
FireFilm® 3% AFFF Foam Concentrate
■ Description

Environmentally Responsible **FireFilm 3%** is a superior quality aqueous film forming foam (AFFF) which is used at **3%** concentration to extinguish fires in hydrocarbon fuels. This new formulation demonstrates SKFF's commitment to superior flexibility, firefighting performance and environmental responsibility. **FireFilm 3%** is suitable for use with most types of proportioning and discharge equipment.

AFFF foam concentrates are designed for rapid fire knockdown by producing a thin aqueous film which spreads across the surface of the fuel, separating the fuel from oxygen. This is accomplished by allowing the foam solution to quickly drain from the foam bubble which in turn, improves long term sealability and burnback resistance.

The aqueous film is produced by the fluorocarbon surfactant reducing the surface tension of the foam solution to the point where the solution can be supported by the surface tension of the fuel. The effectiveness of the aqueous film is directly influenced by the surface tension of the fuel. The film tends to be more effective on fuels with higher surface tension such as diesel and jet fuels, and slightly less effective on fuels with lower surface tension such as hexane and gasoline.

■ Features

- All fluoro-surfactants are based on C6 chain.
- **NOT** contain PFOS or PFOA.
- Low energy input **AFFF**-requires minimal agitation.
- Excellent fluidity provides rapid " knockdown ".
- Suitable for use with fresh or sea water.
- Compatible with standard proportioning and foam making devices.
- Suitable for use with foam compatible dry powder extinguishing agents.
- Specially designed for use with sea water.
- Suitable for extinguishing unleaded gasoline fire.

■ Applications

FireFilm 3% is used at **3%** concentration in fire suppression systems and manually to fight fires involving hydrocarbon fuels such as crude oil, gasoline, and fuel oils. It is not suitable for use on polar solvents or

water miscible fuels such as alcohols, ketones, esters and ethers. Typical installations include foam water sprinkler systems, aircraft hangars, loading racks, process areas, etc. **FireFilm 3%** is an excellent agent for use in aircraft rescue and fire fighting or other manual fire fighting applications where polar solvent fuels are not encountered. It is also useful as a wetting agent in combating class **A** fires.

In general, **AFFF** foam concentrates may be used with non aspirating nozzles and sprinklers, however, for best foam expansion and **25%** drainage life, all foam concentrates should be used with aspirating nozzles and foam making discharge devices.

■ Typical Physical Properties

Appearance_____	Straw Yellow Color
Specific Gravity at 20°C_____	1.02
pH _____	7.8
Viscosity at 25°C_____	3.0csk
Freezing point_____	-4°C
Minimum Usable Temperature_____	2°C
Maximum Usable Temperature_____	49°C
Expansion(sea water)_____	6~9
25% drainage time(sea water) _____	3 min.
Fire extinction(sea water)_____	< 3 min.
Burnback_____	> 10min.

■ Approvals and listings

- **UL 162 (in application)**
- **Chinese GB 15308-2006**

FireFilm 3% has successfully passed **UL162** and **Chinese GB** test criteria for use at **3%** concentration on hydrocarbons with fresh water and sea water, include application through a variety of proportioning and foam making discharge devices. Consult SKFF for a complete list of these devices.

■ Storage and Handling

FireFilm 3% is ideally stored in its original shipping container or in tanks or other containers which have been designed for such foam storage. Recommended construction materials are stainless steel (Type 304L or

316), high density cross linked polyethylene, or reinforced fiberglass polyester (isophthalic polyester resin) with a vinyl ester resin internal layer coating (50-100 mils).

Foam concentrates are subject to evaporation which accelerates when the product is exposed to air. Storage tanks should be sealed and fitted with a pressure vacuum vent to prevent free exchange of air.

The recommended storage environment is within temperature range of 2°C to 49°C.

It is recommended that **FireFilm 3%** not be mixed with any other type of foam concentrate in long term storage. Such mixing could lead to chemical changes in the product and a possible reduction in or loss of firefighting capability. Most expanded foams are compatible for side-by-side application during an incident.

FireFilm 3% may be stored for a limited period as a 3% premixed solution using fresh water. A biocide agent should be added to prolong storage life of the premix solution. Shanghai Kidde Fire Fighting should be consulted for advice.

FireFilm 3% is suitable for use in combination with foam compatible dry chemical extinguishing agents.

■ Shelf Life, Inspection and Testing

The shelf life of any foam concentrate is maximized by proper storage conditions and maintenance. Factors affecting shelf life are wide temperature changes, extreme high or low temperatures, evaporation, dilution, and contamination by foreign materials. Properly stored Kidde Fire Fighting **AFFF** foam concentrates have been tested and shown no significant loss of fire fighting performance, even after **15** years.

Annual testing of all fire fighting foam is always recommended and Shanghai Kidde Fire Fighting Foam provides a Technical Service Program to conduct such tests. Contact us for details

■ Environmental and Toxicology Information

FireFilm 3% contains no ingredients reportable under the 'U.S. SARA' and "CERCLA" regulations.

FireFilm 3% is biodegradable. However, as with any substance, care should be taken to prevent concentrate from entering ground water surface water or storm drains. Heavily diluted or finished foams can be treated by local

biological sewage treatment systems. Since facilities vary widely by location, disposal should be made in accordance with state and local regulations.

Results of tests for acute oral toxicity and primary skin irritation have proved negative. Repeated skin contact will remove oils from the skin and cause dryness. **FireFilm 3%** is a primary eye irritant, and contact with the eyes should be avoided. Users are advised to wear protective equipment. If **FireFilm 3%** enters the eyes, flush them well with water and seek immediate medical attention. For further details, see the **FireFilm 3%** Material Safety Data Sheet.

■ Ordering Information

FireFilm 3% is packed in **25** litre or **200** litre high density polyethylene containers sealed with tamper evident caps.

25 litre pails ----- gross weight **27** kg

200 litre drums-----gross weight **214** kg

Palletizing of pails and wooden case packing can be provided upon request.

■ Shipping Cube

25 litre Pail ----- (0.032cu.m)

200 litre Drum ----- (0.326cu.m)