



## Technical Data Sheet

### **DOWCAL™ 100E HEAT TRANSFER FLUID**

Borate Free Inhibited Ethylene Glycol-based Heat Transfer Fluid

#### **Recommended usage**

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

#### **Key Benefits of DOWCAL™ 100E Heat Transfer Fluid**

- Improved corrosion and freeze protection, in particular for aluminum alloys
- Long Fluid Lifetime, lowering maintenance cost
- Suitable for use at a minimum 20% concentration
- Free of phosphate, nitrite, nitrate, borate and CMR (Carcinogenic, mutagenic, and reprotoxic) classified substances<sup>1</sup>
- Hard water stability to enable use with local tap water
- Compatible with commonly used elastomers

#### **Geographical Availability**

DOWCAL™ 100E Heat Transfer Fluid is available in Europe, Middle East, Africa and India.

### **Typical Properties of DOWCAL™ 100E Heat Transfer Fluid<sup>2</sup>**

Composition (% by weight)			Test Method
Ethylene glycol		94%	
Inhibitors		6%	
Color		Colorless	
Density at 20°C	g/cm <sup>3</sup>	1.114	ASTM D7042
pH of Solution	(50% vol. in water)	8.0 – 8.8	ASTM E70
Reserve Alkalinity	mL (0.1 N HCl)	9.5	ASTM D1121
Freeze Point (50% vol. in water)	°C	-36	ASTM D1177

1. DOWCAL™ 100E Heat Transfer Fluid is free of phosphate, nitrite, nitrate, borate 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.

## **<sup>2</sup>Typical Freezing, Boiling Points and other properties of DOWCAL™ 100E**

DOWCAL™ 100E Vol. %	DOWCAL™ 100E 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	5.6	-1.6	1.3389	100.5	1.003	1.23	1.23
10.0	11.0	-3.6	1.3443	101.1	1.012	1.40	1.38
15.0	16.4	-6.1	1.3498	101.7	1.020	1.59	1.56
20.0	21.7	-9.0	1.3551	102.4	1.028	1.82	1.77
21.0	22.7	-9.7	1.3562	102.5	1.030	1.87	1.81
22.0	23.8	-10.3	1.3573	102.7	1.032	1.92	1.86
23.0	24.8	-11.0	1.3583	102.8	1.033	1.97	1.91
24.0	25.9	-11.7	1.3594	102.9	1.035	2.02	1.96
25.0	26.9	-12.5	1.3605	103.1	1.036	2.08	2.01
26.0	27.9	-13.2	1.3615	103.2	1.038	2.14	2.06
27.0	29.0	-14.0	1.3626	103.3	1.039	2.19	2.11
28.0	30.0	-14.8	1.3637	103.5	1.040	2.25	2.17
29.0	31.0	-15.6	1.3647	103.6	1.042	2.32	2.22
30.0	32.0	-16.4	1.3658	103.8	1.043	2.38	2.28
31.0	33.1	-17.2	1.3668	103.9	1.045	2.45	2.34
32.0	34.1	-18.1	1.3679	104.0	1.046	2.52	2.41
33.0	35.1	-19.0	1.3689	104.2	1.048	2.59	2.47
34.0	36.1	-19.9	1.3699	104.3	1.049	2.66	2.54
35.0	37.1	-20.8	1.3710	104.5	1.050	2.74	2.61
36.0	38.1	-21.7	1.3720	104.6	1.052	2.82	2.68
37.0	39.1	-22.7	1.3731	104.8	1.053	2.90	2.75
38.0	40.1	-23.7	1.3741	104.9	1.054	2.98	2.83
39.0	41.1	-24.7	1.3751	105.1	1.056	3.06	2.90
40.0	42.1	-25.7	1.3761	105.2	1.057	3.15	2.98
41.0	43.1	-26.7	1.3772	105.4	1.058	3.24	3.07
42.0	44.1	-27.8	1.3782	105.5	1.059	3.34	3.15
43.0	45.1	-28.9	1.3792	105.7	1.061	3.44	3.24
44.0	46.1	-30.0	1.3802	105.9	1.062	3.54	3.33
45.0	47.1	-31.1	1.3812	106.0	1.063	3.64	3.43
46.0	48.0	-32.2	1.3823	106.2	1.064	3.75	3.52
47.0	49.0	-33.4	1.3833	106.4	1.066	3.86	3.62
48.0	50.0	-34.6	1.3843	106.5	1.067	3.98	3.73
49.0	51.0	-35.8	1.3853	106.7	1.068	4.10	3.83
50.0	52.0	-37.0	1.3863	106.9	1.069	4.22	3.95
51.0	52.9	-38.2	1.3873	107.1	1.070	4.35	4.06
52.0	53.9	-39.5	1.3883	107.3	1.072	4.48	4.18
53.0	54.9	-40.8	1.3893	107.5	1.073	4.62	4.30
54.0	55.9	-42.1	1.3902	107.7	1.074	4.76	4.43
55.0	56.8	-43.4	1.3912	107.9	1.075	4.90	4.56
60.0	61.7	-50.3	1.3961	109.2	1.081	5.72	5.29
65.0	66.5	<-51	1.4009	110.8	1.086	6.70	6.17
70.0	71.3	<-51	1.4056	112.8	1.091	7.88	7.22
75.0	76.0	<-51	1.4103	115.4	1.096	9.33	8.51
80.0	80.8	<-51	1.4148	118.8	1.101	11.1	10.1
85.0	85.6	-50.9	1.4192	123.2	1.106	13.4	12.1
90.0	90.3	-40.8	1.4236	128.9	1.111	16.3	14.7
95.0	95.1	-34.5	1.4278	136.1	1.115	20.2	18.1
100.0	100.0	-28.7	1.4319	145.1	1.119	25.7	22.9

<sup>2</sup> 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.

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