



Technical Data Sheet

DOWCAL™ 200E Heat Transfer Fluid

Borate free Inhibited Propylene Glycol-based Heat Transfer Fluid

Recommended Usage

DOWCAL™ 200E is a propylene glycol-based heat transfer fluid for use in a wide range of applications, including HVAC (Heating, Ventilation & Air Conditioning), freeze protection and other industrial usage. Low acute toxicity makes DOWCAL™ 200E heat transfer fluid especially suitable for applications where toxicity is a concern.

Recommended use temperature range:

-50°C to 120°C

Key Benefits of DOWCAL™ 200E Heat Transfer Fluid

- Low acute oral toxicity
- Free of borate, nitrate, and CMR (Carcinogenic, Mutagenic and Reprotoxic) classified substances¹
- 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 use at minimum 30% concentration for corrosion protection

Typical Properties of DOWCAL™ 200E Heat Transfer Fluid²

Composition (% by weight)			
Propylene Glycol		94%	
Performance additive and water		6%	
Property	Unit	Value	Test Method
Colour		Colourless	
Density at 20°C	g/cm ³	1.043	ASTM D4052
pH (50% vol. solution in demineralized water)		7.7 – 8.5	ASTM E70
Reserve alkalinity, as concentrate	ml	9.0 Min	ASTM D1121
Freeze Point (50% vol. in water)	°C	-32	ASTM D1177

1. DOWCAL™ 200E Heat Transfer Fluid is free of borate, nitrate, and CMR (Carcinogenic, Mutagenic and Reprotoxic) classified substances, meaning being manufactured without intentionally adding such substances.
2. Typical properties not to be construed as specification, complete sales specification is available on request.

Typical Freezing, Boiling Points and other properties of DOWCAL™ 200E Heat Transfer Fluid²

DOWCAL™ 200E % vol	DOWCAL™ 200E %wt	Freezing point °C	Refractive Index @ 20°C	Boiling point °C @ 1 bara	Density g/cm³ @ 20°C	Dyn. viscosity mPa.s @ 20°C	Kin. viscosity mm²/s @ 20°C
5.0	5.2	-1.2	1.3392	100	0.998	1.25	1.26
10.0	10.4	-2.8	1.3451	100	1.005	1.51	1.50
15.0	15.5	-4.7	1.3510	101	1.011	1.82	1.80
20.0	20.5	-7.0	1.3568	101	1.016	2.19	2.15
21.0	21.5	-7.5	1.3580	101	1.017	2.27	2.23
22.0	22.5	-8.0	1.3591	101	1.019	2.36	2.31
23.0	23.5	-8.6	1.3603	102	1.020	2.45	2.40
24.0	24.5	-9.2	1.3614	102	1.021	2.54	2.49
25.0	25.5	-9.8	1.3626	102	1.022	2.64	2.58
26.0	26.5	-10.4	1.3637	102	1.022	2.74	5.68
27.0	27.5	-11.0	1.3649	102	1.023	2.84	2.77
28.0	28.5	-11.7	1.3661	102	1.024	2.95	2.88
29.0	29.5	-12.4	1.3672	102	1.025	3.06	2.98
30.0	30.5	-13.0	1.3683	102	1.026	3.18	3.09
31.0	31.5	-13.8	1.3695	102	1.027	3.30	3.21
32.0	32.5	-14.5	1.3706	102	1.028	3.42	3.33
33.0	33.4	-15.3	1.3718	102	1.029	3.55	3.45
34.0	34.4	-16.1	1.3729	102	1.030	3.69	3.58
35.0	35.4	-16.9	1.3740	102	1.030	3.83	3.71
36.0	36.4	-17.7	1.3751	103	1.031	3.97	3.85
37.0	37.4	-18.6	1.3763	103	1.032	4.12	4.00
38.0	38.4	-19.4	1.3774	103	1.033	4.28	4.15
39.0	39.3	-20.4	1.3785	103	1.033	4.45	4.30
40.0	40.3	-21.3	1.3796	103	1.034	4.62	4.46
41.0	41.3	-22.2	1.3807	103	1.035	4.79	4.63
42.0	42.3	-23.2	1.3818	103	1.036	4.98	4.80
43.0	43.3	-24.2	1.3829	103	1.036	5.17	4.99
44.0	44.2	-25.3	1.3840	103	1.037	5.36	5.17
45.0	45.2	-26.3	1.3851	103	1.038	5.57	5.37
46.0	46.2	-27.4	1.3862	104	1.038	5.78	5.57
47.0	47.2	-28.5	1.3873	104	1.039	6.01	5.78
48.0	48.2	-29.7	1.3883	104	1.039	6.24	6.00
49.0	49.1	-30.8	1.3894	104	1.040	6.48	6.23
50.0	50.1	-32.0	1.3905	104	1.040	6.73	6.47
51.0	51.1	-33.3	1.3915	105	1.041	6.99	6.71
52.0	52.1	-34.5	1.3926	105	1.041	7.26	6.97
53.0	53.0	-35.8	1.3936	105	1.042	7.54	7.23
54.0	54.0	-37.1	1.3947	105	1.042	7.83	7.51
55.0	55.0	-38.5	1.3957	105	1.043	8.13	7.80
60.0	59.9	-45.6	1.4008	107	1.045	9.84	9.42
65.0	64.8	<-51	1.4057	108	1.047	11.9	11.4
70.0	69.7	<-51	1.4104	109	1.048	14.5	13.9
75.0	74.6	<-51	1.4150	111	1.049	17.7	16.9
80.0	79.6	<-51	1.4193	113	1.049	21.8	20.7
85.0	84.6	<-51	1.4234	116	1.048	27.0	25.7
90.0	89.7	<-51	1.4272	121	1.047	34.1	32.6
95.0	94.8	<-51	1.4308	129	1.045	45.1	43.1
100.0	100.0	<-51	1.4340	142	1.042	68.9	66.1

2. 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™ 200E Heat Transfer Fluid at 30% volume concentration²

Temp °C	Specific Heat kJ/kg.K	Density g/cm ³	Thermal conductivity W/m.K	Dyn. viscosity mPa.s
0	3.82	1.036	0.418	7.64
25	3.89	1.024	0.446	2.66
50	3.96	1.010	0.468	1.30
75	4.02	0.994	0.482	0.78
100	4.09	0.977	0.490	0.55
120	4.14	0.963	0.492	0.44

Saturation properties of DOWCAL™ 200E Heat Transfer Fluid at 40% volume concentration²

Temp °C	Specific Heat kJ/kg.K	Density g/cm ³	Thermal conductivity W/m.K	Dyn. viscosity mPa.s
0	3.68	1.045	0.377	12.00
25	3.76	1.031	0.400	3.80
50	3.84	1.016	0.418	1.73
75	3.92	0.999	0.430	0.99
100	4.00	0.981	0.436	0.67
120	4.06	0.966	0.437	0.52

Saturation properties of DOWCAL™ 200E Heat Transfer Fluid at 50% volume concentration²

Temp °C	Specific Heat kJ/kg.K	Density g/cm ³	Thermal conductivity W/m.K	Dyn. viscosity mPa.s
0	3.52	1.052	0.339	19.00
25	3.61	1.037	0.358	5.44
50	3.70	1.021	0.372	2.31
75	3.79	1.003	0.381	1.26
100	3.88	0.985	0.386	0.81
120	3.96	0.969	0.387	0.62

2. 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:
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