GLYCOL SALES AUSTRALIA

TECHNICAL DATA SHEET

Product Name: GLY-PRO™ FG HTF

PRODUCT: Professional food grade inhibited propylene glycol-based heat transfer fluid

APPLICATION: Secondary heating and cooling
Freeze and burst protection of pipes
Various deicing, defrosting, and dehumidifying

RECOMMENDED USE TEMPERATURE RANGE: - 45°C to +120°C

DESCRIPTION: GLY-PRO™ FG HTF is industrially inhibited, low oral toxicity propylene glycol based heat transfer fluid. Carefully selected food safe inhibitor ingredients and the use of USP grade glycol make this an ideal fluid where incidental contact with food or beverage may occur.

Its high thermal stability and low viscosity also ensure efficient heat transfer and reduced energy consumption. GLY-PRO™ FG HTF is suitable for use in HVAC, geothermal, solar and other applications where reliable, long life, low oral toxicity heat transfer fluid is required.

Table 1. Typical product properties1 of GLY-PRO™ FG Heat Transfer Fluid

Typical Properties Concentrate		Typical Properties 30%	
Colour	Clear to Yellow	Colour	Clear to Yellow
pH	10	pH	9
RA (mL)	19.1	RA (mL)	5.8
Density (g/ml)	1.047	Density (g/ml)	1.026

1 General properties, not definitive specifications

Table 2. Freeze and Burst Protection

°C	Volume % Freeze Protection	Volume % Burst Protection
-5	15.6	10.8
-10	25.8	17.3
-15	34.0	22.6
-20	40.5	26.9
-25	45.6	30.2
-30	49.7	32.7
-35	53.1	34.5
-40	56.2	35.7
-45	59.2	36.3
-50	62.5	36.6

Table 3. Electrical Conductivity

Weight %	Temp °C	Electrical Conductivity (µS/cm)
0	25	1.2
30	25	2890
40	25	2340
50	25	1991
60	25	1428
100	25	198

Table 4. Typical Freezing Point and Boiling Points

Typical Freezing Point and Boiling Points					
Freezing Point °C	wt %	Vol %	Boiling Point °C @ 0.96 Barr	Degree Brix	Refractive Index 22°C
0	0	0	100	0	1.3328
-1.6	5	4.8	100	4.8	1.3383
-3.3	10	9.6	100	8.4	1.3438
-5.1	15	14.5	100	12.9	1.3495
-7.1	20	19.4	101	15.4	1.3555
-7.6	21	20.4	101	16	1.3567
-8	22	21.4	101	16.7	1.3579
-8.6	23	22.4	101	17.4	1.3591
-9.1	24	23.4	101	18.4	1.3603
-9.6	25	24.4	101	19	1.3615
-10.2	26	25.3	101	19.6	1.3627
-10.8	27	26.4	101	20.2	1.3639
-11.4	28	27.4	102	20.8	1.3651
-12	29	28.4	102	21.4	1.3663
-12.7	30	29.4	102	22	1.3675
-13.4	31	30.4	102	22.7	1.3687
-14.1	32	31.4	102	23.6	1.3698
-14.8	33	32.4	102	24.4	1.3710
-15.6	34	33.5	102	25.3	1.3621
-16.4	35	34.4	103	26.1	1.3733
-17.3	36	35.5	103	26.9	1.3744

Typical Freezing Point and Boiling Points					
Freezing Point °C	wt %	Vol %	Boiling Point °C @ 0.96 Barr	Degree Brix	Refractive Index 22°C
-18.2	37	36.5	103	27.5	1.3756
-19.1	38	37.5	103	28	1.3767
-20.1	39	38.5	103	28.5	1.3779
-21.1	40	39.6	104	29.1	1.3790
-22.1	41	40.6	104	29.6	1.3802
-23.2	42	41.6	104	30.2	1.3813
-24.3	43	42.6	104	30.7	1.3825
-25.5	44	43.7	104	31.3	1.3836
-26.7	45	44.7	104	31.8	1.3847
-27.9	46	45.7	104	32.4	1.3858
-29.3	47	46.8	104	33	1.3870
-30.6	48	47.8	105	33.5	1.3881
-32.1	49	48.9	105	34.1	1.3892
-33.5	50	49.9	106	34.7	1.3903
-35	51	50.9	106	35.5	1.3914
-36.6	52	51.9	106	35.9	1.3924
-38.2	53	53	106	36.6	1.3935
-39.8	54	54	106	37.2	1.3945
-41.6	55	55	106	38	1.3956
-43.3	56	56	106	38.5	1.3966
-45.2	57	57	107	39	1.3977
-47.1	58	58	107	39.6	1.3987
-49	59	59	107	40.1	1.3998
-51.1	60	60	107	40.6	1.4008
-	65	65	108	42.1	1.4058
-	70	70	110	44.1	1.4104
-	75	75	114	46.1	1.4150
-	80	80	118	48	1.4193
-	85	85	125	50	1.4235
-	90	90	132	51.4	1.4275
-	95	95	154	52.8	1.4315

Table 5. Density (kg/m3)

°C	30%	40%	50%	60%
-45				
-40				
-35				1074.2
-30			1064.9	1072.6
-25			1063.4	1070.9
-20		1053.2	1061.8	1069.0
-15		1051.7	1060.0	1067.0
-10	1040.7	1050.1	1058.1	1064.9
-5	1039.2	1048.3	1056.1	1062.7
0	1037.5	1046.4	1054.0	1060.3
5	1035.7	1044.4	1051.7	1057.8
10	1033.8	1042.2	1049.3	1055.2
15	1031.8	1039.9	1046.8	1052.4
20	1029.6	1037.5	1044.1	1049.5
25	1027.3	1035.0	1041.4	1046.5
30	1024.9	1032.3	1038.4	1043.4
35	1022.3	1029.5	1035.4	1040.1
40	1019.7	1026.5	1032.2	1036.7
45	1016.9	1023.5	1028.9	1033.2
50	1013.9	1020.3	1025.5	1029.6
55	1010.9	1017.0	1022.0	1025.8
60	1007.7	1013.5	1018.3	1021.9
65	1004.4	1010.0	1014.5	1017.9
70	1000.9	1006.3	1010.5	1013.7
75	997.3	1002.4	1006.5	1009.4
80	993.6	998.5	1002.3	1005.0
85	989.8	994.4	997.9	1000.5
90	985.9	990.2	993.5	995.8
95	981.8	985.8	988.9	991.1
100	977.6	981.3	984.2	986.1
105	973.2	976.7	979.4	981.1
110	968.7	972.0	974.4	975.9
115	964.2	967.1	969.3	970.6
120	959.4	962.1	964.1	965.2

Table 6. Specific Heat (kJ/kg)

°C	30%	40%	50%	60%
-45				
-40				
-35				3.184
-30			3.391	3.206
-25			3.410	3.228
-20		3.622	3.430	3.251
-15	3.803	3.638	3.449	3.273
-10	3.817	3.655	3.468	3.295
-5	3.831	3.671	3.488	3.317
0	3.845	3.688	3.507	3.340
5	3.859	3.705	3.526	3.362
10	3.872	3.721	3.546	3.384
15	3.886	3.738	3.565	3.407
20	3.900	3.754	3.584	3.429
25	3.914	3.771	3.604	3.451
30	3.928	3.787	3.623	3.473
35	3.942	3.804	3.642	3.496
40	3.955	3.820	3.662	3.518
45	3.969	3.837	3.681	3.540
50	3.983	3.853	3.700	3.563
55	3.997	3.870	3.720	3.585
60	4.011	3.886	3.739	3.607
65	4.024	3.903	3.758	3.629
70	4.038	3.919	3.778	3.652
75	4.052	3.936	3.797	3.674
80	4.066	3.953	3.816	3.696
85	4.080	3.969	3.836	3.718
90	4.094	3.986	3.855	3.741
95	4.107	4.002	3.874	3.763
100	4.121	4.019	3.894	3.785
105	4.135	4.035	3.913	3.808
110	4.149	4.052	3.932	3.830
115	4.163	4.068	3.952	3.852
120	4.177	4.085	3.971	3.874

Table 7. Thermal conductivity (W/mK)

°C	30%	40%	50%	60%
-45				
-40				
-35				0.299
-30			0.332	0.302
-25			0.336	0.305
-20		0.376	0.341	0.308
-15		0.381	0.345	0.312
-10	0.427	0.386	0.349	0.315
-5	0.433	0.391	0.353	0.318
0	0.439	0.396	0.357	0.321
5	0.445	0.401	0.361	0.324
10	0.451	0.406	0.364	0.327
15	0.456	0.410	0.368	0.329
20	0.461	0.414	0.371	0.332
25	0.466	0.418	0.374	0.334
30	0.471	0.422	0.377	0.337
35	0.475	0.426	0.380	0.339
40	0.480	0.429	0.383	0.341
45	0.483	0.432	0.385	0.343
50	0.487	0.435	0.388	0.344
55	0.490	0.438	0.390	0.346
60	0.493	0.440	0.392	0.347
65	0.496	0.443	0.393	0.349
70	0.499	0.445	0.395	0.350
75	0.501	0.446	0.396	0.351
80	0.503	0.448	0.397	0.351
85	0.504	0.449	0.398	0.352
90	0.506	0.450	0.399	0.353
95	0.507	0.451	0.400	0.353
100	0.508	0.452	0.400	0.353
105	0.509	0.453	0.401	0.353
110	0.510	0.453	0.401	0.353
115	0.510	0.453	0.401	0.353
120	0.510	0.453	0.401	0.353

Table 8. Viscosity (mPa sec)

°C	30%	40%	50%	60%
-45				
-40				
-35				524.09
-30			171.62	330.47
-25			109.77	211.51
-20		48.98	72.50	138.04
-15		33.15	49.37	92.08
-10	11.92	23.19	34.59	62.86
-5	9.15	16.71	24.89	43.92
0	7.15	12.38	18.36	31.40
5	5.69	9.40	13.85	22.95
10	4.60	7.29	10.67	17.13
15	3.77	5.78	8.38	13.04
20	3.14	4.67	6.70	10.12
25	2.65	3.83	5.44	7.99
30	2.27	3.20	4.49	6.42
35	1.96	2.70	3.76	5.23
40	1.71	2.32	3.18	4.33
45	1.51	2.01	2.73	3.63
50	1.34	1.76	2.36	3.08
55	1.21	1.56	2.07	2.65
60	1.09	1.39	1.83	2.30
65	1.00	1.26	1.63	2.01
70	0.91	1.14	1.46	1.78
75	0.84	1.04	1.32	1.59
80	0.78	0.96	1.20	1.43
85	0.73	0.89	1.10	1.30
90	0.68	0.83	1.01	1.18
95	0.64	0.77	0.94	1.09
100	0.61	0.73	0.87	1.00
105	0.58	0.68	0.82	0.93
110	0.55	0.65	0.77	0.87
115	0.53	0.62	0.72	0.82
120	0.50	0.59	0.68	0.77

Table 9. Vapour pressure (kPa)

°C	30%	40%	50%	60%
50	11.7	11.3	10.8	9.9
55	14.9	14.3	13.7	12.6
60	18.8	18.0	17.3	15.9
65	23.5	22.6	21.7	19.9
70	29.3	28.0	27.0	24.8
75	36.1	34.6	33.4	30.6
80	44.2	42.4	40.9	37.5
85	53.8	51.6	49.9	45.7
90	65.1	62.4	60.4	55.4
95	78.4	75.1	72.7	66.7
100	93.7	89.9	87.1	80
105	111.6	107.0	103.8	95.3
110	132.1	126.7	123.0	112.9
115	155.7	149.3	145.0	133.2
120	182.6	175.1	170.2	156.4
125	213.3	204.5	198.9	182.9
130	248.0	237.8	231.4	212.8
135	287.2	275.4	268.1	246.7
140	331.3	317.7	309.4	284.8
145	380.7	365.2	355.8	327.6
150	435.9	418.2	407.6	375.5
155	497.4	477.2	465.3	428.8
160	565.7	542.7	529.4	488

Chart 1 - Density (kg/m3) at 30%, 40% and 50%

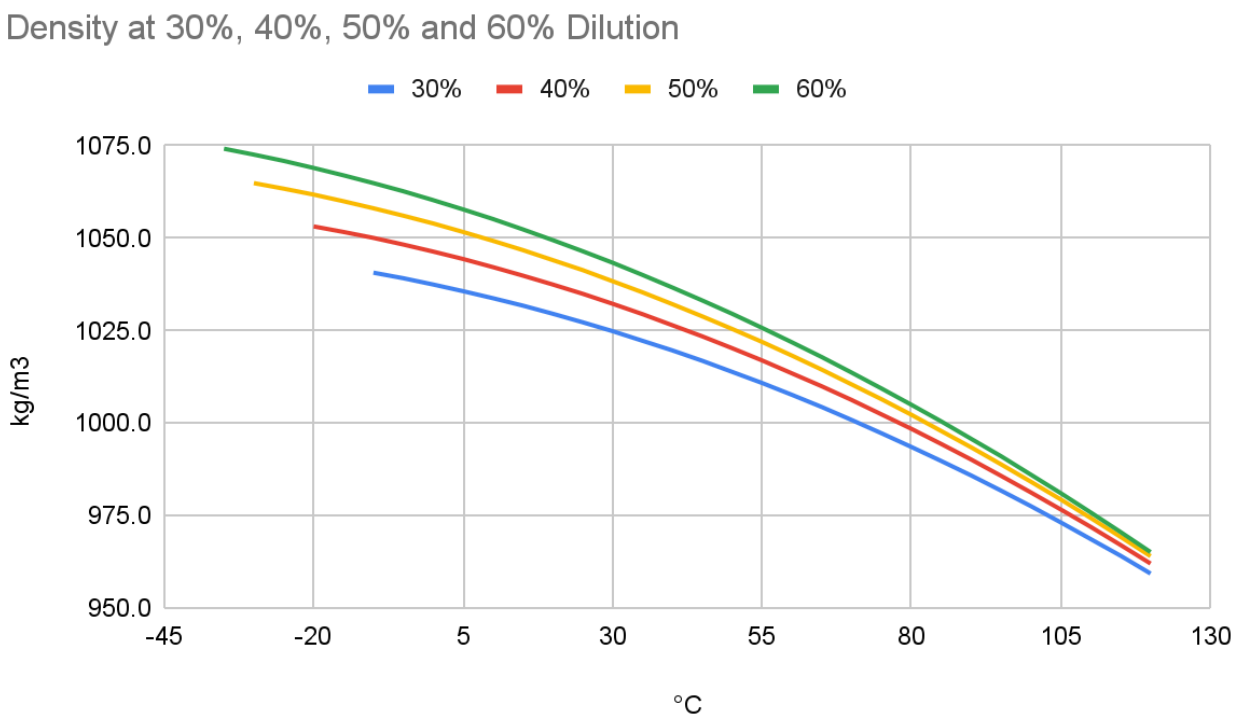


Chart 2 - Specific Heat (kJ/kg K) at 30%, 40% and 50%

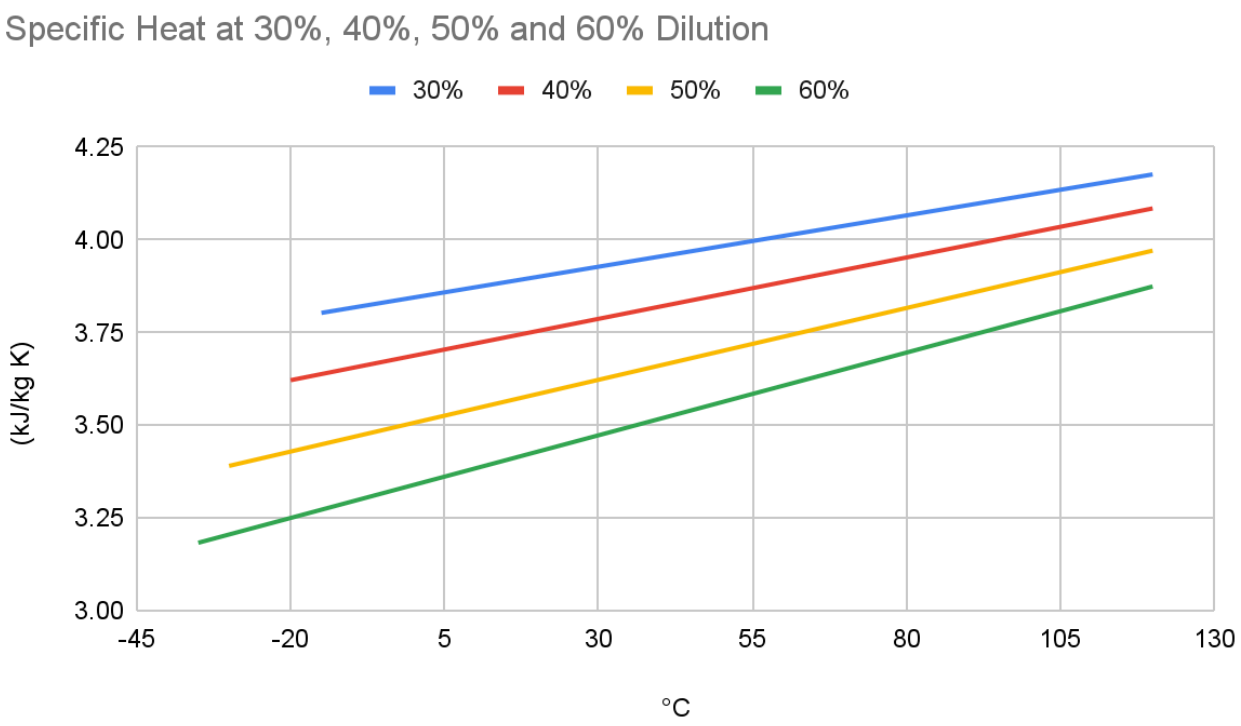


Chart 3 - Thermal Conductivity (W/mK) at 30%, 40% and 50%

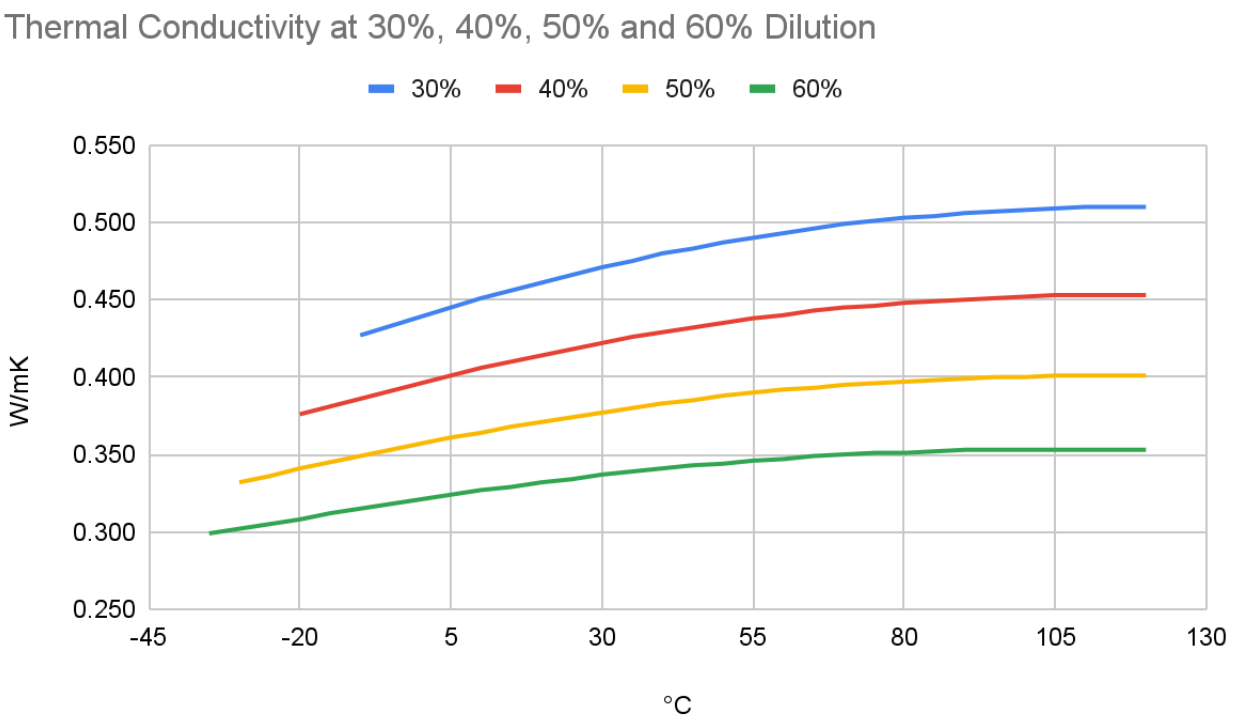


Chart 4 - Fluid Viscosity (mPa) at 30%, 40% and 50%

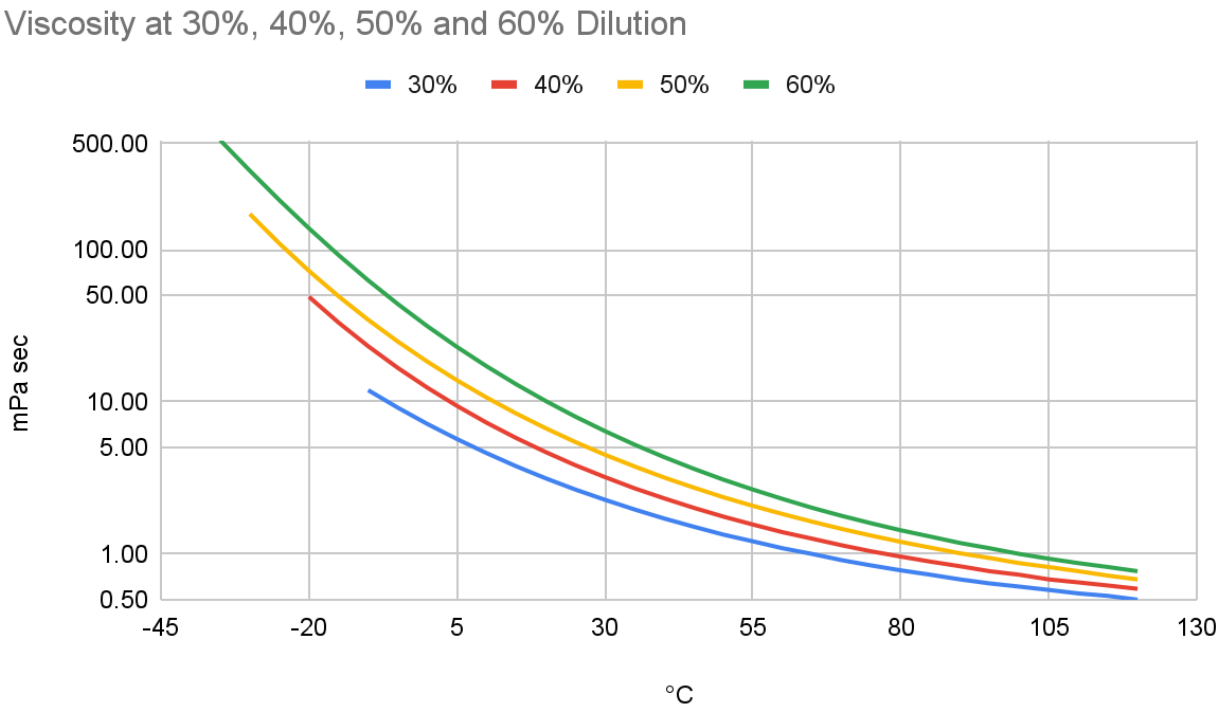
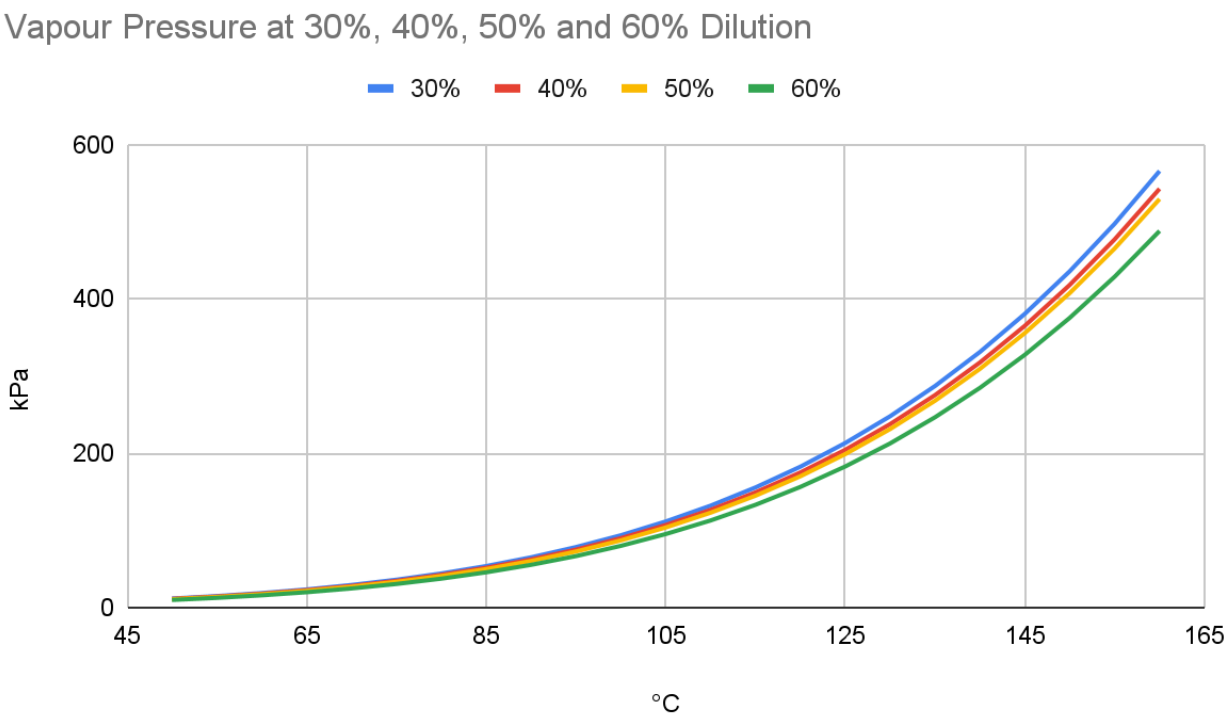


Chart 5 - Vapour Pressure (kPa) at 30%, 40% and 50%



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This product should not be used for any purpose or in any manner contrary to the labelling, SDS, or Technical Data Sheet, unless authorised to do so under appropriate legislation. By purchasing and using this product the purchaser assumes responsibility for any and all results that may occur and shall not hold the manufacturer liable for any loss or injury however occurring.