

Inhibited Ethylene Glycol Heat Transfer Fluid for Aluminum

Process Applications

- HVAC/R
- Boilers and heat exchangers
- Energy applications
- Geothermal energy
- Cooling towers
- Process cooling & heating
- Line heaters
- Winterization
- Solar Applications
- Ice & snow melting systems
- Plastic extrusion

■ Dynalene EG-A1 Overview

Dynalene EG-A1 is an inhibited ethylene glycol heat transfer fluid which offers users a stable, efficient, and aluminum-safe product for applications where freeze protection is needed. Properly used and maintained, Dynalene EG-A1 offers excellent thermophysical properties all while protecting your system from corrosion and degradation for years.

Dynalene EG-A1's inhibitor package is specifically formulated to protect systems using aluminum materials and alloys even at temperatures > 60°C.

■ Corrosion Protection

Dynalene EG-A1 utilizes a unique corrosion inhibitor package, which offers superior corrosion protection for most metals including aluminum, carbon steel, brass, copper, stainless steel, and cast iron by creating a corrosion-preventing passive layer on the surface that contacts the Dynalene EG-A1. The inhibitor also stabilizes the pH of the fluid.

To ensure the inhibitor package provides the best corrosion protection, Dynalene sells this product as pre-mixed solutions. Please contact Dynalene if you are interested on-site dilution of Dynalene EG-A1.

■ Benefits of Choosing Dynalene EG-A1

- Pre-mixed solutions
- Custom blends
- Dyes available: yellow, red, blue, pink and fluorescent green
- Can be re-inhibited
- Proven performance
- Available worldwide
- Cost-effective
- Total fluid care option

■ Dynalene's Fluid Care Program

Coupling our Dynalene fluids with a fluid care program can extend the life of your systems significantly. We offer yearly testing of the heat transfer fluid in your system and can track the changes in the fluid year to year so adjustments can be made to keep your systems working at its best.

Recommended Temperature Range:

-51°C (-60°F) to 90°C (194°F)

Required Concentrations of Dynalene EG-A1 for Burst Protection:

Temperature		Vol% Dynalene EG-A1
°C	°F	For Burst Protection
-6	25	12
-13.2	8	20
-18	-2	24
-23	-9	28
-26	-14	30
-32	-25	33
< -40	< -40	35

■ Properties of Dynalene EG-A1

A comprehensive list of all thermo-physical properties of Dynalene EG-A1 can be found on pages 2, 3, 4, and 5. For health and safety information or to request a Safety Data Sheet, contact our Dynalene sales representatives.

Composition:	Ethylene glycol, inhibitors
Appearance:	Clear, colorless
Odor:	Little or none

pH:	8.0 - 8.7
Flash Point:	None

■ Quantity & Availability

Dynalene EG-A1 is offered in 1, 2.5, 5, 30, 55, and 265-gallon containers as well as 5,000-gallon tankers. Pricing depends on quantity, and Dynalene, Inc. will work with you to try to fit your budget.

General Properties

Vol. % Dynalene EG-A1	Wt. % Dynalene EG-A1	Freeze Point °F	Freeze Point °C	Boiling Point °F	*Reserve Alkalinity (mL)	Specific Gravity 22°C (72°F)
0	0.0	32	0	212	0	1.000
5	5.6	29	-1.7	212	≥ 0.5	1.011
10	11.2	26	-3.3	212	≥ 1.0	1.018
15	16.6	23	-5	212	≥ 1.5	1.025
20	22.0	19	-7.2	213	≥ 2.0	1.032
25	27.3	14	-10.1	214	≥ 2.5	1.039
26	28.4	13	-10.6	214	≥ 2.6	1.040
27	29.4	12	-11.1	214	≥ 2.7	1.042
28	30.5	10	-12.2	215	≥ 2.8	1.043
29	31.5	9	-12.8	216	≥ 2.9	1.045
30	32.6	8	-13.3	216	≥ 3.0	1.046
31	33.6	7	-13.9	216	≥ 3.1	1.047
32	34.7	5	-15.0	216	≥ 3.2	1.049
33	35.7	4	-15.6	216	≥ 3.3	1.050
34	36.7	2	-16.7	217	≥ 3.4	1.052
35	37.7	1	-17.2	217	≥ 3.5	1.053
36	38.8	-1	-18.3	217	≥ 3.6	1.054
37	39.8	-3	-19.4	218	≥ 3.7	1.056
38	40.8	-4	-20.0	218	≥ 3.8	1.057
39	41.9	-6	-21.1	219	≥ 3.9	1.059
40	42.9	-8	-22.2	219	≥ 4.0	1.060
41	43.9	-10	-23.3	219	≥ 4.1	1.062
42	44.9	-12	-24.4	219	≥ 4.2	1.063
43	46.0	-14	-25.5	219	≥ 4.3	1.064
44	47.0	-16	-26.7	220	≥ 4.4	1.066
45	48.0	-18	-27.8	220	≥ 4.5	1.067
46	49.0	-21	-29.4	220	≥ 4.6	1.069
47	50.0	-23	-30.6	221	≥ 4.7	1.070
48	51.0	-26	-32.2	221	≥ 4.8	1.071
49	52.0	-28	-33.3	222	≥ 4.9	1.073
50	53.0	-31	-35.0	222	≥ 5.0	1.074
55	57.9	-46	-43.3	223	≥ 5.5	1.081
60	62.8	<-60	-51.1	225	≥ 6.0	1.088
70	72.4	<-60	-51.1	230	≥ 7.0	1.102
75	77.2	<-60	-51.1	238	≥ 7.5	1.109
80	81.8	<-60	-51.1	246	≥ 8.0	1.116

Viscosity

1 cP= 0.001 Pa·s

Temp, °F	Dynalene EG-A1, Viscosity, cP								
	Volume								
	20%	25%	30%	35%	40%	45%	50%	55%	60%
-30									89.7
-20							40.4	50.5	60.5
-10							27.3	34.7	42.1
0					13.8	16.6	19.3	24.7	30.1
10			6.83	8.47	10.1	12.2	14.3	18.2	22.1
20	3.90	4.64	5.38	6.56	7.74	9.32	10.9	13.8	16.6
30	3.14	3.74	4.33	5.21	6.09	7.29	8.48	10.6	12.7
40	2.59	3.07	3.54	4.23	4.91	5.84	6.77	8.34	9.90
50	2.18	2.57	2.95	3.50	4.04	4.77	5.50	6.68	7.85
60	1.86	2.18	2.49	2.94	3.38	3.97	4.55	5.44	6.33
70	1.61	1.87	2.13	2.50	2.87	3.34	3.81	4.49	5.17
80	1.41	1.63	1.84	2.15	2.46	2.85	3.23	3.76	4.28
90	1.24	1.42	1.60	1.87	2.13	2.45	2.76	3.17	3.58
100	1.11	1.26	1.41	1.64	1.87	2.13	2.39	2.71	3.03
120	0.90	1.01	1.11	1.29	1.46	1.64	1.82	2.03	2.23
140	0.74	0.82	0.90	1.04	1.17	1.30	1.43	1.56	1.69
160	0.63	0.69	0.75	0.85	0.95	1.05	1.15	1.24	1.32
180	0.54	0.59	0.63	0.71	0.79	0.87	0.94	1.00	1.06
200	0.47	0.51	0.54	0.61	0.67	0.73	0.78	0.82	0.86
220	0.41	0.44	0.46	0.52	0.57	0.62	0.66	0.69	0.72

Thermal Conductivity

1 Btu/hr-ft·°F = 1.73 W/mK

Temp, °F	Dynalene EG-A1, Thermal Conductivity, Btu/hr-ft·°F								
	Volume								
	20%	25%	30%	35%	40%	45%	50%	55%	60%
-30									0.178
-20							0.193	0.187	0.181
-10							0.197	0.191	0.184
0					0.216	0.208	0.200	0.193	0.186
10			0.238	0.229	0.220	0.212	0.204	0.197	0.189
20	0.264	0.254	0.243	0.234	0.224	0.216	0.207	0.199	0.191
30	0.269	0.258	0.247	0.237	0.227	0.219	0.210	0.202	0.194
40	0.274	0.263	0.251	0.241	0.231	0.222	0.212	0.204	0.196
50	0.279	0.267	0.255	0.245	0.234	0.225	0.215	0.207	0.198
60	0.284	0.272	0.259	0.248	0.237	0.228	0.218	0.209	0.200
70	0.288	0.276	0.263	0.252	0.240	0.230	0.220	0.211	0.202
80	0.292	0.279	0.266	0.255	0.243	0.233	0.223	0.214	0.204
90	0.296	0.283	0.269	0.258	0.246	0.236	0.225	0.216	0.206
100	0.299	0.286	0.272	0.260	0.248	0.238	0.227	0.218	0.208
120	0.305	0.291	0.277	0.265	0.253	0.242	0.230	0.220	0.210
140	0.311	0.297	0.282	0.269	0.256	0.245	0.233	0.223	0.213
160	0.315	0.300	0.285	0.272	0.259	0.248	0.236	0.226	0.215
180	0.318	0.303	0.288	0.275	0.262	0.250	0.238	0.228	0.217
200	0.320	0.305	0.290	0.277	0.263	0.252	0.240	0.229	0.218
220	0.321	0.306	0.291	0.278	0.265	0.253	0.240	0.230	0.219

1 Btu/lb_m·°F = 4,186 J/kg°C

Specific Heat

Dynalene EG-A1, Specific Heat, Btu/lb·°F									
Temp, °F	Volume								
	20%	25%	30%	35%	40%	45%	50%	55%	60%
-30									0.669
-20							0.730	0.702	0.674
-10							0.735	0.708	0.680
0					0.792	0.766	0.740	0.713	0.686
10			0.845	0.821	0.796	0.771	0.745	0.719	0.692
20	0.894	0.871	0.848	0.825	0.801	0.776	0.751	0.725	0.698
30	0.897	0.875	0.852	0.829	0.805	0.781	0.756	0.730	0.704
40	0.900	0.878	0.856	0.833	0.810	0.786	0.761	0.736	0.710
50	0.903	0.882	0.860	0.837	0.814	0.790	0.766	0.741	0.716
60	0.907	0.886	0.864	0.842	0.819	0.796	0.772	0.747	0.722
70	0.910	0.889	0.868	0.846	0.824	0.801	0.777	0.753	0.728
80	0.913	0.892	0.871	0.850	0.828	0.805	0.782	0.758	0.734
90	0.916	0.896	0.875	0.854	0.833	0.807	0.781	0.761	0.740
100	0.919	0.899	0.879	0.858	0.837	0.815	0.793	0.770	0.746
120	0.925	0.906	0.887	0.867	0.846	0.825	0.803	0.780	0.757
140	0.931	0.913	0.895	0.875	0.855	0.835	0.814	0.792	0.769
160	0.938	0.920	0.902	0.884	0.865	0.845	0.824	0.803	0.781
180	0.944	0.927	0.910	0.892	0.874	0.855	0.835	0.814	0.793
200	0.950	0.934	0.918	0.901	0.883	0.864	0.845	0.825	0.805
220	0.956	0.941	0.925	0.909	0.892	0.874	0.856	0.837	0.817

1 lb_m/ft³ = 16 kg/m³

Density

Dynalene EG-A1, Density, lb/ft ³									
Temp, °F	Volume								
	20%	25%	30%	35%	40%	45%	50%	55%	60%
-30									70.40
-20							69.26	69.76	70.26
-10							69.12	69.61	70.10
0					67.93	68.45	68.97	69.46	69.94
10			66.68	67.24	67.79	68.31	68.82	69.30	69.78
20	65.36	65.96	66.55	67.10	67.64	68.15	68.66	69.13	69.60
30	65.23	65.82	66.41	66.95	67.49	67.99	68.49	68.96	69.43
40	65.10	65.69	66.27	66.80	67.33	67.83	68.32	68.78	69.24
50	64.97	65.54	66.11	66.64	67.17	67.66	68.14	68.61	69.08
60	64.83	65.40	65.96	66.48	66.99	67.48	67.96	68.41	68.86
70	64.68	65.24	65.79	66.31	66.82	67.30	67.77	68.22	68.66
80	64.52	65.07	65.62	66.13	66.63	67.11	67.58	68.02	68.46
90	64.36	64.91	65.45	65.95	66.44	66.91	67.38	67.82	68.25
100	64.20	64.74	65.27	65.76	66.25	66.71	67.17	67.60	68.03
120	63.85	64.37	64.88	65.36	65.84	66.29	66.74	67.16	67.58
140	63.47	63.98	64.48	64.95	65.41	65.85	66.28	66.69	67.10
160	63.07	63.56	64.05	64.50	64.95	65.38	65.80	66.21	66.61
180	62.65	63.12	63.59	64.03	64.47	64.89	65.30	65.70	66.09
200	62.20	62.66	63.11	63.54	63.97	64.38	64.78	65.16	65.54
220	61.72	62.17	62.61	63.03	63.44	63.84	64.23	64.61	64.98

1 psi = 6,895 Pa = 0.069 bar = 0.0681 atm = 51.7 mmHg = 21.7 inH₂O

Vapor Pressure

Temp, °F	Dynalene EG-A1, Vapor Pressure, psia								
	Volume								
	20%	25%	30%	35%	40%	45%	50%	55%	60%
100	0.9	0.9	0.8						
110	1.2	1.2	1.1	1.1	1.0				
120	1.6	1.6	1.5	1.5	1.4	1.4	1.3	1.2	1.1
130	2.0	2.0	2.0	1.9	1.8	1.8	1.7	1.6	1.5
140	2.7	2.6	2.5	2.5	2.4	2.3	2.2	2.1	2.0
150	3.5	3.4	3.3	3.2	3.1	3.1	2.8	2.6	2.6
160	4.4	4.3	4.2	4.1	3.9	3.8	3.6	3.5	3.3
170	5.6	5.5	5.3	5.2	5.0	4.8	4.6	4.4	4.2
180	7.0	6.6	6.2	6.3	6.3	6.1	5.8	5.6	5.3
190	8.7	8.5	8.3	8.1	7.8	7.5	7.2	6.9	6.6
200	10.8	10.6	10.3	10.0	9.7	9.7	9.0	8.2	8.2
210	13.2	12.9	12.6	12.2	11.8	11.4	11.0	10.5	10.0
220	16.4	15.9	15.3	14.9	14.4	13.9	13.4	12.9	12.3
230	19.4	19.0	18.5	18.0	17.5	16.9	16.2	15.6	14.9
240	23.3	22.8	22.3	21.7	21.0	20.3	19.5	18.7	17.9
250	27.9	26.6	26.6	25.9	25.1	25.1	23.3	21.4	21.4

Product Disclaimer

The information contained in this entire publication is presented in good faith at “no charge” and is believed to be correct as of the date indicated. No representations or warranties are made as to its completeness or accuracy. The information listed is supplied upon the condition that the persons receiving it will make their own determination as to its suitability for their purposes prior to use. In no event will the seller be responsible for damages of any nature whatsoever resulting from the use of, or reliance upon, this information or the product to which this information refers. Nothing contained on this page is to be construed as a recommendation to use the product, process, equipment or formulation in conflict with any patent. No representation or warranty, expressed or implied, is made that the use of this product will not infringe any patent.

No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or for any other nature are made with respect to the information, or the product to which the information refers.

Contact Information

Corporate Headquarters

Dynalene, Inc.
5250 West Coplay Road
Whitehall, PA 18052
Phone: 610-262-9686 / 1-877-244-5525
Fax: 610-262-7437
Email: info@dynalene.com
Website: www.dynalene.com

Midwest Location

248 Beinoris Dr
Wood Dale, IL 60191
Phone: 1-855-216-7639
Email: centralsales@dynalene.com

West Location

1701 S 5350 W
Salt Lake City, UT 84104
Phone: 1-877-244-5525
Email: westsales@dynalene.com

Published April 2022