

# Product Data Sheet F-Exx® 1.5 / 3.0 / 8.0 F

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The Fire Extinguisher

## F-Exx® Fat fire extinguisher

For fire ratings : A – F



**F-Exx® 1.5 F**

0.15 Liters



**F-Exx® 3.0 F**

0.3 Liters



**F-Exx® 8.0 F**

0.8 Liters

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## 1. Product Description

"Make safety available" - the F-Exx<sup>®</sup> family of fat fire extinguishers 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<sup>®</sup> is a portable fire extinguisher, specifically designed for grease fires, and initial fires of solids and can save lives and prevent further damage.

Cooking oil and fat can self ignite when heated to temperatures above 300 ° C. By trying to extinguish with water, a life-threatening explosion will occur. The extinguishing agent of the F-Exx<sup>®</sup> fat extinguisher has been specifically designed for extinguishing grease fires. Due to the high risk potential of fat and grease fires extreme caution must be exercised - a minimum extinguishing distance of approx. 1.5 m to object on fire must be maintained.

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 dimensions it can be employed in many areas.

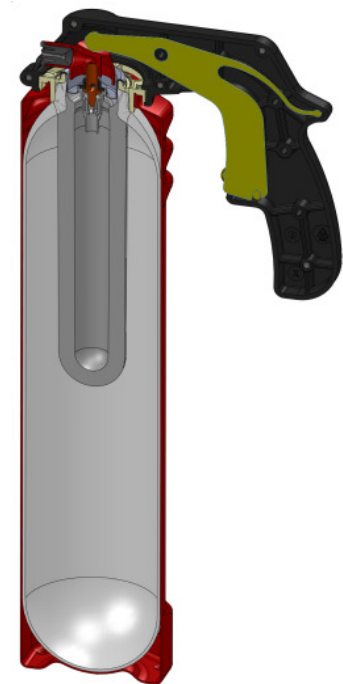
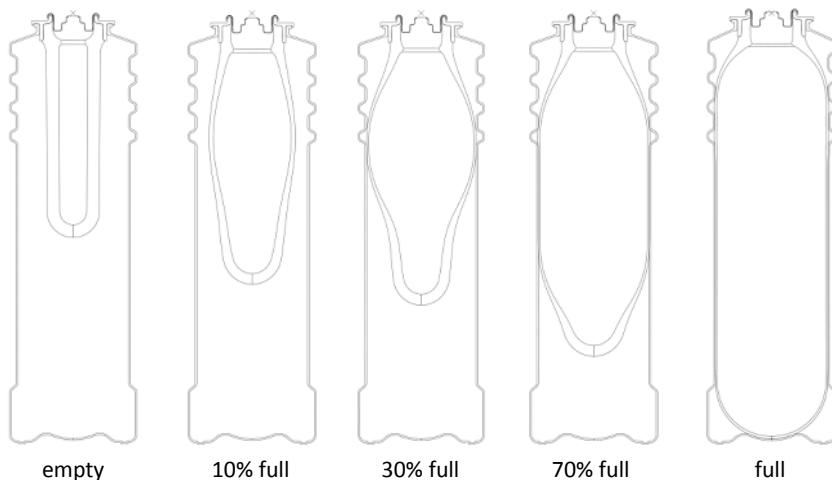
The F-Exx<sup>®</sup> is suitable for extinguishing:

- fires resulting from cooking oil/fats in frying and baking equipment (fire class F) and pans, extractor hoods and shafts
- solid materials (Class A fires) e.g.: wood, plastics, textiles, etc. (Not F-Exx<sup>®</sup> 1.5 F)
- The extinguishing gel in use is not suitable for extinguishing burning fluids (fire rating B)

## 2. Technology

A true innovation in the field of portable fire extinguishing systems: the F-Exx<sup>®</sup>.

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.



3D Sectional view with unfilled and filled force element (coloured grey)

Whereas conventional powder extinguishers operate with gas pressures up to 20 bars and extinguishing spray cans up to 10 bar, the F-Exx<sup>®</sup>, 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 explo-

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sion due to the abandonment of compressed gas. Even with wanton destruction or burning there is no danger for the user - the F-Exx<sup>®</sup> 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.

In the case of F-Exx<sup>®</sup>, 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. Environmental Concerns

In selecting the extinguishing agent great importance was attached to the biodegradability. The harmful PFOS / PFOA (perfluorooctane sulfonate / perfluorooctanoic acid) have been entirely omitted. The extinguishing agent does not contain any other fluorinated surfactants. These are generally not biodegradable and can be deposited in the body, where they can be detected years later and are suspected to cause 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 in conjunction with humidity in a highly corrosive manner. The F-Exx<sup>®</sup> is equipped with a biologically degradable liquid chemical. Remnants of the extinguishing agent can be wiped off easily after spraying and wetted surfaces can be cleaned with water.

The F-Exx<sup>®</sup> 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). 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<sup>®</sup>.

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<sup>®</sup> by an authorized customer service agent and maintained accordingly.

### 4. Advantages and Unique Features

#### “Make safety available”

- Availability of safety due to its immediate extinguishing performance at the site of a fire!
- Broad operating capability by being suited for Classes A and F
- Ability to provide full extinguishing performance at any angle, even upside down (360 °)
- High extinguishing performance despite the small size of the extinguishing system
- Intuitive, easy and safe usage even for inexperienced users

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- 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
- Easy to use by use of lightweight plastic parts => minimum weight
- Applicable for electrical installations up to 1000 V (minimum spray distance 1 m)
- No maintenance and no maintenance costs within the service life of 5 Years

## Harmless and Safe

- Via the combination of extinguishing agent and spray system the "primary reaction" during extinguishing fat fires remains minimal
- 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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## 5. Technical Data

Characteristics	F-Exx® 1.5 F	F-Exx® 3.0 F	F-Exx® 8.0 F
Fire ratings	F Extinguishing power: 5F	A, F Extinguishing power 2A, 25F	A, F Extinguishing power 5A, 40F
With the official confirmation of the fire extinguishing power for Class A and Class F fires the following fires can be extinguished:	The extinguishing of small solid substance fires are possible (without any rating) 5F: 5 Liters of burning vegetable oil	2A: approx. a 4 kg pile of burning dry fir or spruce wood 25F: 25 Liters of burning vegetable oil	5A: a 30 kg pile of burning dry pine wood (l: 50cm; w: 50cm; h: 56cm) 40F: 40 Liters of burning vegetable oil
Total height	150 mm	245 mm	360 mm
Weight	280 gr.	540 gr.	1.75 kg
Contents (net)	150 ml	300 ml	800 ml
Fluid pressure (at 20°C)	approx. 2 bar	approx. 2 bar	approx. 2 bar
Casting distance	approx. 4 m	approx. 4 m	approx. 4.5 m
Spraying duration	approx. 15 secs	approx. 35 secs	approx. 15 secs
Propellant	elastomer force element (no gas)		
Extinguishant	Fluid high performance fat extinguishing agent based on organic salts		
Operating temperature	-20°C to + 70°C		
Shelf life	5 years, maintenance free		
Other	Applicable for electrical systems up to 1000 V (minimum spray distance 1 m)		

## 6. 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, to reduce risks of the internal pressure of these devices causing an explosion. The gas pressure inside a conventional powder extinguisher is between 15 and 20 bar. The flexible force element in the interior of the F-Exx® only produces a fluid pressure of approximately 2 bar and does not contain gas or propellants. A metal housing is neither needed maintain the internal pressure nor to protect against explosions. The outer container of the F-Exx® can therefore be made of plastic, without compromising 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).

## 7. Why the F-Exx® is 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

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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.

Due to the elimination of any compressed gases, the F-Exx<sup>®</sup> 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 behavior changes regarding the spraying distance and spray pattern. The pressure curve of F-Exx<sup>®</sup> remains virtually constant during the entire period of usage, making possible a uniform spraying pattern (see para. 2).

## 8. Why the F-Exx<sup>®</sup> 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<sup>®</sup> system 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.

## 9. Specifications

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 of 1.5 F and 3.0 F (Consulting Engineer Eisner)
- Review of the extinguishing performance according to DIN EN3-7 of 8.0 F (MPA Dresden)
- Electrical Test according to NF S 61-804 and DIN EN3-7 (MPA Dresden)
- Declaration of no objection from the manufacturer of the extinguishing agent
- Safety Data Sheet of the extinguishing agent and the system
- Material Safety Declaration by VDE Institute (research on polycyclic aromatic hydrocarbons)

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- Report concerning Compliance to EN 3-7:2004+A1:2007 by Fire Expert's Office Eisner (of the Industrial Chamber of Commerce, IHK Koblenz, Germany, publicly appointed and sworn expert for fire extinguishers)

Electrical installations voltages up to 1000 V can be extinguished at a safety distance of 1 m. (Expert report by MPA Dresden, Germany).

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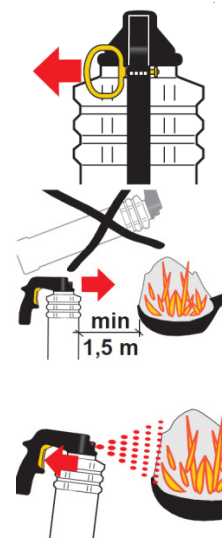
## 10. Functional Description

1. Remove safety pin
2. Aim nozzle laterally towards the fire with a minimum distance 1.5 m
3. Press red spray head or press yellow trigger

F-Exx<sup>®</sup> 1.5 F / 3.0 F



F-Exx<sup>®</sup> 8.0 F



### Vital Instructions for Fighting Fires:



## 11. 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 possible.



For Fire Class A



For Fire Class F



For fat fires, min. distance 1.5 m ...



... for camping ...



... on boats ...



... for BBQ's ...



... at fire places ...



... in kitchens ...



... in offices ...



... for use indoors ...



... in leisure ...



... for use on electrical appliances up to 1000 V, min. spray distance 1 m



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## 12. Maintenance and Repair

The F-Exx® has a dealer warranty of 60 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 extreme freezing temperatures.



Storage temperature: -20°C to + 50°C

Operating temperature: -20°C to + 70°C

## 13. Other

EAN- F-Exx 1.5 F:  
Codes:



F-Exx 3.0 F:



F-Exx 8.0 F:



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“

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🌐 <http://www.f-exx.de>

📺 <http://www.youtube.com/user/TectroSMTGmbH>