

Use and Maintenance User Manual



Via del Molino, 40 - 52010 Corsalone (AR) - Italy - info@emme-italia.com - Tel. +39.0575.511320
 Other branches Emme Antincendio s.r.l. in Italy : Milano - Padova - Roma - P.IVA/ C.F. 11208251006 - R.E.A. AR-159122

www.emme-italia.com



22066-945 : Portable Fire Extinguisher, 6 L Foam

TESTED SUCCESSFULLY ON LITHIUM BATTERY WITH CAPACITY:

36 v — 750 Wh — 20,1 Ah



New Nozzle Technology

allows the formation of such foam

Note: image is for illustrative purpose only, the product purchased can has some difference

FLUORINE FREE FOAM



DIELECTRIC
 Suitable for use on fire involving electrical voltages up to 1.000 V, at a minimum distance of 1 meter.

CYLINDER
 Stainless steel, 3 pieces drawing, external powder painting Red Ral 3000..

EXTINGUISHING AGENT
 Lith-M FX Fluorine free foam (1), aqueous solution of carefully selected surfactants designed for use as foaming agents in a portable fire extinguisher.

PROPELLANT
 Dehumidified air or nitrogen (N₂).
VALVE
 M. 30x1.5, brass body, levers with green painting Ral 6029.

USE
 Class A Fires (solid materials)
 Class B Fires (flammable liquids)
 Class F Fires (cooking oils)
 Lithium-ion batteries

6 L foam fire extinguisher, temperature range from +5°C to +60°C, manufactured in accordance to **UNI EN 3-7 (D.M. 7.1.2005)**, approved Marine Equipment Directive **MED 2014/90/EU**, certified according to the directive for pressure equipment PED 2014/68/EU. Manufactured according at productions checks as agreed with **EN 3-10**. Certified by **Benor**. Quality Product certification guaranteed by Bureau Veritas Italia.

APPROVED/CERTIFIED FIRE EXTINGUISHER:



FIRE RATING :



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TECHNICAL SPECIFICATIONS

| | |
|---------------------|--|
| FIRE RATING | 27 A 144 B 25 F |
| EXTINGUISHING AGENT | Foam Lith-M FX |
| PROPELLANT | Dehumidified air or Nitrogen (N ₂), 15 bar at 20°C |
| TEMPERATURE RANGE | +5°C / +60°C |
| NOMINAL CHARGE | 6 Liters |
| FULL WEIGHT | ~ 8,8 Kg |
| DIMENSIONS | Height (base - valve) 530 +/- 5 mm Diameter (cylinder) 160 +/- 2 mm |
| DISCHARGE TIME | ~ 49,7 seconds |

(1) The Additive used to make the extinguishing agent does not contains fluorine.

Prerequisite when using the fire extinguisher on lithium batteries

According to tests executed with this fire extinguisher, it's possible to stop the combustion of a lithium-ion battery with a water based fire extinguisher with foam additives. It has been verified that the use of the fire extinguisher allows to lower the temperature and control any re-ignitions of the cells present inside the battery (generated by the chain reaction of the same and due to their shape inside the battery pack). The battery tested has a voltage of 36 V with a capacity of 20.1 Ah and an anergy value of 750 Wh. The fire extinguisher tested is therefore effective in containing the flames emanated from a battery with same or inferior characteristics compared to the one tested.

**NOTE: the test was executed on a new battery and so at full efficiency.*

SAFETY WARNING



Carefully read the note in paragraph "4B" regarding precautions for use on batteries

The combustion of lithium-ion batteries releases very harmful gases and fumes. Direct exposure to high concentrations of gases emanating from the combustion of lithium-ion batteries can cause serious damage to health. Lithium-ion batteries can have unpredictable phenomena during fire, such as explosive reactions caused by the pressure of the cells inside the battery pack. it's advisable to use appropriate safety devices. The use of fire extinguisher is recommended for professional and expert staff. The use of fire extinguisher by uninformed people can lead to lower results and cause damage to involved people.

DISCLAIMER

The result of the tests performed refers exclusively to the fire extinguisher model used during the tests themselves. The fast development of lithium-ion batteries and portable fire extinguishers means that the performance achieved during the test phase is not guaranteed when using lithium-ion batteries or shutdown techniques other than those tested. It is not possible to understand where and to what extent these fire extinguishers can be installed due to the outer casing of the lithium-ion battery pack.

The fire extinguishers tested are intended to help contain the principle of fire resulting from the triggering of a lithium-ion battery.

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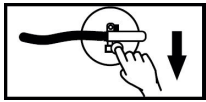
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INSTALLATION AND MODALITY OF USE

The installation of the fire extinguisher must be performed according to the rules in force. The fire extinguisher have to be installed in a safe and stable support, with a gripping at a maximum recommended height of 110 cm. The fire extinguisher must be free of obstructions and marked by an appropriate identifying label. It is recommended to install it in a dry place, protected from the atmospheric agents. It is recommended the installation of water-based fire extinguishers for close spaces. The commissioning of the fire extinguisher for the protection of the area must be carried out by qualified personnel according to the rule in force within 6 months from the date of production and/or placing on the market, reported in the declaration of conformity released by the producer.

PRECAUTIONS FOR THE USE

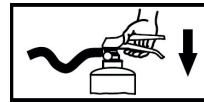
1) Follow the instructions present on the marking label.



1) REMOVE SAFETY PIN



2) HOLD THE HOSE



3) SQUEEZE GRIP LEVER



4) AIM THE JET AT BASE OF FIRE

A) USE ON STANDARD FIRES

- 2) Do not through the fire extinguisher on to the direct flames.
- 3) This fire extinguisher is a pressurized vessel and must not be pierced, dented or subjected to external damage.
- 4) Do not direct the jet on the people.

B) USE ON BATTERIES FIRES



- 2) In case of use of the fire extinguisher on fires from lithium-ion batteries, it's advisable to keep the security gap during dispensing.
- 3) Do not expose yourself directly to the flames during dispensing.
- 4) Dispense the extinguishing with regular intervals. Do not dispense it in a single intervention.
- 5) Let the extinguishing penetrate inside the casing containing the battery pack.
- 6) This fire extinguisher is a pressure container and must not be drilled, dented or submitted to external alterations.
- 7) Don't aim the jet at people.

MAINTENANCE PERIODS FOR EFFICIENCY GUARANTEES

The mantaning of the product efficiency have to be carried out from the responsible person. It is recommended a visual check of the efficiency state every three months since the commissioning time apart if there are different dispositions. It is advisable to : verify that the fire extinguisher would be in a correct position, safe and stable, free from impediment for the use; identify the fire extinguisher with an appropriate identification sign; make sure of its structural integrity and that is free from any damage; check that the original documentations is available. Any restoration operations and instrumental checking have to be realized exclusively by qualified personnel who possess the necessary documentations to maintain the constancy of the product performance. Any tampering or intromission by unauthorized personnel voids the product warranty.

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