



## Heat Transfer Fluids Kilfrost ALV Data Sheet

The advanced low viscosity non-toxic heat transfer fluid, engineered for higher efficiency and safer cooling.

This document lists all the physical data that is important for the application of Kilfrost ALV in closed loop cooling systems.



### Volume ratio, freezing point and refractive index

Kilfrost ALV %v/v	Freezing Point (°C)	Refractive Index
25	-10	1.3632
30	-15	1.3679
35	-17	1.3731
40	-20	1.3794
50	-30	1.3905
60	-40	1.4031

### Density (g/cm<sup>3</sup>) of dilutions with temperature

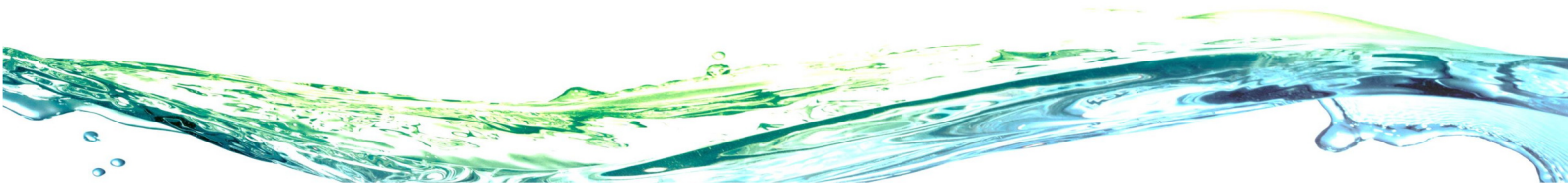
T (°C)	Dilution %v/v				
	25%	30%	35%	40%	50%
20	1.101	1.115	1.133	1.151	1.193
15	1.102	1.117	1.136	1.153	1.195
10	1.104	1.118	1.137	1.155	1.197
5	1.106	1.121	1.140	1.157	1.200
0	1.107	1.122	1.142	1.159	1.201
-5	1.109	1.124	1.144	1.161	1.205
-10		1.129	1.146	1.164	1.207
-15		1.129	1.148	1.166	1.209
-20					1.212
-25					1.215
-30					1.218

### Kinematic viscosity (mm<sup>2</sup>/s) of dilutions with temperature

T (°C)	Dilution %v/v				
	25%	30%	35%	40%	50%
20	1.71	1.94	2.19	2.49	3.31
15	1.95	2.20	2.51	2.86	3.88
10	2.23	2.68	2.91	3.33	4.55
5	2.60	2.99	3.43	3.94	5.42
0	3.04	3.56	4.10	4.73	6.67
-5	3.67	4.42	5.00	5.80	8.15
-10		4.76	6.29	7.32	10.41
-15			7.95	9.40	12.01
-20					14.47
-25					17.02
-30					19.80

### Dynamic viscosity (mPa.s) of dilutions with temperature

T (°C)	Dilution %v/v				
	25%	30%	35%	40%	50%
20	1.88	2.16	2.48	2.86	3.94
15	2.15	2.45	2.85	3.29	4.63
10	2.46	2.99	3.30	3.84	5.44
5	2.87	3.35	3.91	4.55	6.50
0	3.36	3.99	4.68	5.48	8.01
-5	4.07	4.96	5.72	6.73	9.82
-10		5.37	7.20	8.52	12.56
-15			9.12	10.96	14.52
-20					17.53
-25					20.67
-30					24.11



### Specific heat (kJ/kg.°K) of dilutions with temperature

T (°C)	Dilution %v/v				
	25%	30%	35%	40%	50%
20	3.83	3.80	3.64	3.57	3.37
15	3.83	3.79	3.63	3.56	3.36
10	3.82	3.74	3.62	3.55	3.35
5	3.81	3.70	3.61	3.55	3.35
0	3.80	3.67	3.61	3.54	3.34
-5	3.78	3.65	3.60	3.53	3.33
-10	3.77	3.58	3.59	3.52	3.33
-15	3.76	3.54	3.58	3.51	3.32
-20					3.31
-25					3.31
-30					3.30

### Thermal conductivity (W/m.°K) of dilutions with temperature

T (°C)	Dilution %v/v				
	25%	30%	35%	40%	50%
20	0.510	0.492	0.481	0.457	0.412
15	0.507	0.489	0.480	0.456	0.413
10	0.503	0.486	0.478	0.455	0.413
5	0.499	0.483	0.486	0.454	0.414
0	0.495	0.480	0.473	0.452	0.414
-5	0.491	0.477	0.471	0.451	0.414
-10	0.486	0.473	0.468	0.449	0.415
-15	0.481	0.469	0.465	0.447	0.415
-20					0.412
-25					0.411
-30					0.410

### Materials compatibility

Kilfrost ALV is shown to be compatible with the following elastomers under the standard operating temperatures of a thermal fluid in a closed loop cooling systems;

Butyl Rubber	(IIR)
Ethylene	(EPDM)
Epoxy Resins	(EP)
Fluorocarbon Elastomers	(FPM)
Nitrile Rubber	(NBR)
Polyamides	(PA)
Polyethylene	(L/HDPE)
Polypropylene	(PP)
Polytetrafluoroethylene	(PTFE)
Polyvinyl Chloride	(PVC)
Styrene Butadiene	(SBR)

Please note, aside from coolant composition, the quality and grade of elastomeric seals will also have an impact on compatibility. In particular, the quantity and type of filling agents and the processing techniques used in the production of the elastomeric components will affect the resulting compatibility with any coolant. Please contact Kilfrost for information on compatibility with any elastomer not listed in this guide.

Further information available from:  
[Kilfrost.com](http://Kilfrost.com)