

## FSS TECHNICAL SHEET PORTABLE ESP INTERNATIONAL SRL

### PRODUCT DESCRIPTION AND SPECIFICATIONS

FSS – FIRE SUPPRESSION SYSTEMS is a manual, portable aerosol inhibitor with remarkable extinguishing capability. It has very low toxicity and is environmentally safe. The device is a small, compact, lightweight cylinder: the upper part of the device is a metal tube containing the extinguishing charge. The lower part of the device is composed of plastic and serves as a support handle.

The use of a potassium powder jet – a unique method among fire extinguishers – involves the vaporization of the powder in the environment followed by the condensation of its extinguishing substance. The product works by interrupting a fire’s chain of reaction (the “auto-catalyst” of the fire). The device is composed of stable, solid minerals; it does not contain gas and is not pressurized. The aerosol-like jet is only produced when the charger is stricken with its base. The produced aerosol jet is essentially an inert salt that emits gas already present in the atmosphere.



This process allows FSS to extinguish all types of fires through saturation. Its slow bio-degradation in the environment furthers the prevention of subsequent fires.

The extinguishing process involves two different reactions: one is physical and the other, chemical. **The physical reaction** relates to potassium’s tendency to oxidize rapidly in air. When in contact with air, alkaline salts consume great quantities of oxygen, thus depriving fires of oxygen. **The chemical reaction** is created through the stable link between potassium particles and the fire’s combustion particles.

Through the two reactions, a quick oxidation process takes place, immediately transforming the jet from a solid state into a gaseous state which frees the potassium particles. These atoms are able to intercept and interrupt any other free particles produced by the fire’s chain reaction combustion process. Potassium has strong inhibitor qualities, due to its weak ionization energies.



### FEATURES

FSS potential impact on the environment and on users:

- ODP Ozone Depletion Potential = zero
- ATL Atmospheric Life Time = zero
- Activation time: Immediate
- Usability temperature: from -140° F to +320° F
- Granulometry: from 2 to 4 microns
- Steam: none
- Residue after use: negligible
- Does not produce any “organic accumulation”
- Environmentally safe
- The device is not pressurized
- The device is not considered hazardous material
- GWP Global Warming Potential = zero
- Electric conductivity: none
- Electrostatic discharge: none
- Usability humidity: up to 98% U.R.
- Corrosiveness: none
- Thermal shock: none
- Not dangerous to human health
- Negligible toxicity
- Commercial warranty: 3 years
- The device does not need to be tested
- The device does not need maintenance



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### PORTABLE MODELS AND APPLICATIONS

MODEL	DIMENSIONS	JET EMISSION TIME
<b>FSS 25 SEC</b>	approximately 10in long (25cm) x 1.3in Ø (3cm); Weight: approximately 0.5lb (250 gr)	Jet emission time: approx. 25 seconds active
<b>FSS 50 SEC</b>	approximately 10.2in long (25cm) x 1.3in Ø (3cm); Weight: approximately 0.6lb (300gr)	Jet emission time: approx. 50 seconds active
<b>FSS 100 SEC</b>	approximately 12.9in long (33cm) x 1.3in Ø (3,5cm); Weight: approximately 1.2lb (500gr)	Jet emission time: approx. 100 seconds active

Due to its fast activation and response time, FSS is suitable for use in indoor and outdoor applications such as:

- HOMES
- OFFICES
- TELECOMMUNICATION AND PROCESS CONTROL ROOMS
- CARS
- RVS
- CAMPSITES
- TRUCKS
- SMALL BOATS
- WORKSHOPS

FSS is capable of extinguishing fires in different classes:

- Class A: Solid material, ordinary combustibles, such as wood, paper, fabric, plastics etc.
- Class B: Flammable liquids, such as gasoline, oil based paints, solvents, alcohol, acetone, etc.
- Class C: Gaseous category: GLP, methane, acetylene, etc.
- Class E: electrical equipment fires subject to voltages up to 100.000v at a distance of 1m; Cable galleries, distribution cabinets, electronic devices
- Class F: cooking oil and fats

### ESP INTERNATIONAL SRL (MANUFACTURER) EXISTING CERTIFICATIONS AND TEST REPORTS

- ISO 9001:2008 (Standards for quality management systems)
- Declaration of CE Conformity (Certifies that product has met EU consumer safety, health or environmental requirements)

#### PRODUCT CERTIFICATION:

- RINA, Registro Italiano Navale, Italian Naval Register (Italy)
- BAM – Bundesanstalt für Materialforschung und – prüfung: Zulassungszeichen, Federal Institute for Materials Research and Testing (Germany)
- **POZHTEST certification body in GOST R system and CFS system** (Russia)
- India - Mumbai Fire Brigade (Electric Panels, Commercial, Retail, Government, Residential, Public and Private Enterprises)
- India - Delhi Fire Services (Government of National Capital Territory of Delhi Headquarters)
- Oman - Royal Oman Police (Directorate General of Civil Defense, Department of Prevention of Fire Hazards)
- South Africa - SAMSA - South African Marine Safety Association (Pleasure Vessels up to 100 GT)
- Zambia - Lusaka City Council (Engineering Services Department), Lusaka Fire Brigade
- Turkey - Turkish Standard Institute (TSE)
- Non-explosive certificate (Italy)



## FSS TECHNICAL SHEET PORTABLE ESP INTERNATIONAL SRL

### TEST REPORTS:

- AFITI, Association for the Promotion of Fire Research and Safety Technology (Spain)
- SABS ESP 004, South African Bureau of Standards (South Africa)
- SABS ESP 005, South African Bureau of Standards (South Africa)
- SABS ESP 100KV, South African Bureau of Standards (South Africa)
- Swiss TS Technical Service AG, Safety and Environmental Technology (Switzerland)
- Science of Materials Department of Chemical Engineering (Italy)
- Ministero delle Infrastrutture e dei Trasporti, Ministry of Transportation (Italy)

*Full reports available upon request*

### HANDLING / STORAGE PARAMETERS

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Normal attention in handling.

In case of unintentional activation of the fire suppressant, wait for the complete aerosol discharge and ventilate the area. Avoid the direct contact of the product with open flames.

Conditions for safe storage, including any incompatibilities:

Store in an environment between -50°C and +80°C (+14°F and +176°F).

Avoid shock, electric currents, static discharge, excessive heat and extended periods of storage at temperature greater than 65°.

Packaging in cardboard boxes; do not pile the boxes higher than 2 mt.

Medical attention is unnecessary.

### TRANSPORTATION CLASSIFICATION CODES

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Transport by railway (RID/ADR)	ADR 4.1 ; UN CODE 3178, PACKING GROUP III	Passenger aircraft rail: 25kg
Transport by sea (MDD rule)	ADR 4.1 ; UN CODE 3178, PACKING GROUP III	F- A, S- Q
Transport by plane (ICAO-IATA rule)	ADR 4.1 ; UN CODE 3178, PACKING GROUP III	Cargo aircraft rail: 100kg
UN Identification Code number	UN 3178	

### DISCLAIMER

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