

Product Name	T-STORM NFF 3x3 UL201
Description	3% x 3% Non-Fluorinated Foam Concentrate
Manufacturer	Johnson Controls - Williams Fire & Hazard Control
Revision	1.1/2024



ASK ABOUT THE PRODUCT

1. Features

- Proportioning rate: **3%**
- Non-Fluorinated Composition
- EN 1568:2018 – part 3 and part 4**
- Fire performance of the foam concentrate:**
 - low expansion according to EN 1568-3 (3%)**
simulated water: fresh/sea **IA / IA**
 - low expansion according to EN 1568-4 (3%)**
simulated water: fresh/sea (acetone) **IA / IA**
simulated water: fresh/sea (isopropanol) **IB / IA**
- Designed in accordance with NFPA Standard 11 for Low-, Medium-, and High-Expansion Foam
- UL 162 listed as a synthetic alcohol resistant foam concentrate for use on hydrocarbon and polar solvent fuel fires
- Passes UL 162 type III test protocol on hydrocarbons at the same design application rate (0.10 gpm/ft² (4.1 Lpm/m²)) as traditional AR-AFFF products with similar control times
 - Recommended for use at 0.10 gpm/ft² (4.1 Lpm/m²) for spill fire applications
- Effective control and suppression on hydrocarbon fuels
- Superior drain time compared to a high-quality AR-AFFF, with a longer lasting foam blanket for better burnback resistance and post-fire suppression
- EN1568:2018 – Parts 3 and 4
- GreenScreen Certified™ Silver firefighting foam concentrate.

2. Description

T-STORM NFF 3x3 UL201 is a 3%x3% Alcohol Resistant Non-Fluorinated Foam Concentrate that provides excellent fire and vapor suppression for Class B, polar solvent and hydrocarbon fuel fires. This synthetic foam concentrate is intended for forceful or gentle firefighting applications at 3% solution on hydrocarbon fuels and gentle firefighting applications at 3% solution on polar solvent fuels.

T-STORM NFF 3x3 UL201 foam solution utilizes three suppression mechanisms intended for rapid fire knock-down and superior burnback resistance:

- The foam blanket has extended drain times to help block oxygen to the fuel and suppress fuel vapor.

- On polar solvent fires, liquid drains from the foam blanket and forms a polymeric membrane which protects the foam from destruction by the polar fuel, suppresses vapors, and seals the fuel surface.
- The water content of the foam solution produces a cooling effect for additional fire suppression.

T-STORM NFF 3x3 UL201 concentrate is a non-fluorinated firefighting foam concentrate, meaning that it does not have any intentionally added PFAS chemistry and is produced in equipment that has not handled PFAS chemistry.

T-STORM NFF 3x3 UL201 concentrate thus complies with Directives (EU) 2017/1000 on PFOA and 2019/1021 (EU POPs directive).

3. Typical Physiochemical Properties

T-STORM NFF 3x3 UL201	
Proportioning Rate	3%
Appearance	Viscous yellow liquid
Density	1.04 ± 0.02 g/ml
pH	7.0 – 8.0
Refractive Index	min. 1.365
Viscosity*	1790 ± 250 cPs at 60 rpm
Viscosity*	2900 ± 500 cPs at 30 rpm
Freezing point**	-4 °C
Storage and Operating Range	+2 °C to +49 °C (35 °F to 120 °F)

* Brookfield Viscometer Spindle #4

** EN 1568:2018 protocol

T-STORM NFF 3x3 UL201 Foam Concentrate is a non-Newtonian fluid that is both pseudoplastic and thixotropic. Due to these properties, dynamic viscosity will decrease as shear increases.

4. Application

T-STORM NFF 3x3 UL201 Foam Concentrate is intended for use on both types of Class B fires: hydrocarbon fuels with low water solubility, such as crude oils, gasolines, diesel fuels, and aviation fuels; and polar solvent fuels with appreciable water solubility, such as methyl and ethyl alcohol, acetone, and methyl ethyl ketone. The concentrate has excellent wetting properties that can effectively combat

Class A fires. It may also be used in conjunction with dry chemical agents to provide even greater fire suppression performance.

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T-STORM® NFF 3x3 UL201 Foam Concentrate is well-suited for use in applications such as municipal and industrial response for spill and limited scale Type III hazards as well as foam systems with Type II discharge devices. Examples of these applications include:

- Industrial chemical and petroleum processing facilities
- Truck/rail loading and unloading facilities
- Flammable liquid containment areas
- Mobile equipment

Fuel Group	Concen- tration	Minimum Recommen- ded Application Rate	
		Lpm/m²	Gpm/ft²
Type III Application¹ – UL Listed			
Hydrocarbons	3%	6,5	0,16
E15	3%	6,9	0,17
Type III Application² – Third Party Witnessed			
Hydrocarbons	3%	4,1	0,10
Premium Gasoline	3%	6,5	0,16
Type II Application³ – UL Listed			
Hydrocarbons	3%	4,1	0,10
Alcohols	3%	6,9	0,17
Ethanol (EtOH)	3%	4,1	0,10
Ketones	3%	6,9	0,17
E85	3%	6,1	0,15

1- TYPE III DISCHARGE OUTLET – A device that delivers the foam directly onto the burning liquid as described in UL 162.

2 - NFPA 11 allows a design rate of 0.10 gpm/ft² (4.1 Lpm/m²) for spill fire applications. This product has been tested in accordance with UL 162 for use at this application rate.

3 - TYPE II DISCHARGE OUTLET – A device that delivers foam onto the burning liquid and partially submerges the foam or produces restricted agitation of the surface as described in UL 162.

5. Foaming Properties

SKUM NFF 3x3 UL201 Foam Concentrate may be effectively applied using most conventional foam discharge equipment at the correct dilution with fresh, salt, or hard water.

Typical Foam Characteristics*		
Water	Fresh	Salt
Proportioning Rate	3%	3%
Expansion Ratio	≥8,17:1	≥5,98:1
25% Drain Time (min:sec)	≥40:15	≥32:19
50% Drain Time (min:sec)	≥55:45	≥46:13

* per EN 1568-3 protocol

6. Proportioning

The recommended operational temperature range for **T-STORM NFF 3x3 UL201** Foam Concentrate is: 35 °F to 120 °F (2 °C to 49 °C) per UL 162.

This foam concentrate can be correctly proportioned using most conventional, properly calibrated, in-line proportioning equipment such as:

- Balanced and in-line balanced pressure pump proportioners

- Balanced pressure bladder tanks and ratio flow controllers
- Around-the-pump type proportioners
- Fixed or portable in-line venturi type proportioners
- Handline nozzles with fixed eductor/pick-up tubes

7. Storage and Handling

T-STORM NFF 3x3 UL201 Foam Concentrate should be stored in the original supplied package (HDPE totes, drums, or pails) or in the recommended foam system equipment. The concentrate should be maintained within the recommended operational temperature range.

Freezing of the product should be avoided, and in case of freezing, a sample should be sent to FOAMAX to determine the physicochemical properties and performance parameters of the concentrate. Once the concentrate is frozen, the manufacturer does not guarantee the maintenance of the declared performance parameters.

This product should not be mixed with other types of foam concentrates or other manufacturer's foam concentrates under any circumstances. The use of multiple, separately applied finished foam products for incident response is appropriate.

8. Certificates, Approvals

- **Certificate of Admittance CNBOP no. 4886/2023**
- **PZH Attestation no. F.FT.60114.018.2023**
- **GreenScreen Silver™**
- **EN 1568:2018 - 3, 4**
- **UL201**



9. Inspection

T-STORM NFF 3x3 UL201 Foam Concentrate should be inspected periodically in accordance with:

- NFPA 11,
- EN 13565-2, or other relevant standard.

A representative concentrate sample should be sent to **FOAMAX**, which is the exclusive distributor of equipment WILLIAMS F&HC brand in Poland.

An annual inspection and sample analysis is typically sufficient, unless the product has been exposed to unusual conditions.

10. Ordering Information

Description	Part No.	Weight
19 L (5 gal)	453242	20,4 kg
208 L (55 gal)	453244	224,5 kg
1003 L (265 gal)	453246	1117 kg