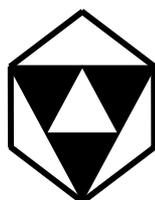


ADDITIVES FOR FIRE EXTINGUISHERS

TECHNICAL DATA SHEETS



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AQUAFILMTM EX-1

AFFF ADITIVE FOR FIRE EXTINGUISHERS (1%)

1. DESCRIPTION.- AFFF compound for extinction of hydrocarbon fires, especially designed for use in portable fire extinguishers. It achieves very fast extinctions on light fuels, when it is applied as foam or spray, thanks to its improved aqueous film characteristics. It exhibits very low corrosion rates on carbon steel and light alloys.

2. USE.- Specially designed for use in portable fire extinguishers. Also it can be used with low expansion foam equipment (nozzles, monitors, foam chambers, etc) and non-aspirating devices (water spray nozzles and standard sprinklers).

3. DOSAGE.- The dilution rate is 1% in water. It can be used in premix (in portable extinguishers) or proportioned with standard equipments (in-line inductors, bladder tanks, balanced pressure systems, etc) and special purpose ones for AFFF agents (e.g. Hydrofoam nozzles).

4. CHARACTERISTICS OF CONCENTRATE AND FOAM SOLUTION.-

CONCENTRATE	
Density @ 20°C, gr/cm ³	1.05
pH @ 20°C	8-8.5
Viscosity, mPa.s @ 20°C	12
Freezing point, °C	<-10

FOAM SOLUTIONS	
Dosage rate	1%
Surface tens. at 20°C, mN/m (Demineralised water)	16.0±0.5
Interfacial tens. with cyclohexane at 20°C, mN/m	2±0.5
Low Expansion Foam (EN-1568-3)	
Foam Expansion Index	8.5
25% Drainage Time, min:s	3:30

5. PACKAGING.- The product is supplied in 20 or 25 L PE prismatic containers, 200 L PE cylindrical drums and 1.000 L IBC containers.

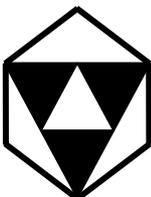


6. PERFORMANCE.- Its foam achieves a very quick knock-down of fires in spray applications and exhibits an excellent burn-back resistance. A 9 lit. hand extinguisher loaded with 1% solution of AQUAFILM EX-1 extinguishes easily the 233B fire test (7 m²) and the 21A class A fire. The performance of the product depends on the characteristics of used equipment (pressure, nozzle, etc), thus its efficiency should be tested with the same fire extinguisher that will be used.

7. STORAGE.- The concentrate should be stored at temperatures between -10° and +50°C, preferably in its original containers or in stainless steel or epoxy lined tanks. Do not mix with other foam concentrates without a previous verification of compatibility.

8. CAUTIONS.- Foams should not be used in contact with electrical equipments, neither with chemical products that can react with water. It is recommended to avoid the contact of the foam concentrate with the skin. In case of eye splashes, wash with plenty of water. In case of ingestion do not induce vomit, drink water and take medical advice.

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AQUAFILMTM EX-10

AFFF ADITIVE FOR FIRE EXTINGUISHERS (6-10%)

1. DESCRIPTION.- AFFF compound for extinction of hydrocarbon fires, especially designed for use in portable fire extinguishers. It attains very fast extinctions on light fuels, when it is applied as foam or spray, thanks to their improved aqueous film characteristics. In addition to the typical surfactants of AFFF, it contains special salts to increase the performance in solid fires.

2. USE.- Especially designed for use in portable fire extinguishers. Also it can be used with low expansion foam equipment (nozzles, monitors, foam chambers, etc) and non-aspirating devices (water spray nozzles and standard sprinklers).

3. DOSAGE.- The dilution rate is between 6% and 10% in water, depending on the desired efficiency. It can be used in premix (in portable extinguishers) or proportioned with standard equipments (in-line inductors, bladder tanks, balanced pressure systems, etc) and special purpose ones for AFFF agents (e.g. Hydrofoam nozzles).

4. CHARACTERISTICS OF CONCENTRATE AND FOAM SOLUTIONS.-

CONCENTRATE	
Density @ 20°C, gr/cm ³	1.13
pH @ 20°C	7
Viscosity, mPa.s @ 20°C	12
Freezing point, °C	<-10

FOAM SOLUTIONS	
Dosage rate	6%
Surface tens. at 20°C, mN/m (Demineralised water)	16.5±0.5
Interfacial tens. with cyclohexane at 20°C, mN/m	1.5±0.5
Low Expansion Foam (EN-1568-3)	
Foam Expansion Index	8
25% Drainage Time, min:s	2:15

5. PACKAGING.- The product is supplied in 20 or 25 L PE prismatic containers, 200 L PE cylindrical drums and 1.000 L IBC containers.

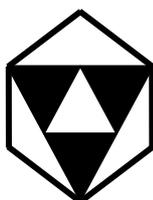


6. PERFORMANCE.- Its foam achieves a very quick knock-down of fires in spray applications and exhibits an excellent burn-back resistance. A 9 lit. hand extinguisher loaded with 6% solution of AQUAFILM EX-10 extinguishes easily the 233B fire test (7 m²) and between 21A and 27A class A fire. The performance of the product depends on the characteristics of the used extinguisher (pressure, nozzle, etc), thus the efficiency should be tested with the same fire extinguisher that will be used.

7. STORAGE.- The concentrate should be stored at temperatures between -10° and +50°C, preferably in its original containers or in stainless steel or epoxy lined tanks. Do not mix with other foam concentrates without a previous verification of compatibility.

8. CAUTIONS.- Foams should not be used in contact with electrical equipments, neither with chemical products that can react with water. It is recommended to avoid the contact of the foam concentrate with the skin. In case of eye splashes, wash with plenty of water. In case of ingestion do not induce vomit, drink water and take medical advice.

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AQUAFILMTM EXD-20

AFFF FOAM SOLUTION (-20°C)

1. DESCRIPTION.- Aqueous solution of an AFFF agent with solvents and salts to decrease the freezing point below -20 °C.

2. USE.- AQUAFILM EXD-20 can be used directly in any foaming or spraying system, but it has been especially designed for recharging extinguishers. When it is used to fight hydrocarbon fires, it is capable of achieving very fast extinctions and exhibits an excellent burn-back resistance. It can be use also for class F fires.

3. DOSAGE.- The product must be used directly.

4. CHARACTERICTICS .-

TYPICAL CHARACTERISTICS	
Density @ 20°C, gr/cm3	1.14
pH @ 20°C	7±0.5
Viscosity, mPa.s @ 20°C	3
Freezing point, °C	<-20
Surface tens. at 20°C, mN/m	17.5±1
Interfacial tens. with cyclohexane at 20°C, mN/m	1.5±0.5
Low Expansion Foam (EN-1568-3)	
Foam Expansion Index	8
25% Drainage Time, min:s	8:00

5. PACKAGING.- The product is supplied in 20 or 25 L PE prismatic containers, 200 L PE cylindrical drums and 1.000 L IBC containers.

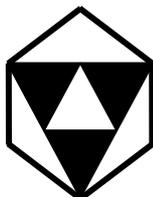


6. PERFORMANCE.- A 9 lit. hand extinguisher loaded with AQUAFILM EXD-20 extinguishes easily the 144B fire test (4,5 m²).

7. STORAGE.- The product should be stored at temperatures between -20° and +50°C, preferably in its original containers or in stainless steel or epoxy lined tanks. Do not mix with other products without a previous verification of compatibility.

8. CAUTIONS.- Foams should not be used in contact with electrical equipments, neither with chemical products that can react with water. It is recommended to avoid the contact of the foam concentrate with the skin. In case of eye splashes, wash with plenty of water. In case of ingestion do not induce vomit, drink water and take medical advice.

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F-334

ADDITIVE FOR CLASS A FIRES

1. DESCRIPTION.- The F-334 is a water based additive of ammonium pirophosphate. It is used for the protection of solid products as fire retardant. In case of class A fires, the F-334 solutions achieves a quick know-down of fire modifying the combustion process of the material and avoiding the reignition of flames.

2. USE.- Although it has been especially designed for use in portable fire extinguishers, the product can be used with spray nozzles to protect solid surfaces as paper, wood, coal, etc. The F-334 can be used in combination with AFFF agents to improve their class A performance; in that case it will be necessary to check the stability and performance of final solutions.

3. DOSAGE.- The dilution rates are 5% - 40% in water, depending the performance desired. It can be used in premix, adding the product directly to water (for example portable extinguishers).

4. CHARACTERISTICS OF THE PRODUCT .-

F-334	
Aspect	Green liquid
% N	Aprox. 5
% P2O5	Aprox. 17
Density @ 20°C, gr/cm3	1.20
pH @ 20°C	6 - 7
Viscosity, mPa.s @ 20°C	4
Freezing point, °C	<-5

5. PACKAGING.- The product is supplied in 20 or 25 L PE prismatic containers, 200 L PE cylindrical drums and 1.000 L IBC containers.

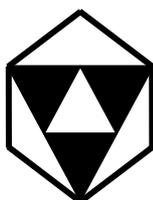


6. STORAGE.- The product should be stored at temperatures between -5° and +50°C, preferably in its original containers or in stainless steel or epoxy lined tanks. Do not mix with foam concentrates without a previous verification of compatibility.

7. CAUTIONS.- It should not be used in contact with electrical equipments, neither with chemical products that can react with water. It is recommended to avoid the contact of the product with the skin. In case of eye splashes, wash with plenty of water. In case of ingestion do not induce vomit, drink water and take medical advice.

7. ENVIRONMENTAL RISKS.- Due that the product can performs as a fertilizer, is not recommended to release huge quantities of it to the environment, in order to avoid eutrophication of aquatic systems.

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AQUAFAT

AQUEOUS SOLUTION FOR CLASS F FIRES EXTINCTION (OILS AND FATS)

1. DESCRIPTION.– Aqueous solution of organic salts for the extinction of class F fires (oil and fats). When applied as spray, it achieves a quick extinction and cooling, besides an excellent burn-back resistance, even at high temperatures. Thanks to its composition is able to avoid the projection of splash during application of aqueous additives on burning fat/oil, preventing human and material damages.

2. USE.– The AQUAFAT can be used directly with any spray system, but it has been especially designed for being used on portable extinguishers and fixed installations of the industrial kitchens.

3. DOSAGE.– The product must be used directly.

4. CHARACTERISTICS.– The AQUAFAT has a light yellow color and a low viscosity.

TYPICAL CHARACTERISTICS	
Density @ 20°C, gr/cm ³	1.260
pH @ 20°C	8.5
Viscosity, mPa.s @ 20°C	6
Freezing point, °C	<-60
Surface tension at 20°C, mN/m	30.5
Interfacial tens. with cyclohexane at 20°C, mN/m	1.5

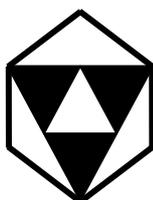
5. PACKAGING.– The product is supplied in 20 or 25 L PE prismatic containers, 200 L PE cylindrical drums and 1.000 L IBC containers.



6. STORAGE.– The AQUAFAT should be stored at temperatures between –50° and +50°C, preferably in its original containers or in stainless steel or epoxy lined tanks. Do not mix with other products without a previous verification of compatibility.

7. CAUTIONS.– The product should not be used in contact with electrical equipments, neither with chemical products that can react with water. It is recommended to avoid the contact of the product with the skin. In case of eye splashes, wash with plenty of water. In case of ingestion do not induce vomit, drink water and take medical advice.

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