal EG at 50% (v/v)

T (°C)	-30	-10	20	40	80	120
Viscosity (cps)	71.5	15.3	4.25	2.38	1.08	0.69
Density (g/mL)	1.101	1.095	1.082	1.071	1.046	1.017

**Water Quality:** Water used to dilute Thermal EG should contain <100 ppm chloride. To prevent scale formation, ensure that the water hardness does not exceed 450 ppm. Deionized water is recommended.

**Length of use:** Thermal EG can be used in systems for long time periods provided the solution is prepared properly, the bath unit kept closed and in good working condition. Concentration levels should be monitored annually at a minimum.