GLYCERIN 48%
ANTIFREEZE SOLUTION

Safe and Effective Antifreeze Solution
Designed For Use in Wet Fire Sprinkler Systems

The primary goal of the FBC System Compatible Program is to enhance customer confidence by eliminating the guesswork associated with chemical compatibility.

FBC™
SYSTEM COMPATIBLE

FEATURES & BENEFITS OF GLYCERIN 48%

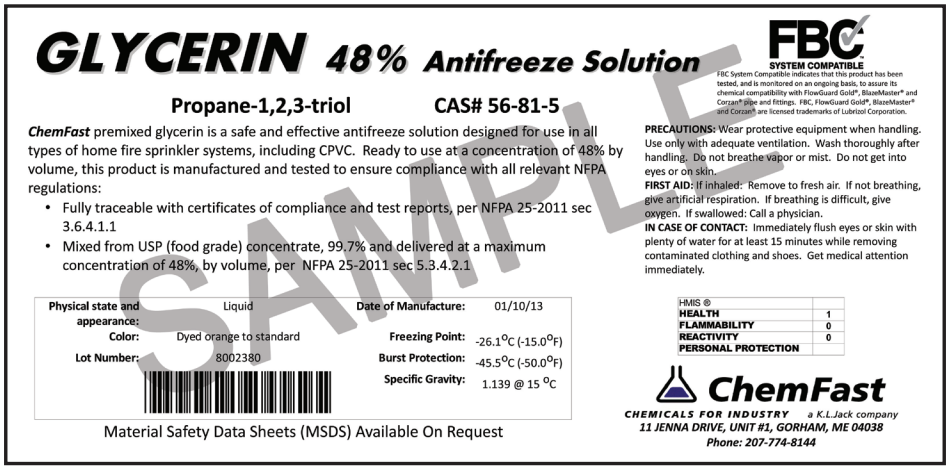
- Fully lot traceable material with certification of compliance to NFPA standards and manufacturing test reports available upon request
- Manufactured using food grade (USP) Glycerine concentrate, 99.7% and provided at a 48% maximum concentration by volume. Meets NFPA 25-2011, Sec 5.3.4.2.1
- Non-toxic and classified as Generally Regarded As Safe (G.R.A.S.) by the FDA
- Dyed orange in color for easy field identification by end user
- Provided in the correct ready to use pre-mixed 48% Glycerine concentration, removing concerns about field mixing of material, which is no longer allowed under NFPA regulations
- FBC System Compatible certified for use with Lubrizol's FlowGuard Gold®, BlazeMaster® and Corzan® piping and fittings systems

ABOUT GLYCERIN 48%

Glycerin 48% Antifreeze Solution is a safe and effective antifreeze solution designed for use in wet fire sprinkler systems, including CPVC. Our product begins as United States Pharmacopeia[1] (USP) grade glycerin concentrate that is 99.7% pure. It is mixed to final concentration of 48% by volume, and tested to ensure compliance with all relevant NFPA regulations.

Available Sizes:

- 5 Gallon Pail
- 55 Gallon Drum
- 250 Gallon Totes



FBC System Compatible indicates that this product has been tested, and is monitored on an ongoing basis, to assure it is chemical compatibility with FlowGuard Gold®, BlazeMaster® and Corzan® pipe and fittings. FBC, FlowGuard Gold®, BlazeMaster® and Corzan® are licensed trademarks of The Lubrizol Corporation.Visit http://www.lubrizol.com/BuildingSolutions/SystemCompatibleProgram.html for more information.

[1] The United States Pharmacopeial Convention (USP) is a scientific nonprofit organization that sets standards for the quality, purity, identity, and strength of medicines, food ingredients, and dietary supplements manufactured, distributed and consumed worldwide. USP's drug standards are enforceable in the United States by the Food and Drug Administration, and these standards are developed and relied upon in more than 130 countries.

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Active ingredient:	Glycerin, USP grade (propane-1,2,3-triol, CAS# 56-81-5)
Physical state and appearance:	Liquid
Odor:	Not available
Taste:	Sweet
Color:	Orange, dyed to standard
pH (1% soln/water):	Neutral
Solubility:	Easily miscible (soluble) in cold water, hot water.
Percent by volume:	48% (max)
Specific Gravity:	1.139 @ 15°C (59°F)
Freeze Point (calculated):	-26°C (-15°F)
Burst Point:	-45°C (-50°F)

THINGS TO KNOW ABOUT GLYCERIN 48%

In protecting a sprinkler system against damage from exposure to low temperatures, three important points should be considered:

- The freezing point is the temperature at which permanent ice crystals are formed
- The pour point (or flow point) is the lowest temperature at which the solution will continue to flow as a liquid
- The burst point is the lowest temperature that the system can be exposed to before damage is caused by expansion of the frozen solution

As an antifreeze/water solution cools to its freezing point, ice crystals begin to form. However, the remaining liquid solution will have a higher concentration of antifreeze allowing the mixture to flow as a liquid. As the temperature cools below the pour point, the mixture can no longer flow into expansion volumes, and begins to put pressure on the system. When the temperature reaches the burst point, the expanding mixture will solidify and potentially damage pipes and fittings. When selecting an antifreeze, choose a concentration that offers protection to a temperature 3°C (5°F) *below* the lowest expected ambient temperature.

Chemfast recommends using a Digital Refractometer or NIST Certified Hydrometer to test the concentration and freezing point of Glycerin antifreeze solutions.

INSTALLATION OF GLYCERIN 48%

- Follow NFPA requirements at all times regarding the installation, testing and maintenance of antifreeze solution.
- Systems should be flushed and all water evacuated. Always follow NFPA requirements regarding the draining of pipe drops.
- Test freezing point of the antifreeze solution before it is introduced to the system. Glycerin Antifreeze 48% is ready-to-use; **do not dilute or add concentrate**.
- After filling the system, test the freezing point of samples from the high and low points of the system. Confirm that the freezing point of each sample is comparable to the freezing point of the solution tested prior to installation. Note that residual water in the system or from undrained drops may alter the test results.
- Affix tag to the riser pipe indicating:
  1. The date the solution was tested or replaced, the type and concentration (by volume) used
  2. The name and license number of the contractor testing and/or replacing
  3. A statement indicating if the entire system was drained and replaced with antifreeze
  4. A warning to test the concentration of antifreeze solutions at yearly intervals per NFPA requirements

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