



## 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/cm <sup>3</sup>	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.

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

DOWCAL™ 100	DOWCAL™ 100	Freezing Point	Refractive Index	Boiling Point	Density	Dyn. Viscosity	Kin. Viscosity
Vol.%	Wt.	°C	@ 20°C	°C @ 1bara	g/cm <sup>3</sup> @ 20°C	mPa.s @ 20°C	mm <sup>2</sup> /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/m <sup>3</sup>	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/m <sup>3</sup>	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/m <sup>3</sup>	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:

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