

DynaGuard

Premium PDT-Inhibited Propylene Glycol Heat Transfer Fluid for Multi-Metal Systems



Product Features

- Utilizes highest quality virgin propylene glycol along with premium PDT premier inhibitors to help prevent corrosion and minimize deposit formation.
- Protects all commonly used metals and is completely safe for all metals including aluminum.
- Highly compatible with non-metal components, including most plastics, elastomers, hoses, seals, and gaskets.
- Does not contain any conventional inorganic salts (nitrite, nitrate, silicate, phosphate, and borate), amines, or 2-ethylhexanoic acid (2-EHA).
- Formulated to meet the strict performance requirements of ASTM D8039, D8040, D1384, D3306, D6210, and D4985, as well as Cummins CES14603 and CES14439.
- Highly stable over a wide temperature range of -51°C to +165°C.

Description

DynaGuard is an ultra-premium, heavy-duty heat transfer fluid specifically formulated using 100% virgin propylene glycol. Designed to provide unsurpassed freeze and corrosion protection, this product utilizes a proprietary PDT corrosion inhibitor package to protect multi-metal systems, including those made entirely or partly of aluminum. Unlike traditional phosphate-based fluids that can struggle to protect all-aluminum systems operating above 65°C (150°F), DynaGuard is highly stable under extreme temperatures. Its advanced PDT chemistry ensures a very slow inhibitor depletion rate (virtually non-depleting) resulting in a significantly extended fluid life that matches or exceeds traditional fluids without the need for periodic boosting.

DynaGuard is specifically engineered for the rigorous demands of the food industry. Utilizing a low-toxicity, propylene glycol base, it provides an exceptionally safe and highly efficient heat transfer solution for breweries, dairies, cold storage, and food packaging plants where non-toxic fluids are critical.

DynaGuard quite simply provides superior, long-lasting performance for the most demanding heating and cooling applications.

DynaGuard ASTM D1384 Corrosion Results

Metal	#1	#2	#3	Avg.	Max*
Copper	1	1	1	1	10
Solder	1	1	1	1	30
Brass	0	0	0	0	10
Steel	1	1	1	1	10
Cast Iron	0	0	0	0	10
Aluminum	8	2	1	4	30

*Maximum corrosion weight loss as specified by ASTM D3306

Applications include

DynaGuard is designed for use anywhere a high-quality heat transfer fluid is required. It is especially well-suited for all-aluminum boiler systems and high-temperature applications.

Common applications include:

- Hydronic heating systems
- Plumbing systems
- Heat transfer systems
- Breweries, dairies, food packaging facilities
- Solar systems
- Mixed-metal HVAC applications

Product Properties

Appearance	Pink liquid
Specific Gravity, at 20°C	1.03-1.06 kg/L
pH	8-9
Flash Point	>100°C (>212°F)
Base Fluid:	Virgin, high purity, propylene glycol
Inhibitor Technology:	Premium PDT
Toxicity:	Non-toxic
Operating Temp. Range:	-51°C to +165°C (-60°C to +325°F)
Solubility:	Water soluble
Thermal Conductivity (4°C):	0.253 (30% conc.), 0.215 (50% conc.)
Thermal Conductivity (80°C):	0.291 (30% conc.), 0.241 (50% conc.)
Thermal Conductivity (120°C):	0.293 (30% conc.), 0.245 (50% conc.)
	[BTU/(hr*ft ³)(°F/ft)]
Specific Heat (4°C):	0.862 (30% conc.), 0.774 (50% conc.)
Specific Heat (80°C):	0.915 (30% conc.), 0.849 (50% conc.)
Specific Heat (120°C):	0.944 (30% conc.), 0.882 (50% conc.)
	[BTU/(lb*ft)]

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Typical Freezing and Boiling Points

DynaGuard		Freezing Point		Boiling Point		Degree	Refractive Index
Wt %	Vol %	C	F	C @ 101 kPa	F @ 760 mmHg	Brix	22C (72 F)
0.0	0.0	0.0	32.0	100.0	212	0.0	1.3328
5.2	5.2	-1.6	29.1	100.0	212	4.8	1.3383
10.5	10.0	-3.3	26.1	100.0	212	8.4	1.3438
15.7	15.0	-5.1	22.9	100.0	212	12.9	1.3495
20.9	20.3	-7.1	19.2	100.6	213	15.4	1.3555
26.1	25.5	-9.6	14.7	101.1	214	19.0	1.3615
31.4	30.7	-12.7	9.2	102.2	216	22.0	1.3675
36.6	36.0	-16.4	2.4	102.8	217	26.1	1.3733
41.8	41.4	-21.1	-6.0	103.9	219	29.1	1.3790
47.0	46.7	-26.7	-16.1	104.4	220	31.8	1.3847
52.3	52.2	-33.5	-28.3	105.6	222	34.7	1.3903
57.3	57.5	-41.6	-42.8	106.1	223	38.0	1.3956
62.7	62.7	-51.1	-59.9	107.2	225	40.3	1.4008
68.0	68.0			108.3	227	42.1	1.4058
73.2	73.2			110.0	230	44.1	1.4104
78.4	78.4			113.9	237	46.1	1.4150
86.6	86.6			118.3	245	48.0	1.4193
88.9	88.9			125.0	257	50.0	1.4235
94.1	94.1			132.2	270	51.4	1.4275
99.3	99.3			154.4	310	52.8	1.4315

Typical Concentrations Required to Provide Freeze and Burst Protection

Temperature	Volume %			
	C	F	Freeze Protection	Burst Protection
-7		20	18	12
-12		10	29	20
-18		0	36	24
-23		-10	42	28
-29		-20	46	30
-34		-30	50	33
-40		-40	54	35
-46		-50	57	35
-51		-60	60	35

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.



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