



# INTRODUCTION (to be cont'd)

ESP International S.r.l., an Italian company, operates domestically and internationally from its sole facility in Villanova d'Asti (AT), Italy, offering products in the field of safety and security, specifically in the field of fire-fighting to support the needs of Governmental Agencies and private organizations.

Our mission and goal is to be the premier provider of innovative fire safety products that:

- Incorporate the latest technology in fire suppression
- Are of the highest quality
- Represent value for money for its customers

In recent years ESP's products and projects have involved many European and international countries, some public bodies and numerous private companies have been able to appreciate and use our products in order to enhance their competitiveness and efficiency through the adoption and use of new technologies.

ESP's Italian patented device FSS - Fire Suppression Systems - is an aid device for extinguishing the fire principle: it is a manual, portable, disposable device that uses the eco-compatible aerosol process.

In the panorama of new generation extinguishing agents, potassium powder aerosols are an innovative product, available for the production of effective, economical and above all ecological fire-fighting systems.

# INTRODUCTION

Aerosol extinguishing agents based on potassium nitrate generate a very effective process of extinguishing the fire principles; an intense nebulization is produced, followed by the condensation of the extinguishing substance. The condensed-aerosol-generating combustion process provides sufficient energy for a rapid discharge and efficient distribution of the aerosol.

FSS is intended for fires in the incipient phase and pre-flashover, for immediate intervention (within 1 to 3 minutes) before the fire spreads too far.

One of the features that characterizes the functionality and ease of use, making it flexible and with a unique purpose, is the suitability for class A, B, C, F and Electrical Fires, for use in indoor and outdoor environments, including electrical equipment subject to voltages up to 100kV, distribution cabinets, electronic devices, etc..

FSS is intended for fires in the initial stage, in particular having the capability of suppressing them in confined spaces without human presence (activation of the unit will suffice) .

The device is composed of stable, solid minerals; it does not contain gas and is not pressurized.

The produced aerosol jet is essentially an inert salt that emits gas already present in the atmosphere.

This process allows FSS to extinguish fires through saturation.

In case of need, the user is not disoriented, i.e. he should not ask the question if he is using the right fire extinguisher for the right category of fire on which he is intervening.

# PRODUCT

- Long lasting, it works actively up to 100 seconds, according to the models
- Removes the flame free radicals and extinguishes fire depleting negligible amount of oxygen
- Inhibits the chemical process of fire
- Ozone and environment friendly. Does not have any detrimental effect on life on our planet
- Savings on waste disposal
- Ultra-portable, compact (appealing size)
- No maintenance required, i.e. economical in comparison to conventional fire suppressants
- Toxic by-products of the combustion are extremely low
- Negligible residue after use
- No damage to or destruction of machinery and equipment by the fire extinguishing agent
- One-time use extinguishing product, extinguishing agent is only generated when required
- Non pressurized (no danger from pressurized containers which can explode or malfunction)
- It can safely be stored for easy access in an emergency
- Safety enhancement product
- Long lasting emission time furthers the prevention of multiple fires
- ODP Ozone Depletion Potential = zero;
- GWP Global Warming Potential = zero;
- ALT Atmospheric Life Time = negligible



# MODELS

- Model 50 Sec ESP 004  
Length cm 25, Ø cm. 3, weight 215 gr.  
Discharge time: 50 seconds
- Model 50 Sec N ESP 004  
Length cm 25, Ø cm. 3, weight 260 gr.  
Discharge time: 50 seconds
- Model 100 Sec ESP 005  
Length cm 33, Ø cm. 3,5, weight 365 gr.  
Discharge time: 100 seconds



**Professional use:**  
*Model 50 sec.*

**Specifications:**

- \* Emission Time: 50 Seconds
- \* Length: 25.9 cm
- \* Diameter: 3.3 cm
- \* Weight: 215 grams

**The FSS is safe**

Small and light weight, the FSS is environmentally friendly and can safely be stored for easy access in an emergency. The FSS fire extinguisher will help you to contain a fire, preventing it from becoming a threat to life or property.



**Professional use:**  
*Model 50 sec. New*

**Specifications:**

- \* Emission Time: 50 Seconds
- \* Length: 26.7 cm
- \* Diameter: 4.0 cm
- \* Weight: 260 grams

**The FSS is efficient**

The FSS fire extinguisher is a simple and easy way to ensure that you are prepared in the event of a fire in your home, your office or your vehicle. It weighs far less than a conventional fire extinguisher and can operate for longer. And best of all, there is NO residue left behind after use.



**Industrial use:**  
*Model 100 sec.*

**Specifications:**

- \* Emission Time: 100 Seconds
- \* Length: 31 cm
- \* Diameter: 4.0 cm
- \* Weight: 365 grams

**The FSS is economical**

No servicing, refilling, checks or maintenance. No danger from pressurized containers which can explode or malfunction. Store the FSS fire extinguisher in an easily accessible place. Point the nozzle at the base of the flames to smother the fire at its core.

Warning: Do not touch metal cylinder and after use due to risk of burn. Keep out of reach of children. Do not point aerosol jet at people. The product does not extinguish live coal. Do not disassemble.

**Extinguishes Class A (solid combustible), Class B (liquid and gas combustible) and Class C (electrical fires on equipment up to 100.000 V) flames.**






# FIRE RATINGS



## Class A

Solid combustible materials such as wood, paper, fabric, plastics, etc..



## Class B

Liquid combustible materials, oil, benzene, resin, organic, solvents, alcohol, etc..



## Class C

Gaseous combustible material, GLP, methanol, acetylene, etc..



## Class E

Electrical equipment fires subject to voltages up to 100,000V, cable galleries, distribution galleries, etc..










## Class F

Cooking oil and fats

# A COMPARISON...

## Benefit Analysis

EXTINGUISHER TYPE:	ABC POWDER fire extinguishers	AFF FOAM fire extinguishers	CO2 Fire extinguishers	WET CHEMICAL fire extinguishers	WATER fire extinguishers	WATER MIST fire extinguishers	FSS - FIRE SUPPRESSION SYSTEMS
Agent	powder	AFFF/FFFP	carbon dioxide	potassium carbonate	H2O	H2O	potassium nitrate based
Residue	residue	residue	no residue	residue	residue	residue	negligible residue
Models	1kg / 2kg	2l	2kg	6l	3l	6l	FSS 25 SEC FSS 50 SEC FSS 50 SECN FSS 100 SEC
Weight	3,5kg	3,5kg	3,5kg	10kg	5kg	10kg	170gr (25 sec) 215gr (50 sec) 260gr (50secN) 365gr (100 sec)
Discharge time	7 sec / 11 sec	20 sec	12 sec	50 sec	10 sec	40 sec	FSS 25 SEC FSS 50 SEC FSS 50 SECN FSS 100 SEC
Maintenance	annually	annually	annually	annually	annually	annually	No servicing, refilling, check or maintenance required
Warranty	discretionary by the manufacturer	discretionary by the manufacturer	discretionary by the manufacturer	discretionary by the manufacturer	discretionary by the manufacturer	discretionary by the manufacturer	3 years warranty
Pressure	YES	YES	YES	YES	YES	YES	NON PRESSURIZED
Fire Classification							 Tested for class A, B, C, F and Electrical equipment fires subject to voltages up to 100.000V; 5F

# TECHNICAL SHEET

- ODP Ozone Depletion Potential = zero
- ATL Atmospheric Lifetime = zero
- GWP Global Warming Potential = zero
- Usability temperature: -160° C to +160° C
- Granulometry: from 2 to 4 microns
- Steam: none
- Residue after use: negligible
- No organic accumulation
- Environmentally Safe
- Non pressurized
- Non-Hazardous
- Electric Conductibility: none
- Electrostatic discharge: none
- Usability humidity: up to 98 % U.R.
- Corrosiveness: none
- Thermal Shock : none
- Toxicity: negligible
- No maintenance, no testing required



# SDS


**MATERIAL SAFETY DATA SHEET**  
Conform to Regulation (EC) No. 1272/2008 (CLP)

SECTION 1: Identification of the substance/mixture and of the Company /Undertaking	
1.1. Product name/ Trade name	FSS - FIRE SUPPRESSION SYSTEMS
1.2. Material uses	Fire suppressants
1.3. Details of the supplier of the safety data sheet	<p>ESP International Srl Strada Farnesiana 47 29122 Piacenza (PC) – Italy</p> <p>Manufacturing Plant: Strada per Chieri, no. 109 14019 Villanova d'Asti, AT – Italy Phone +390141- 945628 Fax +390141- 946671 Email: <a href="mailto:info@fss-esp.com">info@fss-esp.com</a> Website: <a href="http://www.fss-esp.com">www.fss-esp.com</a></p>
1.4. Emergency telephone number	<p>POC: Mr. Enzo Perma telephone +39 0141 - 945628 <a href="mailto:e.perma@fss-esp.com">e.perma@fss-esp.com</a></p>

SECTION 2: Hazard Identification					
2.1. Classification of the substances or mixture					
Index #	Component	CAS NUMBER	EC NUMBER	CLP Classification Regulation EEC no. 1272/2008	DSD Classification 67/548/EEC
//	Potassium Nitrate	7757-79-1	231-818-8	2.14/3 Ox. Sol.3 H272	O. Oxidizer
//	DCDA	461-58-5	207-312-8	//	//
//	Organic resin	9003-35-4	500-005-2	//	//

Adverse physicochemical, human health and environmental effects: No other hazards

2.2. Label elements  
Pictogram: GHS03



Hazard Class and Category: Oxidizing solid, hazard category 3  
Signal Word: Warning  
Hazard Statement: H272: may intensify fire; oxidizer

# CERTIFICATES..

## CE DECLARATION OF CONFORMITY

**THE MANUFACTURER:** ESP INTERNATIONAL SRL  
 Strada Per Chieri, 109  
 14019 Villanova d'Asti, (AT) - ITALIA  
 Tel. +39.0141.945628 Fax +39.0141.946671  
 Web: [www.fss-esp.com](http://www.fss-esp.com)  
 Cod. Fiscale e P.IVA n° 09141570961  
 Rea n° MI-2071346

Declares under its responsibility that the product(s) below:

NAME	FIRE SUPPRESSANT FLAME INHIBITOR ESP 004 - ESP 005
OEM	ESP INTERNATIONAL S.r.l.
FIRST YEAR OF COMMERCIALIZATION	2005

have been tested and are in conformity with the applicable requirements of the following listed Standards & Directives:

- Legislative Decree No. 206/2005 (Consumer Code)
- 2001/95/CE dated 3.12.2001 (General Product Safety Directive)
- L.C. dated 13 March 1987 n. 4936/4115/3 (Portable Fire extinguishers)
- R.I.N.A. Homologation (Italian Naval Registry): Extinguishing device for pleasure yacht. Fire class 8B - C, 13B - C.
- Ministerial Decree 8/3/1985 (Directive on urgent measures for the prevention of fires)
- Directive 93/15/EEC 5 April 1993 on the harmonization of the provisions relating to the placing on the market and supervision of explosives for civil uses
- Classified Non-Expanding as per Ministerial Decree 04/04/1973 by Homeland Security 557/PAS.7317-XV.J (3766) (Prevention and monitoring, possession of illegal fireworks and classified as non-expanding)

The Manufacturer prohibits the use of the product(s) in a manner contrary to what is stated in the user instructions.

The referenced person c/o ESP INTERNATIONAL SRL is Mr. Enzo Perna, Quality Mgr.

REF. # ESP15Ed.01.A14

Enzo Testa /CEO and Legal Representative

Villanova, 30.9.2015

ZERTIFIKAT ◆ CERTIFICATE ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT



## CERTIFICATO

Nr. 50 100 13212 - Rev.003

Si attesta che / This is to certify that

IL SISTEMA QUALITÀ DI  
THE QUALITY SYSTEM OF

**ESP INTERNATIONAL S.r.l.**

SEDE LEGALE E OPERATIVA:  
REGISTERED OFFICE AND OPERATIONAL SITE:

VIA IV NOVEMBRE 132  
IT - 29122 PIACENZA (PC)

SEDE OPERATIVA:  
OPERATIONAL SITE:

STRADA STATALE CHIERI 109 REGIONE VALDICHIESA  
IT - 14019 VILLANOVA D'ASTI (AT)

È CONFORME AI REQUISITI DELLA NORMA  
HAS BEEN FOUND TO COMPLY WITH THE REQUIREMENTS OF

**UNI EN ISO 9001:2015**

QUESTO CERTIFICATO È VALIDO PER IL SEGUENTE CAMPO DI APPLICAZIONE  
THIS CERTIFICATE IS VALID FOR THE FOLLOWING SCOPE

**Progettazione e fabbricazione di inibitori di fiamma  
(IAF 18)**

**Design and manufacture of flame inhibitors  
(IAF 18)**



Per l'Organismo di Certificazione  
For the Certification Body  
TUV Italia S.r.l.

Validità / Validity

Dal / From: 2018-10-13

A / To: 2021-10-12

SGQ N° 049A  
Numero degli uffici di Manutenzione  
EA, VAF e IAC  
Sigillo di EA, VAF e IAC Initial  
Registration Agreement

Data emissione / Printing Date  
**Andrea Coscia**  
Direttore Divisione Business Assurance  
2018-10-12

PRIMA CERTIFICAZIONE / FIRST CERTIFICATION: 2015-10-12

"LA VALIDITÀ DEL PRESENTE CERTIFICATO È SOTTOPOSTA A SORVEGLIANZA PERIODICA A 12 MESI E AL RESAME COMPLETO DEL SISTEMA DI GESTIONE AZIENDALE CON FREQUENZA TRIENNALE"  
"THE VALIDITY OF THE PRESENT CERTIFICATE DEPENDS ON THE ANNUAL SURVEILLANCE EVERY 12 MONTHS AND ON THE COMPLETE REVIEW OF COMPANY'S MANAGEMENT SYSTEM AFTER THREE-YEARS"

TUV Italia S.r.l. • Gruppo TÜV SÜD • Via Carducci 125, Pal. 23 • 20099 Sesto San Giovanni (MI) • Italia • [www.tuv.it](http://www.tuv.it) TÜV®

Genova, 07 APR. 2006  
P.a.c. G.DRECO - 510.2518154



Ministero  
delle Infrastrutture e dei Trasporti  
Comando Generale  
del Corpo delle Capitanerie di Porto  
Reparto VI - Uff. II  
Sicurezza della Navigazione  
Indirizzo telegrafico: MARICOGECAP  
Prot. n. 867 SL/07/JUR.II-Sez. II

Al Società ESP, s.r.l  
Corso Traiano 159  
TORINO

e.p.c. Registro Italiano Navale  
Via Corsica,12  
16100 - Genova

Argomento: Inibitore di fiamma denominato ESP 005 della ditta ESP Euro Spare parts

(Stato emanato e  
protocollo, sigillato e  
registrato)

In merito alla richiesta di codesta società con la nota in data 21.12.2005, si comunica che per la nautica da diporto è previsto l'uso di estintori omologati dall'Ente tecnico.

Il Registro Italiano Navale con la nota prot.n° FPE/PMO/17074 in data 31 marzo 2006, ha riconosciuto l'inibitore di fiamma ESP 005 equivalente ad un estintore di classe 13 B, utilizzabile ai sensi d.m. 21 gennaio 1994,n.232, sulle unità da diporto.

Ciò premesso, si ritiene che il dispositivo in argomento, avendo ottenuto il riconoscimento di equivalenza da parte dell'Ente Tecnico, possa essere utilizzato sulle unità da diporto.

IL CAPO REPARTO  
Contrammiraglio (CP)  
Alberto STEFAMINI

# CERTIFICATES....



STATEMENT OF COMPLIANCE  
No. FPE102521CS/001

This is to certify that the product identified below satisfies the requirements of the standards quoted under "Reference standards"

<i>Description</i>	Extinguishing device
<i>Type</i>	FSS ESP 004
<i>Applicant</i>	ESP INTERNATIONAL SRL STRADA FARNESINA 47 29122 Piacenza (PC) ITALY
<i>Manufacturer</i>	ESP INTERNATIONAL SRL
<i>Place of manufacture</i>	STRADA PER CHERI 109 14019 Villanova D'Asti (AT) ITALY
<i>Reference standards</i>	Rules for Testing and Certification of Marine Materials and Equipment

Issued in Genoa on March 25, 2021. This Certificate is valid until March 24, 2026

RINA Services S.p.A.  
Davide Campora

This certificate consists of this page and 1 enclosure

RINA Services S.p.A.  
Via Cornica, 12 - 16128 Genova  
Tel +39 010 53851  
Fax +39 010 5351000

Digitally signed by RINA Services S.p.A. on 23 Mar 2021. No handwritten signature is provided.



STATEMENT OF COMPLIANCE  
No. FPE102521CS/002

This is to certify that the product identified below satisfies the requirements of the standards quoted under "Reference standards"

<i>Description</i>	Extinguishing device
<i>Type</i>	FSS ESP 005
<i>Applicant</i>	ESP INTERNATIONAL SRL STRADA FARNESINA 47 29122 Piacenza (PC) ITALY
<i>Manufacturer</i>	ESP INTERNATIONAL SRL
<i>Place of manufacture</i>	STRADA PER CHERI 109 14019 VILLANOVA D'ASTI (AT) ITALY
<i>Reference standards</i>	Rules for Testing and Certification of Marine Materials and Equipment

Issued in Genoa on March 25, 2021. This Certificate is valid until March 24, 2026

RINA Services S.p.A.  
Davide Campora

This certificate consists of this page and 1 enclosure

RINA Services S.p.A.  
Via Cornica, 12 - 16128 Genova  
Tel +39 010 53851  
Fax +39 010 5351000

Digitally signed by RINA Services S.p.A. on 23 Mar 2021. No handwritten signature is provided.

# CERTIFICATIONS AND HOMOLOGATIONS

Country	Certifications & Homologations
Italy	RINA - Registro Italiano Navale (Italian Naval Registry)
Germany	BAM Federal Institute for Materials Research and Testing
Russia	EMERCOM Russian Federation Ministry for Civil Defense
India	Delhi Fire Services (Government of National Capital Territory of Delhi HQ) and Mumbai Fire Brigade
Oman	Royal Oman Police (Directorate General of Civil Defense, Department of Prevention of Fire)
Switzerland	Swiss TS TÜV Technical Services AG Safety & Environmental Technology
Hungary	NDGDM -National Directorate General Disaster Management. Certif.# 660/63/2013 – 660/64/2016.
Slovakia	KONŠTRUKTA - Defence, a.s. , Certificate no. PA 1395-0368/2015
South Africa	SAMSA - South African Marine safety Association (Pleasure Vessels up to 100 GT)
Australia	BSI – tested in accordance with AS/NZS 1850: 2009 for Class 2B – 1C – 1F. The product complies with relevant Clauses of EN 3 -7 for Class A & E.
Vietnam	HCMC - Police Department of Fire Fighting and Prevention
Russia	Russia: certificate no. C-IT.ПБ21.В.00724 (mandatory) in compliance with Federal Law 22.07.2008 and technical rules GOST R 53285-2009.
Zambia	Lusaka City Council (Engineering Services Department), Lusaka Fire Brigade

# TESTS & INTERNATIONAL STANDARDS

Country	Tests & International standards
Spain	AFITI-Licof (Asociacion para el Fomento del la Investigacion y la Tecnologia de la Seguridad contra Incendios) – (Centro de Ensayos y Investigacion del Fuego) Association for the Promotion of Fire Research and Safety Technology
South Africa	SABS test report no. HV/105240 Rated voltage: 100kV
Italy	Prefettura – Ufficio Territoriale del Governo di Torino (Prefecture in Turin)
Italy	Universita' di Torino, Dipartimento di Scienza dei Materiali ed Ingegneria Chimica (University in Turin, Science of Materials Department of Chemical Engineering)
Italy	Homeland Security, Ministero dell'Interno, Dipartimento Vigili del Fuoco, dipvvf.DCPREV.REGISTRO UFFICIALE U.0010989.09-08-2018
Italy	-LETTER Protocol 0014229 of November 19, 2012 concerning the "Use of Products and Systems for Fire Protection in Buildings". Field of application: for innovative products, currently without a specific harmonized technical specification.
Italy	Ministero delle Infrastrutture e dei Trasporti (Ministry of Infrastructure and Transportation)

# SUITABILITY

*Suitable for:*

- HOMES
- CARS
- ELECTRICAL CABINETS
- OFFICES
- TRUCKS AND EARTHMOVING EQUIPMENT
- BOATS
- CAMPSITES
- WORKSHOPS
- SERVER ROOMS
- CAMPING





**ESP INTERNATIONAL SRL**  
STRADA PER CHERI 109  
14019 VILLANOVA D'ASTI, AT  
ITALY



[www.fss-esp.com](http://www.fss-esp.com)

