



Technical Data Sheet

DOWCAL™ 100 Heat Transfer Fluid

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, construction, and infrastructure applications. It is highly recommended for heating applications.

Recommended use temperature range:

-50°C to 175°C

Key Benefits of DOWCAL™ 100 Heat Transfer Fluid

- Improved corrosion protection, in particular for aluminum alloys
- Hard water stability to enable use with local tap water
- Compatible with commonly used elastomers
- Long fluid lifetime, lowering maintenance cost
- Recommended minimum 30% concentration for corrosion protection

Typical Properties of DOWCAL™ 100 Heat Transfer Fluid¹

Composition (% by weight)			
Ethylene Glycol		91%	
Performance additive and water		9%	
Property	Unit	Value	Test Method
Colour		Colourless	
Density at 20°C	g/cm ³	1.135	ASTM D4052
pH (50% vol. solution in demineralized water)		7.6 – 8.2	ASTM E70
Reserve alkalinity, as concentrate	ml	10.0 Min	ASTM D1121
Freezing point (50% vol. solution in demineralized water)	°C	-38	ASTM E70

1. Typical properties not to be construed as specification, complete sales specification is available on request.

Typical Freezing, Boiling Points and other properties of DOWCAL™ 100 Heat Transfer Fluid ¹

DOWCAL™ 100 % vol	DOWCAL™ 100 %wt	Freezing point °C	Refractive Index @ 20°C	Boiling point °C @ 1 bara	Density g/cm ³ @ 20°C	Dyn. viscosity mPa.s @ 20°C	Kin. viscosity mm ² /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

1. Typical properties not to be construed as specification, complete sales specification is available on request.
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 Heat Transfer Fluid at 30% volume concentration¹

Temp °C	Specific Heat kJ/kg.K	Density g/cm ³	Thermal conductivity W/m.K	Dyn. viscosity mPa.s
0	3.64	1.061	0.468	4.99
25	3.70	1.047	0.486	2.15
50	3.77	1.034	0.498	1.20
100	3.91	1.010	0.507	0.57
130	3.99	0.997	0.503	0.42
160	4.07	0.986	0.491	0.33

Saturation properties of DOWCAL™ 100 Heat Transfer Fluid at 40% volume concentration¹

Temp °C	Specific Heat kJ/kg.K	Density g/cm ³	Thermal conductivity W/m.K	Dyn. viscosity mPa.s
0	3.47	1.079	0.443	7.33
25	3.55	1.064	0.453	2.99
50	3.62	1.050	0.459	1.61
100	3.78	1.025	0.459	0.72
130	3.88	1.012	0.452	0.52
160	3.97	1.000	0.439	0.40

Saturation properties of DOWCAL™ 100 Heat Transfer Fluid at 50% volume concentration¹

Temp °C	Specific Heat kJ/kg.K	Density g/cm ³	Thermal conductivity W/m.K	Dyn. viscosity mPa.s
0	3.29	1.094	0.419	10.8
25	3.38	1.078	0.422	4.15
50	3.47	1.064	0.423	2.15
100	3.65	1.038	0.414	0.91
130	3.76	1.024	0.403	0.65
160	3.87	1.012	0.387	0.49

1. Typical properties not to be construed as specification, complete sales specification is available on request

**Handling
Precaution**

Before using this product, consult the Safety Data Sheet (SDS) for details on product hazards, recommended handling precautions and product storage.

**Disposal
Considerations**

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner. It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

**Product
Stewardship**

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

Contact:
www.dow.com/contact

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

