

Product Data Sheet F-Exx® 8.0 G

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F-Exx® 8.0 G (Fire-Ex 8.0 G)

0.8 Liters

Gel extinguisher

for fire rating A



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1. Product Description

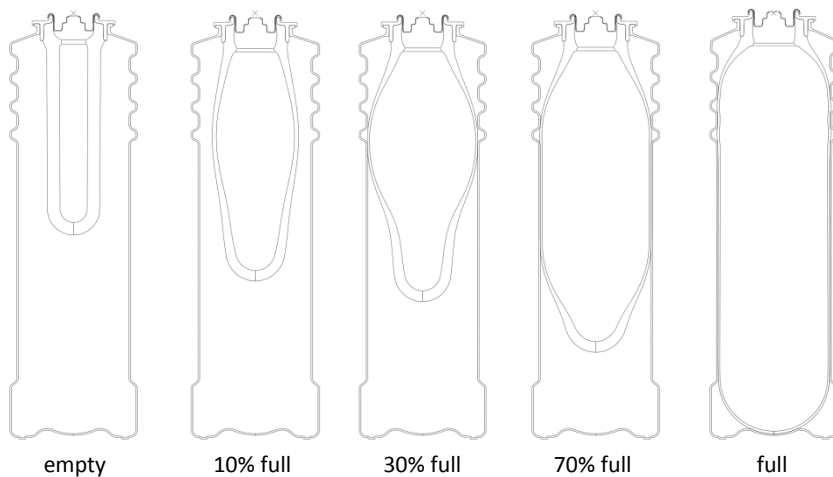
“Make Safety Available”! F-Exx® was developed and manufactured for a sole purpose only. As long as a fire is still small, it can be extinguished by simple means. The F-Exx® is a portable fire extinguisher for initial fires and can save lives and prevent further damage. The system does not require any propellant gases, aerosols or compressed air in order to discharge the extinguishing agent. Because of its extinguishing performance, handling and compact dimensions it can be employed in many areas.

The F-Exx® is suitable for extinguishing:

- solid materials (Class A fires), e.g.: wood, plastics, textiles, etc.
- The extinguishing gel in use is not suitable for extinguishing burning fluids (fire rating B) and fat fires (fire rating F)

2. Technology

A true innovation in the field of portable fire extinguishing systems: the F-Exx®. Unlike the previously known and commercially available fire extinguishers and extinguishing spray cans, the system does not have any propellant gases, aerosols or compressed air. Because of its patented elastomer force element the spray characteristics over the entire foam dispersion period is virtually constant.



Whereas conventional powder extinguishers operate with gas pressures up to 20 bars and extinguishing spray cans up to 10 bar, the F-Exx®, is a low pressure system with a liquid pressure of approximately 2 bars. The energy contained in the system is thus only a fraction of the amount of conventional systems and excludes any risk of an explosion due to the abandonment of compressed gas. Even with wanton destruction or burning there is no danger for the user - the F-Exx® will simply leak.

With conventional operating systems the gas pressure decreases as discharge progresses further and further. With this, the spray behavior changes regarding spraying distance and spray pattern. Due to the rapidly decreasing pressure of conventional spray can systems, it is therefore necessary to start off with a very high initial pressure. In order to achieve the required casting distance, even in these systems, a pressure of only 1 to 2 bar would be sufficient. But in order to still have your casting distance available with the emptying of the system, the starting pressure must be very high.

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In the case of F-Exx®, the pressure of the system throughout the entire dispensing period remains approximately even at about 2 bar, so that, despite the low initial pressure during the entire extinguishing operation the necessary casting distance of the system is ensured.

3. The use of extinguishing gel

The extinguishing agent in the F-Exx® is an adhering and heat deflecting gel that does not contain any air bubbles, but consists of uniformly thickened water. This extinguishing gel consists of up to 99% water and has a better cooling effect than many other extinguishing types of foam.

When using foam type extinguishing agents, the foam can collapse at high temperatures due to the trapped air and thus loses important aspects of its effectiveness. Extinguishing gels, however, cools and cuts off the oxygen supply and adheres to the burning material, even on smooth and vertical surfaces and ceilings. Via its heat stability, the gel maintains its extinguishing and cooling properties until complete evaporation. The sustainable cooling and the simultaneous smothering of the flames, result in an immediate reduction in the temperature around the burning material. The hot, toxic fumes are deposited and soot particles are bound.

Extinguishing gel is ideally suited for cooling down burning lithium-ion batteries, as it adheres well to the surface fire and does not drip off. With this, a very good local cooling effect is achieved. Furthermore, because of its viscosity the gel does not easily ooze into adjacent and possibly intact electronic components.

The extinguishing gel is pH-neutral and therefore safe to extinguish humans on fire. Also, due to this extinguishing gel is less corrosive than extinguishing foams or salt enriched water based extinguishing agents.

4. Environmental concerns

In selecting the extinguishing agent great importance was placed upon the biodegradability. The harmful PFOS / PFOA (perfluorooctane sulfonate / perfluorooctanoic acid) have been totally avoided. The extinguishing agent does not contain any other fluorine compounds (PFT). These are generally not biodegradable and can be deposited in the body, where even after many years they can still be detected and are suspected to develop cancer.

The F-Exx does not contain any powder, whereby consequential damage is avoided. This can be significant, since large dust clouds of extinguishing salts spreads far beyond the source of the fire and can also be inhaled. Dry powder acts highly corrosive in conjunction with humidity. The F-Exx® is equipped with a biodegradable liquid extinguishing gel. Residues of the extinguishing agent can be wiped off easily after spraying and wetted surfaces can be cleaned with water.

The F-Exx® is not refillable and can after its service life be disposed of in accordance with the respective local regulations (e.g. recycling centers, building yards and waste disposal plants). But the drained system can simply be put into the trash after use. Even with its destruction during the disposal process there is no risk of expansion or explosion with the F-Exx®.

As an alternative to the disposal in accordance with the provisions of the council, the life cycle of the product can be further improved if it is checked after use or after the expiration of the service life of the F-Exx® by an authorized customer service agent and maintained accordingly.

5. Advantages and unique features

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“Make Safety Available“

- Availability of safety due to its immediate extinguishing performance at the site of a fire!
- The extinguishing gel forms a protective gel barrier on all surfaces, the draining off speed is much lower than for low viscosity extinguishing agents
- Low evaporation rate associated with high shielding performance
- Targeted spraying of the fire surface is possible in conjunction with a maximum spraying distance
- Ability to provide full extinguishing performance at any orientation (upright, upside down, on the side = 360°)
- High extinguishing performance despite the small size of the extinguishing system
- Intuitive, easy and safe usage even for inexperienced users
- Ergonomically designed handle that allows operation by either a small child's hand or by large hands and firemen's gloves
- Protection against inadvertent release (operator error)
- Spraying performance is almost constant over the entire extinguishing period
- Achieves a good cooling effect on burning Li-ion batteries via adhesion to the fire surface
- Simple to use at a minimum weight by using lightweight plastic parts
- No maintenance and no maintenance costs within the service life of 3 years

Harmless and Safe

- Free of propellant gases, aerosols and compressed air, thus no risk of explosion - even at high temperatures
- No risk of explosion in the disposal chain
- Can be used indoors, as no propellant gases can displace breathing air
- System is not a pressurized container, thus the associated risk and the usual rules for storage and transport according to UN 1950 and BGHW M20 do not apply.

Environmentally friendly

- Extinguishing agent is biologically degradable (non hazardous)
- Extinguishing agent is pH neutral
- No contamination as with dry powder, as a liquid extinguishing agent is used
- Remains of extinguishing agent can simply be wiped up with a cloth after spraying

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6. Technical Data:

Class:	Class A with extinguishing performance of 2A With the official confirmation of the fire extinguishing performance for Classes A, the following fires can be extinguished: 2A: approx. a 4 kg pile of burning dry fir or spruce wood
Total height:	360 mm
Weight:	1.4 kg
Contents (net):	800 ml
Pressure (at 20 °C):	approx. 2 - 3 bar (pure liquid pressure, not gas pressure)
Casting distance:	approximately 4.5 m
Spraying duration:	approx. 25 secs
Propellant:	elastomer force element (no gas)
Extinguishant:	Extinguishing gel Gelkoh / Firesorb 1.5% smooth and thickened extinguishing gel with approx. 99% water content
Operating temperature:	0 °C to 70 °C
Shelf-life:	3 years, maintenance free

7. Why F-Exx® is not a fire extinguisher according to DIN EN-3?

This European Standard (EN-3-8, Chapter 1 "Application") sets out rules for the design, type testing, production and inspection of portable fire extinguishers with metal housings, with the objective of curbing the risk arising from the interior pressure. The gas pressure inside a conventional powder extinguisher is between 15 to 20 bar. The flexible force element in the interior of the F-Exx® only generates a fluid pressure of approximately 2 bar pressure and does not contain any pressure or propellant. Therefore a metal housing is not required, neither to maintain the internal pressure nor to prevent any explosions. The outer container of the F-Exx® can therefore be made of plastic, without thereby compromising the functionality or safety of the extinguisher.

An expertise was carried out on conformity to EN 3-7 with consideration of design-specific features by the bureau of expertise Eisner (a publicly appointed and sworn expert for fire extinguishers by the IHK Koblenz, Germany).

8. Why is the F-Exx® not considered to be a spray can extinguisher?

A spray can extinguisher is an aerosol package (Aerosol Directive 2008/47/EG), which contains a compressed gas as an energy storage in addition to the liquid or powdered chemical. Conventional extinguishing spray cans have pressures of approx. 10 bar (car tyres, 2-3 bar). Due to the resulting potential hazards similar regulations for storage and transport (UN 1950, BGHW M20) apply.

In the past, cases of bursting spray can extinguishers were reported in the media and there have been numerous recalls by the manufacturers since. The reason for this was often due to corrosion of the can resulting from the extinguishing agent. In the event of overheating, spray cans may burst, as they have no pressure relief valve. Most fire extinguishing aerosol spray cans only can operate, system-related, in an upright position. Already the mere extinguishing of a rubbish bin on the floor can therefore be a challenge. At high temperatures, the internal pressure increases dramatically. When stored in the trunk of a car a spray can quickly reaches temperatures of over 60 °C, which can bring the spray can to its bursting limit.

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Due to the elimination of any compressed gases, the F-Exx® is not covered by the Aerosol Directive and therefore is not subject to the restrictive regulations for storage and transport. Attributable to its design, the system inherently does not possess any of the mentioned disadvantages. Any increase in temperature hardly increases the fluid pressure within the interior. Even pressure fluctuations, resulting, for example, in air transportation are safe. In addition, the system works in any orientation (360°), even upside down. Even with violent destruction, the foam will simply flow out completely without any risk of explosion.

In conventional spray cans the gas pressure continues to decrease with continuing discharge. As this happens, the spray behaviour changes regarding the spraying distance and spray pattern. The pressure curve of F-Exx ® remains virtually constant during the entire period of usage, making possible a uniform spraying pattern (see paragraph 2).

9. Why the F-Exx ® does not have any CE marking

The CE marking is a requirement for the commercialization of products for which a CE mark for various EU directives is required. With the CE marking, the manufacturer or importer declares under EU Regulation 765/2008, "that the product complies with the applicable requirements." The F-Exx ® principle is not covered by any of these groups or existing product technology areas. As such, for instance, the directive "Simple Pressure Vessels (2009/105/EC)" requires a welded metal container.

The Directive on General Product Safety (Directive 2001/95/EC) regulates health and safety of consumers. It is a collection policy that comes into play when specific guidelines are not applicable. In its new form, it also applies to products that are intended for commercial use, but can also go to the consumer market. The CE marking pursuant to this Directive is not intended for use.

10. Specification

Overall, the following certificates are available:

- environmental certificate from the manufacturer Tectro SMT GmbH
- ISO-TS certificate of the manufacturer Tectro SMT GmbH
- Review of the extinguishing performance according to DIN EN3-7 by Fire Expert's Office Eisner
- Safety Data Sheet of the extinguishing agent and the system
- Wastewater Testing of the Hygiene Institute of the Ruhr
- Hygienic-fire testing of the Hygiene Institute of the Ruhr
- Biological Soil testing of the Hygiene Institute of the Ruhr
- Material Safety Declaration by VDE Institute (research on polycyclic aromatic hydrocarbons)
- Report concerning Compliance to EN 3-7:2004+A1:2007 by Fire Expert's Office Eisner

The extinguishing performance and und EN3-7 Compliance des F-Exx® 8.o G has been confirmed by Expert's Office Eisner (of the Industrial Chamber of Commerce, IHK Koblenz, Germany, publicly appointed and sworn expert for fire extinguishers) with classification of 2A.

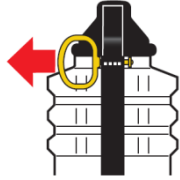
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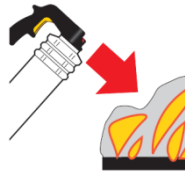


11. Functional Description

1. Remove safety pin



2. Aim nozzle at fire



3. Squeeze yellow trigger



Wichtige Hinweise für die Brandbekämpfung:



Always maintain a safe distance to the fire



As a rule, fight the fire from below



Good for cooling Li-Ion batteries



Sprayable overhead



Do not spray into eyes



After extinguishing the fire, observe the fire site

By using extinguishing gel there may be a greater associated greater risk of slipping on site!

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12. Applicational Examples

Areas of applications can be found in commercial, recreational use and at home. It can also be carried by security personnel. Applications are for fighting initial fires and in extinguishing individuals on fire. Upon spraying at individuals, be aware that breathing through the foam is not at all possible.



For Fire Class A
2A



... in offices ...



... in leisure ...



... for camping ...



... on boats ...



... for BBQ's ...



... at fire places ...



... for cooling Li-Ion
batteries



... for use in doors.

13. Repair and Maintenance

The F-Exx® has a dealer warranty of 36 months and requires no maintenance during this period. The expiration date is indicated on the label. After removal of the safety device the F-Exx® should be disposed of, even if it was not entirely empty. Only by doing so, it can be ensured that in the case of an emergency, the full amount of extinguishing agent is at hand.

The F-Exx® is not refillable and should be disposed of after the expiration period in accordance with local regulations. However, an empty system can be easily fed into the trash. As an alternative to the disposal in accordance with the provisions of the council, the life cycle of the product can be further improved if it is checked after use or after the expiration of the service life of the F-Exx® by an authorized customer service agent and maintained accordingly.

Always protect the F-Exx® against exposure to direct sunlight and from other heat sources and protect it against freezing temperatures.



Storage temperature: 0°C to 50°C

Operating temperature: 0°C to 70°C

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14. Other

EAN-Code:



Customs Tariff Number:

84241000

Patents:

DE 10 2009 006 755.8, DE 10 2010 018 915.4, DE 10 2010 018 888.3,
DE 10 2010 018 889.1, DE 10 2011 011 352.5

Registered Design:

001 204 499-0001

Trade Mark:

011 457 108 „F-Exx“

Patents and Licenses ♦
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