

## SUMMARY OF INFORMATION FOR FOAM STORAGE, INSPECTION AND TESTING FOR SOLBERG® MIL-SPEC 3% SFFF CONCENTRATES

### PRODUCT SHELF LIFE

Perimeter Solutions foam concentrates are specially formulated to ensure exceptional storage stability as well as firefighting performance. The recommended storage temperature range for SOLBERG 3% MIL-SPEC SFFF is 35°F - 120°F (1.6°C to 49°C), preferably in the original containers. The SOLBERG 3% MIL-SPEC SFFF is compatible with multiple construction materials found in firefighting equipment. When stored in original containers, or in tanks designed for foam storage with manufacturer-recommended equipment and within the specified temperature range, a shelf-life of at least 10 years is expected. (Shelf life studies are ongoing to ensure quality and further storage longevity). The shelf life of any foam concentrate is maximized by proper storage conditions and maintenance. Factors affecting shelf life are wide temperature fluctuation, evaporation, dilution, and contamination by foreign materials.

### STORAGE RECOMMENDATIONS

All foam concentrates should preferably be stored in their original containers. All concentrates should be stored at recommended temperatures as stated on the appropriate data sheets. It is desirable that the foam concentrate is not exposed to direct sunlight to reduce the extremes of temperature to which the product

is exposed. The containers should be regularly inspected to verify their condition. In the unlikely event of leakage, the foam should be decanted into another clean drum, sealed, and tested to ensure it is still in satisfactory condition. Foam concentrates in storage should not be mixed with other foam concentrates without checking compatibility.

Foam concentrates are suitable for transferring into bulk storage tanks for long-term storage. When stored in storage tanks, it is important that the tank is constructed correctly and maintained in good condition. Storage tanks should be of stainless steel, epoxy tanks (glass-reinforced plastic/fiberglass with epoxy resin), or HDPE, preferably. The use of iron or copper alloy materials should be avoided, where possible. For fixed systems foam storage, then glass composites, carbon steel are preferred – usually where a nitrogen blanketing system or vacuum pressure vent/expansion dome is used - and aluminum is also usually acceptable. Tanks and/or storage containers should be made from opaque, UV protective materials to reduce ultraviolet exposure that can impact shelf life. Ensure the tank is clean and dry prior to filling. The storage tank design should be that of a sealed tank to prevent free air flow through the tank and minimize air contact with the concentrate.

Consideration should be given to the use of a pressure vacuum vent to allow entry of air during operation, but not when standing idle, as well as to include an expansion dome to minimize the surface area exposed to air. These steps help to maximize the concentrate storage life and protect your investment.

To maximize the usage/storage life of fluorine-free foams and reduce impact on fire performance, Perimeter Solutions additionally recommends the use of mineral oil to create a seal on top of the foam concentrate in fixed atmospheric tanks.

- The appropriate grade mineral oil (Specific Gravity > 0.84) should be applied gently to the foam concentrate surface at a depth of 1/8 up to 1/2 inch (4 mm to 13 mm) across the full surface.
- The use of mineral oil in movable tanks (such as fire trucks or portable foam tanks/tankers) should be avoided.

If Intermediate Bulk Containers (IBC)/Totes are used for permanent storage, consideration should be given to the use of mineral oil on the concentrate surface and/or installing pressure/vacuum vent valves to minimize mass transfer of vapor in and out. This should be done after transport to the final location.

### FOAM STORAGE GUIDELINES FOR SOLBERG MIL-SPEC 3% SFFF FLUORINE-FREE CONCENTRATE

The SOLBERG 3% MIL-SPEC SFFF foam concentrate is suitable for transferring into enclosed foam storage tanks for longer-term storage - these tanks should normally be kept full, sealed/fully enclosed with vacuum/venting. The foam concentrate stored in these tanks would be subject to evaporation, which accelerates when exposed to air and significant temperature fluctuations. These external factors, as well as the potential ingress of foreign materials, will have an impact on the shelf life of any foam concentrate if the foam tank is not correctly maintained.

### SUMMARY OF STORAGE GUIDANCE FOR SOLBERG MIL-SPEC 3% SFFF :

- Should be stored between 35°F to 120°F (1.6°C to 49°C) as per technical datasheet
- The foam should preferably be stored in the original containers.
- Foam concentrates are suitable for transferring into enclosed foam storage tanks for long-term storage, but these should normally be kept full, with space allowed for expansion, vacuum/venting and to reduce evaporation.

- These bulk storage tanks should be stainless steel, epoxy tanks (glass-reinforced plastic/fiberglass with epoxy resin), HDPE, or Polyethylene. Additionally, for fixed systems - glass composites, carbon steel are preferable (usually with a nitrogen blanketing system or vacuum pressure vent), and aluminum would also be acceptable.
- Appropriate grade mineral oil (Specific Gravity >0.84) applied gently at a depth of 1/8 up to 1/2 inch (4 mm to 13 mm) across the foam surface is acceptable when stored in fixed tanks.
- Do not mix with other foam concentrates without consultation with Perimeter Solutions.
- A shelf-life of at least ten years can be expected if stored properly according to these recommendations.
- Per NFPA 11 foam concentrates should be tested annually to confirm that physical/chemical properties are within specification.
- When taking samples for testing, it's important to avoid collecting any mineral oil with the foam concentrate, if this has been used in storage.

### INSPECTION OF FOAM CONCENTRATES

Perimeter Solutions recommends that foam concentrates should be tested annually as set out in the National Fire Protection Association (NFPA 11) and EN-13565-2 standards, especially once stored within a foam tank. A sample of the foam concentrate should be sent to the manufacturer or a qualified third-party lab to confirm the physical properties and foam quality meet the specifications of the foam as originally supplied in line with the requirements of NFPA 11 and EN-13565-2.



For more information, contact any of our worldwide Perimeter Solutions Fire Safety offices or visit [www.perimeter-solutions.com](http://www.perimeter-solutions.com)

**SOLBERG COMPANY LLC**  
1520 Brookfield Avenue  
Green Bay, WI 54313  
+1 920 593 9445

**AUXQUIMIA**  
A Division of Perimeter Solutions  
Poligono Ind, Baiña, Parcela 23  
33682 Nueres (Asturias)  
+34 985 24 29 45/46

**SOLBERG ASIA PACIFIC PTY LTD**  
A Division of Perimeter Solutions  
3 Charles Street  
St. Marys NSW 2760  
Australia  
+61 2 9673 5300