FAQs

freezemaster™ ANTIFREEZE

PRODUCT LISTINGS

Q: Is freezemaster™ antifreeze listed?

A: Yes. freezemaster™ antifreeze passed all tests in the UL 2901 test protocol, receiving a UL certification and deeming it safe for use in fire sprinkler systems using the proper procedures specified in the product Installation Guide.

Q: For what applications is freezemaster™ antifreeze listed and are there volume restrictions?

A: Fire sprinkler systems utilizing freezemaster™ antifreeze shall meet the system size limitations as follows:

Designation	Use Temp Range	Application	Max Volume of Antifreeze in Sprinkler System
Antifreeze	-12°F to 150°F (-24°C to 66°C)	NFPA 13D [1]	≤500 gal; in accordance with NFPA 13D design criteria
		NFPA 13R – Residential Only (including corridors, garages that serve only a single dwelling unit, and compartmented Ordinary Hazard areas ≤500 sq ft) [1] Where NFPA 13R requires the use of NFPA 13 design criteria, refer to the NFPA 13 applications and volume limitations.	≤500 gal; in accordance with NFPA 13R design criteria Where NFPA 13 design criteria is required in areas of an NFPA 13R Occupancy, such as an attic, use the applicable volume limitation for the hazard area for NFPA 13.
		NFPA 13 - Light Hazard [1]	≤200 gal; in accordance with NFPA 13 design criteria or >200 gal to ≤500 gal; in accordance with NFPA 13 using the dry system hydraulic design criteria, where the system hydraulics are designed as a dry system even though the system is filled with antifreeze.
		NFPA 13 – Ordinary Hazard Groups 1 & 2 [1]	≤40 gal; in accordance with NFPA 13 design criteria or >40 gal to ≤375 gal; in accordance with NFPA 13 using the dry system hydraulic design criteria, where the system hydraulics are designed as a dry system even though the system is filled with antifreeze.
		NFPA 13 – Storage [1]	≤40 gal; in accordance with NFPA 13 design criteria

[1]The antifreeze solution is intended to be installed in accordance with the manufacturer's instructions. For all systems, the following requirements shall apply: (a) the use of the antifreeze solution is limited to the aboveground system piping only except for a limited length of underground piping that connects sections of the aboveground system, (b) the viscosity of the antifreeze solution at the lowest anticipated temperature of the system shall be considered in the hydraulic design, (c) the friction loss shall be determined using the Hazen-Williams formula for water and the Darcy-Weisbach formula to account for the antifreeze solution fluid properties, and (d) the K-factor of the sprinkler shall be adjusted to account for the density of the antifreeze.

Q: Can I still use freezemaster™ antifreeze in an existing antifreeze system that is light hazard and over 500 gallons, ordinary hazard 1 or 2 and over 375 gallons, or storage and over 40 gallons?

A: Yes, you can split the existing system into several unique systems without using the dry system hydraulic design criteria as long as each system's volume does not exceed 500 gallons in light hazard occupancies, 375 gallons in ordinary hazard 1 and 2 occupancies, and 40 gallons in storage occupancies.

Q: Does freezemaster™ antifreeze comply with NFPA requirements for antifreeze systems?

A: Yes. freezemaster™ antifreeze meets NFPA 25, 13, 13R and 13D requirements for new fire sprinkler systems now and all existing systems by September 30, 2022.

Q: What is the benefit of using a listed antifreeze in advance of NFPA's deadline?

A: The deadline is the date the conversion must be completed, not started. Contractors can help clients budget for this transition by having more time to complete the conversion.

As freezemaster™ antifreeze is listed, you can be assured that it is safer than existing products and will not contribute to fire growth.

Q: Is freezemaster™ antifreeze listed for use with CPVC systems?

A: Yes. freezemaster™ antifreeze is listed for use with CPVC fire sprinkler systems and, as such, is compatible with all the piping material included in the listing test. Check the Installation Guide for more information.

Q: Is freezemaster™ antifreeze listed for use with steel pipe systems?

A: Yes. freezemaster™ antifreeze is listed for use with steel pipe fire sprinkler systems.

Q: Is freezemaster™ antifreeze listed for use with galvanized pipe systems?

A: Yes. freezemaster™ antifreeze is listed for use with galvanized steel piping. LFP® Antifreeze is not.

☐ PRODUCT ATTRIBUTES

Q: What are the ingredients of freezemaster™ antifreeze?

A: freezemaster™ antifreeze is a specially listed, proprietary formulation versus standard Glycerine and Propylene Glycol formulations. Refer to the product Installation Guide and Safety Data Sheet for more information. Note that freezemaster™ antifreeze is compatible with CPVC.

Q: Why is freezemaster™ antifreeze colored blue?

A: freezemaster™ antifreeze is dyed blue for easy identification of a fully flushed and filled system, saving the installer from having to constantly test a clear fluid.

Q: What is the minimum use temperature of freezemaster™ antifreeze?

A: The minimum use temperature is -12°F (-24.4°C). The minimum use temperature is the lowest usable temperature as provided by UL, including a safety factor for outside influences.

Q: What is the freeze point of freezemaster™ antifreeze?

A: The freeze point is -15°F (-26.1°C). The freeze point is the temperature at which ice crystals begin to form.

Q: What is the difference between freeze point and minimum use?

A: Freeze point is the temperature at which the material begins to freeze. Minimum use is the temperature used to describe the lowest usable temperature as provided by UL, including a small safety factor for outside influences.

Q: What happens if the temperature goes beyond the freeze point?

A: The solution will begin to freeze and could limit the operational ability of the fire sprinkler system. If the solution freezes and the system is not damaged the solution will regain its properties and function normally once the temperature warms up past the freeze point.

Q: What is the burst point of freezemaster™ antifreeze?

A: The burst point is -58°F (-50°C). This is the temperature at which the solution freezes solid and expansion could burst the vessel. Note that the system has not been functional for some time if the solution reaches the burst point.

Q: What is the pour point of freezemaster™ antifreeze?

A: The pour point is -22.4°F (-30.2°C). This is the lowest temperature freezemaster™ antifreeze will flow / remain pourable.

☐ PRODUCT PERFORMANCE

Q: What effect does freezemaster™ antifreeze have on corrosion?

A: freezemaster™ antifreeze meets the corrosion requirements of UL 2901 and includes a corrosion inhibitor package unlike any other product on the market, effectively reducing pipe corrosion by up to 65 percent. Building on its extensive expertise in metallurgy, Lubrizol performed a series of corrosion tests in addition to those required by UL that demonstrated the superior anti-corrosion performance of freezemaster™ antifreeze. The extra protection covers both typical corrosion and a particular form that has been plaguing the fire sprinkler industry known as microbiologically influenced corrosion, or MIC.

Q: What is IP287 and why was it modified in freezemaster™ antifreeze corrosion testing?

A: IP287 is an Institute of Petroleum standard test method for water-based metalworking fluids. Metalworking fluids are used in varying concentrations. Since freezemaster™ antifreeze is used as a premix, it was tested as is and then at a 5 percent dilution to replicate some level of water left in the system.

Q: How is IP287 conducted?

A: Iron chips are saturated with the fluid and left undisturbed for two hours. Percent rust is then calculated.

Q: How do the IP287 test results apply to fire suppression systems?

A: They are relevant to the corrosion discussion by taking advantage of a higher surface area to accelerate corrosion. Any metal fillings in the fire suppression system will corrode, leaving sediment that can lead to clogged spray nozzles.

Q: Does freezemaster™ antifreeze address the prior life safety issues associated with antifreeze use?

A: Absolutely. freezemaster™ antifreeze meets UL 1821, which was specifically designed to address all safety concerns and was developed over many years of comprehensive research and testing.

Q: How does freezemaster™ antifreeze compare to the UL-listed alternative?

A: While the other UL-listed alternative is clear, freezemaster™ antifreeze is colored blue so contractors are able to see the material as it exits the vents and drains when flushing and filling systems during the fill process. Additionally, freezemaster™ antifreeze has corrosion resistant properties that outperform its competitors and, unlike the other UL-listed alternative, is permitted for use in galvanized piping systems.

☐ PRODUCT INSTALLATION, TESTING AND MAINTENANCE

Q: What do I have to do when switching an existing system from an unlisted antifreeze to freezemaster™ antifreeze?

A: When switching out an antifreeze in the system, flush the system thoroughly and ensure all water is drained before filling it with freezemaster™ antifreeze per the Installation Guide instructions.

Q: Can freezemaster™ antifreeze be mixed with another antifreeze?

A: No. freezemaster™ antifreeze is a UL-listed premixed product and is not to be combined or diluted as per NFPA 13, UL and ULC.

Q: How do you test freezemaster™ antifreeze to make sure it's still acceptable for use?

A: Test freezemaster™ antifreeze using a recommended refractometer or hydrometer as referenced in the Installation Guide.

Recommended instruments for testing freezemaster™ antifreeze for installation or maintenance can be purchases through

Fisher Scientific

Hydrometer	13202421
Graduated Cylinder	115822
Thermometer	13201647
Refractometer	12561346

Reichert Technologies

Refractometer	13940000

Q: Do I have to install an expansion tank for use with freezemaster™ antifreeze?

A: Just like LFP® Antifreeze, we highly recommend installing an expansion tank on a freezemaster™ antifreeze system. It prevents water intrusion into the system, which could potentially damage the system or alter performance. Fire-X-Trol® and FPPI® expansion tanks are available through Viking® SupplyNET. If you'd prefer not to install an expansion tank, it is critical that thermal expansion is considered in your system design. Reference NFPA 13 for alternatives.

Q: What special equipment is needed to install and maintain a freezemaster™ antifreeze system?

A: A hand or electric pump that has materials compatible with freezemaster™ antifreeze and the fire sprinkler system it is being installed in is needed. If the system is piped with CPVC, ensure any hoses used are chemically compatible with the CPVC. Avoid the use of contaminated hoses and equipment that have come into contact with fluids other than freezemaster™ antifreeze.

Q: What type of refractometer is required to test product and system levels of freezemaster™ antifreeze?

A: A manual or electronic chemical refractometer (not a food and beverage version) is required.

Recommended refractometers for use with freezemaster™ antifreeze:
Fischer Scientific..... 12561346
Reichert Technologies 13940000

Q: Can freezemaster™ antifreeze be diluted with water?

A: No. Do not dilute or add concentrate to freezemaster™ antifreeze. Any dilution or addition of other fluids will change the properties of freezemaster™ antifreeze and make it unusable. This is a UL-listed premixed product and is not to be combined or diluted as per NFPA 13, UL and ULC.

Q: What does a building owner need to know about freezemaster™ antifreeze in their fire sprinkler system?

A: Once freezemaster™ antifreeze is installed, building owners should know that their system now meets the requirements of NFPA 25 as required for 2022, and that the system must be tested annually by a qualified inspector to ensure the freeze point is being maintained.

Q: How often does freezemaster™ antifreeze need to be replaced in a system?

A: freezemaster™ antifreeze must be tested annually as per NFPA 25 and must maintain its freeze protection or be replaced.

Q: How do I dispose of freezemaster™ antifreeze?

A: Refer to the freezemaster™ antifreeze Safety Data Sheet and contact local authorities for proper disposal.

Q: Where can I get additional freezemaster™ antifreeze inspection hang tags?

A: Lubrizol provides several hang tags on each bucket, barrel, and tote of freezemaster™ antifreeze. If you are in need of more, you can print your own from www.freezemaster.com under the "Resources" tab or contact your local Viking® SupplyNET representative.

☐ PRODUCT AVAILABILITY

Q: Where can I buy freezemaster™ antifreeze?

A: freezemaster™ antifreeze is available through Viking® SupplyNET.

Q: Is freezemaster™ antifreeze for sale in Canada?

A: Yes. Through Viking® SupplyNET and SCS.

Q: I am a distributor that is interesting in selling freezemaster™ antifreeze. Who should I contact?

A: freezemaster™ antifreeze is sold exclusively through Viking® SupplyNET. All sales and distribution inquiries should be sent to your local Viking® SupplyNET representative.

Q: What packaging sizes does freezemaster™ antifreeze come in?

A: freezemaster™ antifreeze is available from Viking® SupplyNET in:

- 5-gallon pails
- 55-gallon drums
- 275-gallon totes

Q: Who is the manufacturer of freezemaster™ antifreeze?

A: freezemaster™ antifreeze is engineered and manufactured by Lubrizol Advanced Materials, a specialty chemical company with more than 30 years of fire safety expertise.

Q: Where is freezemaster™ antifreeze manufactured?

A: freezemaster™ antifreeze is manufactured at a Lubrizol Corporation plant in Avon, Ohio, USA.

PRODUCT STORAGE & TRANSPORTATION

Q: What is the shelf life of freezemaster™ antifreeze?

A: freezemaster™ antifreeze has a shelf life of two years. This allows for leftover inventory to be used next season and provides flexibility in maintenance planning.

Q: What is the recommended storage temperature for freezemaster™ antifreeze?

A: freezemaster™ antifreeze should be stored in its original container and at a temperature between 30°F (-1.1°C) minimum and 100°F (37.7°C) maximum. The listed alternative can be stored between 40°F (4.4°C) minimum and 90°F (32.2°C) maximum.

Q: What happens if freezemaster™ antifreeze is stored above the recommended temperature?

A: If stored above its recommended temperature, freezemaster™ antifreeze may slightly discolor due to exposure to higher temperatures and sunlight; however, this will not affect the performance of the solution.

Q: What happens if freezemaster™ antifreeze is stored below the recommended temperature?

A: If stored below its recommended temperature, freezemaster™ antifreeze should be returned to room temperature before attempting to install it in a system.

Q: Is freezemaster™ antifreeze classified as a non-hazardous solution?

A: Yes. freezemaster™ antifreeze is classified as a non-hazardous solution under U.S. and Canadian GHS classification and labeling rules. In addition, freezemaster™ antifreeze is classified as a non-hazardous solution per U.S. and Canadian HAZMAT requirements.

Q: Are there minimum order quantities for freezemaster™ antifreeze? Are single pails available to contractors?

A: There are no minimum order quantities for freezemaster™ antifreeze. Single pails are available for purchase by contractors. Contact Viking® SupplyNET for more information.

UL CERTIFIED SAFETY

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