

FOMTEC ENVIRO ARK

Fluorine Free Foam concentrate



Fomtec

ENVIRO ARK

Fomtec Enviro ARK is a novel multi-purpose alcohol resistant firefighting foam concentrate totally free from fluorinated surfactants and polymers. The unique formulation of Fomtec Enviro ARK enables the foam to rapidly cover burning surfaces and gain control and extinguish the fire. As a result, it is effective against both hydrocarbon fires and polar solvents fuel fires.

- New Generation alcohol resistant fluorine free foam
- Approved with sprinklers FM 51 30, and type II and III discharge devices to UL 162 and FM 51 30
- Excellent fire performance on Heptane, Acetone, and IPA.
- For Class A & B fires



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DESCRIPTION

The fire suppression mechanism of Fomtec Enviro ARK utilises the ability of the foam blanket to block oxygen supply to the fuel whilst at the same time the high-water content cools the fuel surface thus reducing the evaporation of flammable vapours. Additionally, the foam blanket prevents the reignition of an extinguished fuel surface. When applied on polar solvents, a polymeric membrane is formed and makes it possible for the foam blanket to extinguish effectively.

When used with seawater Fomtec Enviro ARK has been tested and approved for use at 6%.

Fomtec Enviro ARK is specially designed and tested to be an effective fluorine-free alternative for sprinkler systems, type II and III discharge devices.

Fomtec Enviro ARK can be used at 3% with fresh water for low and medium expansion discharge devices. For type II, type III discharge devices and sprinkler systems it can be used at 3% proportioning. When used at 6% proportioning, it will have higher performance on polar solvents enabling lower application rates with type II and III devices.

For use on class A type fires induction ratio of 0.3-1% is recommended depending on application and discharge device.

APPLICATION

Fomtec Enviro ARK is intended for use on class B hydrocarbon fuel fires such as Oil, Diesel and Gasoline as well as polar solvents such as IPA, Acetone, Ethanol, and Methanol.

Fomtec Enviro ARK is suitable for use on class A fires such as wood, paper, textiles etc.

Fomtec Enviro ARK is especially suited whenever a fluorine-free alternative with high fire performance is required.

Fomtec Enviro ARK is tested and approved for use with non-aspirated sprinklers, or in systems designed for use with the product based on recommended minimum application rates, application duration and the specific discharge devices.

Suitable for mobile firefighting by use of aspirating foam discharge devices such as low and medium expansion foam branch pipes and monitors, where application rates and technique can be adjusted to the specifics of each incident.

SPRINKLER APPLICATION

Sprinkler applications are especially challenging for any foam due to the low operating pressure and the very low expansion reached. Applying foam through a sprinkler is a forceful application method and requires foam that can handle direct application and partial submersion into the fuel without losing its fire performance and burnback resistance. Foams that shall be regarded as suitable for sprinkler applications shall also be able to withstand limited time of water deluge directly onto the foam blanket and still maintain the burnback properties. Fomtec Enviro ARK

has passed above described tests showing very good extinguishing and burnback properties. Refer to the FM Approval Guide for acceptable system configurations used with this concentrate and specific sprinkler SINs and their associated minimum application densities.

FIRE PERFORMANCE & FOAMING

The fire performance of this product has been measured and documented according to "Performance Tests" stated in this document. The design parameters depend on the type of system and application. The use of the product should follow the design guidelines. The foaming properties are depending on the equipment used and other variables such as water and ambient temperatures. Average expansion 8:1, average ¼ drainage time 17:00 minutes using UNI 86 test nozzle.

EQUIPMENT

Fomtec Enviro ARK can easily be proportioned at the correct dilution using conventional proportioning equipment. The equipment should be designed to the foam type.

Fomtec Enviro ARK should be used with the sprinklers it has been tested with as well as with discharge devices having expansion ratio and drainage time within tolerances of foam properties used in fire tests made with the product according to UL 162 and or FM 5130 standards.

COMPATIBILITY

Fomtec Enviro ARK can be used together with foam compatible powders and other expanded foams.

Fomtec Enviro ARK concentrate should not be mixed with other foam concentrates.

For material compatibility please refer to Fomtec Technical Advices FTA 20 addressing the topic.

| TECHNICAL DATA | |
|---------------------------------|---------------------------|
| Appearance | Clear to yellowish liquid |
| Specific gravity at 20°C | 1.013 ± 0.01 g/ml |
| Viscosity | Pseudoplastic* |
| Surface tension | ≤ 19 mN/m |
| pH | 6.5 – 8.5 |
| Freezing point | -4°C |
| Recommended storage temperature | 0°C to 55°C |
| Suspended sediment (v/v) | Less than 0.2% |

*) See detailed viscosity data below

ENVIRONMENTAL

Fomtec Enviro ARK is formulated using raw materials specially selected for their fire performance and their environmental profile.

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The product contains no intentionally added fluorinated surfactants, polymers, and other organohalogens. Fomtec Enviro ARK is biodegradable and contains no PFOS nor PFOA. The handling of spills of concentrate or foam solutions should however be undertaken according to local regulations. Normally sewage systems can dispose foam solution based on this type of foam concentrate, but local sewage operators should be consulted.

Full details will be found in the Material Safety Datasheet (MSDS). For more detailed information please consult Fomtec Technical Advices FTA 40.

STORAGE / SHELF LIFE

Stored in original unbroken packaging the product will have a long shelf life. Shelf life in excess of 10 years will be found in temperate climates. As with all foams, shelf life will be dependent on storage temperatures and conditions.

For storage recommendations and material compatibility please refer to our Fomtec Technical Advices FTA 10 addressing the topic.

INSPECTION/TESTING/MAINTENANCE

The foam concentrate should be tested annually. The testing should be made by a suitable laboratory for analysis of foam concentrates and should measure pH, specific gravity, expansion, drainage time. Storage containers should be inspected and reevaluated for the suitability of the storage location in regard to temperature fluctuations (temperature should be as stable as possible). Exposure to direct sunlight should be avoided.

INTERNATIONAL APPROVALS

- UL 162, 8th Edition, topside type II and type III discharge devices
- FM 5130 Sprinkler and topside type II and type III discharge devices

PACKAGING

We supply this product in 25 litre and 5 US gallon cans, 200 litre and 55 US gallon drums, 1000 litre and 265 US gallon IBC containers and in bulk on special request.

| Volume per piece | Packaging | Part no | Approx. Shipping weight* | Dimensions (mm) L x W x H |
|------------------|-----------------|------------|--------------------------|---------------------------|
| 25 ltr | Can | 12-3370-01 | 26.7 kg | 295 x 260 x 441 |
| 200 ltr | Drum | 12-3370-02 | 212.5 kg | 581 x 581 x 935 |
| 1000 ltr | Container | 12-3370-04 | 1080 kg | 1200 x 1000 x 1150 |
| 5 US gal. | Can | 12-3370-00 | 20.3 kg | 295 x 260 x 441 |
| 55 US gal. | Drum | 12-3370-03 | 220.5 kg | 581 x 581 x 935 |
| 265 US gal. | Container | 12-3370-05 | 1085 kg | 1200 x 1000 x 1150 |
| Bulk | Special request | 12-3370-01 | | |

*including packaging

VISCOSITY DATA – FLOW CURVES

The viscosity flow curves are determined by Brookfield RST rheometer from low to high shear rates. The viscosity curves below are determined by calculating the average value of at least 8 different measurements and add a safety margin of three standard deviations to the average. The viscosity curves are determined for 20°C and 5°C. In the table below the kinematic viscosity (mm²/s) is calculated as dynamic viscosity (mPa·s) divided by the specific gravity of the concentrate.

ENVIRO BY FOMTEC

The Fomtec Enviro range comprises an extensive range of non-PFAS based foams suitable for use Emergency Response missions and System applications. Enviro foam concentrates are available for class A, class B fire hazards and products are available for low, medium, and high expansion discharge devices.



| Shear Rate (s ⁻¹) | Dynamic Viscosity (mPa·s) 20°C | Dynamic Viscosity (mPa·s) 5°C | Kinematic Viscosity (mm ² /s) 20°C | Kinematic Viscosity (mm ² /s) 5°C |
|-------------------------------|--------------------------------|-------------------------------|---|--|
| 10.7 | 3083 | 3258 | 3043 | 3217 |
| 21.5 | 1726 | 1851 | 1703 | 1827 |
| 53.7 | 791 | 870 | 781 | 859 |
| 107.4 | 444 | 505 | 438 | 499 |
| 214.8 | 261 | 304 | 258 | 300 |
| 375.0 | 174 | 206 | 171 | 204 |
| 537.0 | 136 | 164 | 134 | 162 |
| 1074.0 | 106 | 121 | 104 | 119 |
| 1611.0 | 68 | 88 | 67 | 87 |
| 2148.0 | 58 | 75 | 57 | 74 |
| 2792.2 | 79 | 87 | 78 | 86 |

