



CRYO-TEK™ FIRE SYSTEM

Cryo-tek Fire System Antifreezes are designed to be used in wet fire sprinkler systems. They are formulated to be used in place of water and other sprinkler system fluids where freezing can occur.



Cryo-tek PG 38

- Cryo-tek PG 38 is a ready to use, propylene glycol-based antifreeze solution for use in all wet fire system sprinkler systems except those using galvanized or CPVC pipe and fittings.
- PG 38 meets the NFPA requirements for propylene glycol solutions.



Cryo-tek GL 48

- Cryo-tek GL 48 is a non-toxic glycerin-based antifreeze for use in all types of wet fire sprinkler systems, including CPVC.
- Cryo-tek GL 48 is ready to use out of the pail and requires no dilution.
- It meets the NFPA guidelines of a 48% glycerin solution.
- Cryo-tek GL 48 is listed for use with BlazeMaster® CPVC pipe and fittings

Table 1: Cryo-tek Fire System AF Properties

Properties	PG38	GL48
Color	Red	Orange
Specific gravity (at 77° F/25° C)	1.036	1.121
Weight per gallon	8.63 lbs/gal	9.34 lbs/gal
Viscosity	3.5 cps	6.3 cps
pH	8.0–9.0	7.5–8.5
Freezing point ¹	0° F	-15° F
Burst point ²	-50° F	-50° F
Flow point ³	-15° F	-25° F

¹Freeze Point is the temperature where the first ice crystals begin to form in the solution.

²The Flow Point is the temperature at which the liquid ceases to flow.

³The Burst point is where the solution becomes solid and can cause the pipe to burst.

Both PG 38 and GL48 are available in 5-gallon pails or 55-gallon drums.

Catalog Number	Description
PG38	
35246	Cryo-tek™ Fire System PG38 – 5 Gallon Pail
35247	Cryo-tek™ Fire System PG38 – 55 Gallon Drum
GL48	
35248	Cryo-tek™ Fire System GL48 – 5 Gallon Pail
35249	Cryo-tek™ Fire System GL48 – 55 Gallon Drum



FBC™ System Compatible indicates that this product has been tested, and is monitored on an ongoing basis, to assure its chemical compatibility with FlowGuard Gold®, BlazeMaster® and Corzan® pipe and fittings. FBC, FlowGuard Gold, BlazeMaster and Corzan are trademarks of The Lubrizol Corporation or its affiliates.



** BlazeMaster® is a registered trademark of Lubrizol.



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CHEMICAL COMPATIBILITY

Cryo-tek Fire System Antifreezes are compatible with the following materials.

- Steel Pipe
- Stainless Steel Piping
- Copper
- Cast Iron
- PEX
- Natural Rubber
- SBR Rubber
- Brass Materials
- Black Steel
- Bronze
- CPVC (GL 48 Only)
- EPDM
- Nitrile Rubber

Do not use on galvanized or aluminum pipe and fittings. Consult Oatey Technical Service (800.321.9532) for materials not listed above. Do not use with boiler treatment chemicals without first consulting with the fire system manufacturer.

Oatey Cryo-tek Fire system antifreezes are made with chemicals that are “Generally Recognized as Safe” by the FDA. These chemicals have low chronic and acute toxicity profile, and when used as an anti-freeze in a fire system, can be considered “Non-Toxic”.

INSTALLATION INSTRUCTIONS

It is recommended that any system, whether new or existing, be thoroughly cleaned prior to being charged with Cryo-tek PG 38 /GL 48 Fire System Freeze Protection.

Prior to installation, Cryo-tek PG 38 /GL 48 should be tested to measure % Glycerin/Propylene Glycol.

MEASURE THE TOTAL CAPACITY OF THE SYSTEM USING ONE OF THE FOLLOWING METHODS:

Direct method

- Fill system completely, making sure all components of system are full.
- Drain out fluid into suitable container and record the number of gallons removed. This is **total system fluid capacity**.

Estimation method

- Determine system pipe sizes and amount of linear footage for each size. Using Table 2 (below), calculate the volume of the system piping.
- Add this number to the gallon capacity of the boiler or equipment in the system to determine the **total system fluid capacity**.

Table 2: Approximate gallons per 100 Feet for Iron and CPVC Pipe

Size	Approximate Gallons/ 100 Feet	
	Schedule 40 Pipe – Iron	CPVC (Blazemaster®)
3/4"	---	3.2
1"	4.8	5.0
1 ¼"	8.3	8.0
1 ½"	11.1	10.5
2"	18.5	16.4
2 ½"	25.0	24.0
3"	38.5	35.5
4"	66.0	---

CHARGING THE SYSTEM

Cryo-tek PG 38 /GL 48 is meant to be used as is. Do not dilute. The entire system should be open to prevent any area of it from being isolated. Add the computed amount of antifreeze

CHECKING THE SYSTEM

After filling, purge the system of air. Follow NFPA guidelines for testing antifreeze. Fluid samples should be tested from a minimum of a high point in the system and a low-point. Measurements should be comparable to each other, as well as the pre installation sample.

TAGGING

NFPA requires a tag to be affixed to the riser indicating the date tested or replaced, the type and concentration by volume of fluid used, system capacity (in volume), contractor name and license number, and a statement indicating if the entire system was drained and replaced with antifreeze.

Tags can be obtained from Oatey Co. or download a tag on the product page on Oatey.com



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MAINTENANCE AND DISPOSAL

NFPA 25 requires that the freezing point of the system should be tested at least once a year. Periodic testing of systems is critical to maintaining the proper concentration and freeze point of the fluid. Leaks, pressure surges, and temperature changes to the system can cause antifreeze to flow out of the system or water to flow into the system changing the freeze temperature.

When using glycerin in metallic pipe, be sure pipe connections are "air-tight." The molecular structure of glycerin will allow the product to seep out of loose connections before water, reducing glycerin concentration levels, and thus, lowering freeze protection.

Disposal of Cryo-tek Fire System Antifreezes should be done in conformance with national, state and local regulations.

ACCESSORIES AND TESTING

Propylene Glycol based Antifreezes can be tested with the Hercules Cryo-Tek Refractometer, or any other refractometer designed to be used with propylene glycol-based solutions.



Glycerin based antifreezes can be tested with a standard refractometer (measures index of refraction) or with a hydrometer.



Refer to the table below to help determine glycerin and propylene glycol concentrations.

Table 3: Index of Refraction and Specific Gravity of Glycerin and Glycol Solution

Concentration	Glycerin (@ 20° C)		Propylene Glycol (@ 22° C)		Freeze Pt (°F)
	Index of Refraction	Specific Gravity	Index of Refraction	Specific Gravity	
32%	1.373	1.078	1.368	1.031	7
34%	1.376	1.083	1.362	1.032	5
36%	1.379	1.089	1.374	1.034	2
38%	1.381	1.094	1.377	1.036	-1
40%	1.384	1.099	1.379	1.038	-5
42%	1.387	1.105	1.381	1.040	-8
44%	1.390	1.110	1.384	1.042	-13
46%	1.392	1.116	1.386	1.044	-17
48%	1.395	1.121	1.388	1.046	-22
50%	1.398	1.126	1.390	1.048	-27



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