Technical Data Sheet

DOWCAL™ 100

Inhibited Ethylene Glycol-based Heat Transfer Fluid

Recommended Usage

DOWCAL™ 100 is an ethylene glycol-based heat transfer fluid for use in a wide range of industrial, pharmaceutical, HVAC and heat recovery applications. It is also suitable for applications requiring corrosion protection at lower glycol concentrations, such as ground source heat pumps.

Recommended use temperature range:
-50°C(-60°F) to 175°C (350°F)

Key Benefits of DOWCAL™ 100

- Improved corrosion protection, in particular for aluminum alloys
- Suitable for use at a minimum 20% concentration for high and low temperatures
- Hard water stability to enable use with local tap water
- Compatible with commonly used elastomers
- Long fluid lifetime, lowering maintenance cost
- Free of nitrite, borax and CMR (carcinogenic, mutagenic, and reprotoxic)

Geographical Availability

DOWCAL™ 100 is available in Europe, Middle-East, Africa and India

Typical Properties of DOWCAL™ 100 † Heat Transfer Fluid

Composition (% by weight)		
	Ethylene Glycol	91
	Inhibitors and Water	9
Color		Colorless
Density at 20°C		
	g/cm³	1.130 – 1.140
pH of Solution		
	(50% vol. in Water)	7.6 - 8.2
	(33% vol. in Water)	7.9 - 8.4
Reserve Alkalinity (min.)		10.0 ml

† Typical properties, not to be construed as specifications.
Complete Sales Specifications are available on request.

Form No. 180-01588 – 0513

Typical Freezing, Boiling Points and Other Properties of DOWCAL™ 100†

DOWCAL™ 100 Vol.%	DOWCAL™ 100 Wt.	Freezing Point °C	Refractive Index @ 20°C	Boiling Point °C @ 1bara	Density g/cm³ @ 20°C	Dyn. Viscosity mPa.s @ 20°C	Kin. Viscosity mm²/s @ 20°C
5.0	5.6	-2.1	1.3386	100.5	0.983	1.07	1.03
10.0	11.2	-4.3	1.3442	101.1	1.001	1.26	1.22
15.0	16.7	-6.7	1.3498	101.7	1.016	1.49	1.43
20.0	22.1	-9.4	1.3554	102.4	1.029	1.77	1.69
21.0	23.2	-10.0	1.3565	102.5	1.031	1.83	1.75
22.0	24.3	-10.6	1.3576	102.7	1.033	1.89	1.81
23.0	25.3	-11.3	1.3588	102.8	1.036	1.96	1.87
24.0	26.4	-11.9	1.3599	102.9	1.038	2.03	1.93
25.0	27.5	-12.6	1.3610	103.1	1.040	2.09	1.99
26.0	28.5	-13.2	1.3621	103.2	1.042	2.17	2.06
27.0	29.6	-14.0	1.3632	103.3	1.044	2.24	2.13
28.0	30.6	-14.7	1.3643	103.5	1.046	2.32	2.20
29.0	31.7	-15.4	1.3654	103.6	1.048	2.40	2.27
30.0	32.7	-16.2	1.3665	103.8	1.050	2.48	2.35
31.0	33.8	-17.0	1.3676	103.9	1.052	2.57	2.43
32.0	34.8	-17.8	1.3687	104.0	1.053	2.65	2.51
33.0	35.9	-18.7	1.3698	104.2	1.055	2.75	2.59
34.0	36.9	-19.5	1.3709	104.3	1.057	2.84	2.68
35.0	38.0	-20.4	1.3720	104.5	1.059	2.94	2.77
36.0	39.0	-21.4	1.3731	104.6	1.060	3.04	2.86
37.0	40.0	-22.3	1.3742	104.8	1.062	3.14	2.96
38.0	41.0	-23.3	1.3752	104.9	1.064	3.25	3.06
39.0	42.1	-24.3	1.3763	105.1	1.065	3.36	3.16
40.0	43.1	-25.4	1.3774	105.2	1.067	3.48	3.27
41.0	44.1	-26.4	1.3785	105.4	1.068	3.60	3.38
42.0	45.1	-27.5	1.3796	105.5	1.070	3.72	3.49
43.0	46.1	-28.7	1.3806	105.7	1.071	3.85	3.60
44.0	47.2	-29.9	1.3817	105.9	1.073	3.98	3.73
45.0	48.2	-31.1	1.3828	106.0	1.074	4.12	3.85
46.0	49.2	-32.3	1.3838	106.2	1.076	4.26	3.98
47.0	50.2	-33.6	1.3849	106.4	1.077	4.41	4.11
48.0	51.2	-34.9	1.3859	106.5	1.079	4.56	4.25
49.0	52.2	-36.3	1.3870	106.7	1.080	4.71	4.39
50.0	53.2	-37.7	1.3880	106.9	1.081	4.88	4.54
51.0	54.2	-39.1	1.3891	107.1	1.083	5.04	4.69
52.0	55.2	-40.6	1.3901	107.3	1.084	5.22	4.85
53.0	56.2	-42.1	1.3912	107.5	1.085	5.40	5.01
54.0	57.1	-43.7	1.3922	107.7	1.087	5.58	5.18
55.0	58.1	-45.3	1.3932	107.9	1.088	5.77	5.35
56.0	59.1	-46.9	1.3943	108.2	1.089	5.97	5.53
57.0	60.1	-48.6	1.3953	108.4	1.090	6.18	5.71
58.0	61.1	-50.3	1.3963	108.7	1.092	6.39	5.90
59.0	62.0	<-51	1.3973	108.9	1.093	6.61	6.10
60.0	63.0	<-51	1.3983	109.2	1.094	6.84	6.31
65.0	67.8	<-51	1.4033	110.8	1.100	8.10	7.43
70.0	72.6	<-51	1.4082	112.8	1.105	9.59	8.76
75.0	77.3	<-51	1.4130	115.4	1.111	11.4	10.3
80.0	82.0	<-51	1.4176	118.8	1.116	13.4	12.2
85.0	86.6	-50.9	1.4220	123.2	1.120	15.9	14.4
90.0	91.1	-40.8	1.4264	128.9	1.125	18.8	16.9
95.0	95.6	-34.5	1.4305	136.1	1.129	22.3	19.9
100.0	100.0	-28.7	1.4345	145.1	1.134	26.4	23.5

† Typical properties, not to be construed as specifications.

NOTE: Generally, for an extended margin of protection, you should select a temperature in this table that is at least 3°C lower than the expected lowest ambient temperature. Please contact Dow on specific cases or further assistance.

Saturation properties of DOWCAL™ 100 Fluid at 30% Volume Concentration

Temperature °C	Specific Heat kJ / (kg) (K)	Density kg/m3	Thermal Conductivity W/mK	Viscosity mPa.s
0	3.619	1.061	0.468	4.989
25	3.688	1.047	0.485	2.151
50	3.756	1.034	0.497	1.203
100	3.894	1.010	0.506	0.566
130	3.976	0.997	0.501	0.417
160	4.059	0.986	0.490	0.328

Saturation properties of DOWCAL™ 100 Fluid at 40% Volume Concentration

Temperature °C	Specific Heat kJ / (kg) (K)	Density kg/m3	Thermal Conductivity W/mK	Viscosity mPa.s
0	3.441	1.079	0.443	7.332
25	3.522	1.064	0.453	2.987
50	3.603	1.050	0.459	1.606
100	3.766	1.025	0.459	0.718
130	3.863	1.012	0.452	0.518
160	3.960	1.000	0.439	0.401

Saturation properties of DOWCAL™ 100 Fluid at 50% Volume Concentration

Temperature °C	Specific Heat kJ (kg) (K)	Density kg/m3	Thermal Conductivity W/mK	Viscosity mPa.s
0	3.254	1.094	0.419	10.776
25	3.348	1.078	0.422	4.148
50	3.441	1.064	0.423	2.145
100	3.628	1.038	0.414	0.912
130	3.740	1.024	0.403	0.645
160	3.852	1.012	0.387	0.491

Contact Us to Learn More:

Dow Customer Information Group

International Toll-free: +800 3 694 63 67

Toll Phone: +31 115 67 2626

dowcig@dow.com

www.dowcal.com

Literature Identification