

XF3000

**fluorine-free super cooling & wetting
additive for control of lithium-ion
battery fires**



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XF3000 is a fluorine-free, non-foaming water additive with outstanding cooling, wetting and spreading properties that has been specifically designed to control lithium-ion battery fires. Its unique surface-active properties offer fast cooling and temperature control, thereby avoiding thermal runaway.

Growing use of lithium-ion batteries

Since its commercial launch in the 1990s, high-energy density of lithium-ion batteries have been used in many types of household and industrial applications like electric screwdrivers, laptops, smartphones and flashlights.

More recently, the capacity, size and scope has significantly increased and they are now widely used in many larger electrical appliances, as well as e-bikes and e-scooters.

Due to their high energy density, lithium-ion batteries present a variety of fire hazards that demand superior fire protection.

How do lithium-ion fires start?

Lithium-ion fires can start through:

- ~ Internal manufacturing defects (material defects, construction, contamination)
- ~ Physical damage (during assembly, shipping, handling, waste disposal, accidental during product use)
- ~ Electrical abuse (overcharging, over – discharging, short circuit)
- ~ Thermal abuse (exposure to high temperatures)

As the size of the battery increases, the selection of the best containment method becomes more complicated.

High efficient performance

XF3000 is highly efficient in controlling lithium-ion batteries and has outstanding cooling, wetting and spreading properties on class A fires (wood, recycling waste, plastics, rubber and tires). Acting as a wetting agent, it penetrates the surface of A class fire material, while the spreading properties enable the agent to extinguish the fire efficiently. Expected ratings at 2%

6L extinguisher is suitable to extinguish 624 Wh lithium-ion batteries and 21A.

9L extinguisher is suitable to extinguish 700 Wh lithium-ion batteries and 27A.

Applications

XF3000 can be used in fire extinguishers and with all conventional fire brigade equipment, inline- inductors, water branch pipes as well as spray nozzles. The product is non-foaming.

On lithium-ion battery fires in particular, it is recommended to use fine droplet spray nozzles to achieve the optimum efficiency of the agent.

Properties

Spreading and wetting

The unique and outstanding cooling, wetting and spreading properties of XF3000 are enabled by selected surfactants, as well as innovative additives.

Storage

It is recommended that XF3000 is stored in its original closed shipping containers at a temperature between 0°C and +50°C. It should be both covered and protected from sunlight in order to maintain its original physical and chemical characteristics.

Biodegradable material

XF3000 is considered as being biodegradable and having minimal environmental impact, being non-toxic to humans, fish and animals.

Importantly, XF3000 does not contain any fluorine, PFOS, PFOA or PFT.

Emulsifying effect

XF3000 is optimal for use where foams should be avoided and can be applied simultaneously with powder and foam.

Packaging

XF3000 is available in:

- ~ 20 kg/L cans
- ~ 200kg/l drums
- ~ 1000 kg/l containers

Fire class	A & Lithium-Ion battery
Usage concentration	0.5% - 3%
Specific gravity (20°C)	1.05 +/- 0.01 g/cm ³
Freezing point	-3°C
pH (20°C)	6.0 - 9.5

We reserve the right to improve our products within the tolerances being compliant to approval without prior notice.

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