



# UCARTHERM

## Inhibited Ethylene Glycol-based Heat Transfer Fluid

UCARTHERM™ heat transfer fluid is a formulation of 94 weight percent ethylene glycol and a specially designed package of industrial corrosion inhibitors. The fluid is dyed fluorescent yellow for leak detection purposes. Solutions in water provide freeze protection to -51°C (-60°F) and burst protection to -73°C (-100°F).

**Recommended use temperature range:**  
-51°C (-60°F) to 135°C (275°F).

**Suitable applications:** thermal storage, water chiller systems, computer room cooling, solar systems, combined heating and cooling loops, and radiant heating.

For health and safety information for this product, contact your Dow sales representative or call the number for your area on the second page of this sheet for a Material Safety Data Sheet (MSDS).

### Typical Concentrations of UCARTHERM Fluid Required to Provide Freeze and Burst Protection at Various Temperatures

Temperature °C      °F)	Percent UCARTHERM Fluid Concentration Required	
	For Freeze Protection Volume %	For Burst Protection Volume %
-7      (20)	16	10
-12     (10)	25	16
-18     (0)	33	21
-23     (-10)	39	26
-28     (-20)	44	31
-34     (-30)	48	35
-40     (-40)	52	37
-46     (-50)	55	38
-51     (-60)	58	40
-73     (-100)	NA	43

**NOTE:** These figures are examples only and may not be appropriate to your situation. Generally, for an extended margin of protection, you should select a temperature in this table that is at least 3°C (5°F) lower than the expected lowest ambient temperature. Inhibitor levels should be adjusted for solutions of less than 30% glycol. Contact Dow for information on specific cases or further assistance.

**ATTENTION:** These are typical numbers only and are not to be regarded as specifications. As use conditions are not within its control, Dow does not guarantee results from use of the information or products herein; and gives no warranty, express or implied.

### Typical Physical Properties of UCARTHERM Fluid†

UCARTHERM HTF Volume %	Wt.	Freezing Point		Reserve Alkalinity	Sp Gr [t/68°F (t/20°C)]		Density, lb/U.S. gal 68°F (20°C)	Boiling Point °F (°C)
		°F	(°C)		25°F (-4°C)	68°F (20°C)		
25	27.4	10	(-12)	6.0	1.050	1.042	8.67	217 (102.7)
30	32.7	3	(-16)	7.5	1.059	1.050	8.74	218 (103.4)
35	37.9	-5	(-20.5)	8.5	1.067	1.057	8.79	220 (104.2)
40	43.0	-13	(-25)	9.9	1.075	1.064	8.85	221 (105.1)
45	48.1	-23	(-30.5)	11.0	1.084	1.072	8.92	223 (106.1)
50	53.1	-36	(-38)	12.0	1.092	1.080	8.99	225 (107.3)
55	58.1	-49	(-45)	13.4	1.098	1.086	9.04	228 (108.7)
60	62.9	<-67	(-55)	14.5	1.105	1.092	9.09	231 (110.2)
65	67.8	<-70	(-57)	15.6	1.113	1.099	9.14	234 (112.2)

† Typical properties, not to be construed as specifications.

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## Typical Properties<sup>†</sup> of UCARTHERM Fluid

UCARTHERM Heat Transfer Fluid	
Composition (% by weight)	
Ethylene Glycol	94
Performance Additives & Water	6
Color	
	Fluorescent Yellow
Specific Gravity	
20/20° (68/68°F)	1.130–1.136
pH of Solution	
(50% glycol)	8.5–9.2
Reserve Alkalinity (min.)	
	22 ml

<sup>†</sup>Typical properties, not to be construed as specifications. Complete sales specifications are available on request.

## Heat Transfer Properties of UCARTHERM Fluid

UCARTHERM Heat Transfer Fluid Volume %	Specific Heat				Thermal Conductivity			
	Viscosity, cP		BTU•°F (cal/g•°C)		BTU/hr•ft•°F		cal/sec•cm•°C x 10,000	
	25°F (-4°C)	68°F (20°C)	25°F (-4°C)	68°F (20°C)	25°F (-4°C)	68°F (20°C)	25°F (-4°C)	68°F (20°C)
25	4.2	1.7	0.907	0.918	0.2639	0.2785	10.899	11.510
30	4.9	1.9	0.886	0.898	0.2534	0.2666	10.465	11.020
35	5.8	2.2	0.862	0.877	0.2436	0.2554	10.061	10.560
40	6.8	2.5	0.839	0.855	0.2338	0.2447	9.656	10.120
45	8.1	2.9	0.814	0.832	0.2249	0.2344	9.288	9.691
50	9.6	3.4	0.789	0.808	0.2159	0.2248	8.917	9.292
55	11.5	4.0	0.764	0.784	0.2078	0.2155	8.582	8.910
60	13.8	4.6	0.738	0.760	0.1996	0.2068	8.244	8.541
65	16.8	5.3	0.712	0.735	0.1922	0.1985	7.938	8.198

## *For further information, call...*

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