SDS Date: 11/11/2024 Rev. No 14

SAFETY DATA SHEET
Conform to Regulation (UE) n. 2020/878

SECTION 1: Identification of the substance/mixture and of the Company /Undertaking	
1.1. Product identifier Code Product name	 FSS FSS-FIRE SUPPRESSION SYSTEMS
1.2. Relevant identified uses of the substance or mixture and uses advised against	Fire suppressants for consumer, professional, industrial applications
1.3. UFI Code (unique formula identifier)	QS63-1PHP-U0600-UNSY
1.4. Details of the supplier of the safety data sheet Name Full address District and Country	 ESP International Srl Strada Farnesiana 47 29122 Piacenza (PC) – Italy Manufacturing Plant: Strada per Chieri, no. 109 14019 Villanova d'Asti, AT – Italy Phone +39/0141- 945628 Fax +39/0141- 946671
E-mail address of the competent person responsible for the SDS	Email: info@fss-esp.com POC: Mr. Enzo Perna e-mail: e.perna@fss-esp.com
1.5. Emergency telephone number	tel. +39 0141 945628 ESP International Srl (from Monday to Friday from 8:00 to 17:00) tel. 112 European Emergency Number (24hrs)

SECTION 2: Hazard Identification

2.1. Classification of the substance or mixture

OSHA regulatory status: all 3 chemicals listed below are not stored as raw loose powder but homogenously blended and pressed into a single solid forming compound pellet. Exposure to raw dust from the pellet is very limited which may contain any of the 3 chemicals listed in Section 3. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet. **Not classified as Hazardous according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) criteria.** This product is considered as article and is as such exempted from the UN-GHS classification requirements. The classification based on the hazardous substances contained in the product is provided below for information purposes only.

Hazard Classification and indication: Oxidizing solid, hazard category 3

Hazard Statement: H272: may intensify fire; oxidizer

2.2. Label elements

Signal word: warning



General Statements:

P102 Keep out of the reach of children

P103 Read label instructions before use

Precautionary Statement Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces. — Do not smoke.
P221 Take any precaution and keep away from combustible material
P243 Avoid electrostatic loads
P250 Avoid crash and strike
P273 Do not waste the product and/or the casing

Precautionary Statement Response: Fluid Aerosol

P302+P350+P313 In case of skin contact: may cause redness or irritation. Rinse cautiously with running water. If skin irritation occurs get medical advice/attention.
P304+P340+P313 In case of inhalation: remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention for any breathing difficulty.
P305+P351+P313 In case of eye contact: may cause redness or irritation. Rinse cautiously with running water for several minutes. If eye irritation persists, get medical advice/attention.
P314 Seek medical attention for further treatment, observation, and support if necessary.
P370+P380 In the event of a fire, evacuate the area and inform emergency services.
Ignition of FSS Fire Suppression Systems produces a fire suppression aerosol.
P370+P378 Water may be used as an additional suppression agent, as well as powder extinguisher and/or CO_2 extinguisher.

Precautionary Statement Disposal:

P501 Disposal should be in accordance with applicable national, state and local environmental control regulations.

2.3. Other Hazards

The substance does not have persistence, bioaccumulation, and toxicity (PBT) properties and is not very persistent and very bio accumulative. The substance does not have endocrine disrupting properties.

SECTION 3: Composition/Information on Ingredients

3.1. **Substances**	**CAS #**	**EC #**	**CLP Classification Regulation EEC no. 1272/2008**	**%**	**Comments**
Potassium Nitrate	7757-79-1	231-818-8	GHS03 Wng 2.14/3 Ox. Sol.3 H272 EUH 210	≥43	This article consists of an upper metal cylinder containing the extinguishing charge (polymerized mixture of organic and inorganic salts) and a lower plastic support handle. The two components necessary for activation of the product are located at opposite ends of the device. Therefore, the device cannot be accidentally activated during transport or storage.
DCDA	461-58-5	207-312-8	//	≥32	
Organic resin	9003-35-4	500-005-2	//	≥25	

Extinguishing Charge:	Composition of the extinguishing charge is contained within a sealed aluminum casing. Polymerized mixture of Organic and Inorganic Salts
Discharge time:	From 50sec to 100sec (± 10% tolerance)
Fluid Aerosol:	Particulates of Potassium Salts, Nitrogen and Water Vapor
PBT	N/A

vPvB	N/A
3.2. Other denomination:	Portable Condensed aerosol fire extinguisher

SECTION 4: First Aid Measures

4.1. Description of first aid measures Body	Extinguishing charge: None. Contact is impossible when the flame inhibitor is assembled. Do not touch the tube of the dispenser during/after use. Medical attention is unnecessary.
Skin Contact / Eyes Contact	Fluid Aerosol: after contact, wash/flush immediately with running water. Medical attention is necessary in case of direct contact burns
4.2. Most important symptoms and effects, both acute and delayed	No information available.
4.3. Indication of any immediate medical attention and special treatment needed	Seek medical attention for further treatment, observation, and support, if necessary.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media
Suitable extinguishing media:
Water.
Carbon dioxide (CO2)
CO2 or Dry chemical fire extinguishers.

5.2. Special hazards arising from the substance or mixture	Do not inhale combustion gases.
Flammability of the product	Beginning of self-ignition phenomena over 300°C. Medical attention is unnecessary. In the event of a fire, evacuate the area and inform emergency services. Ignition of FSS - Fire Suppression Systems produces a fire suppression aerosol.
5.3 Advice for fire-fighters	No specific measures are required as the product itself is a fire-fighting agent. Use breathing apparatus if required

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment, and emergency procedures
No particular measures. See protective measures under point 7 and 8
6.2. Environmental precautions
No particular action: the emission of the extinguishing charge when the fire suppressant is assembled is impossible, as it is inert material. See protective measures under point 7 and 8.
6.3. Methods and material for containment and cleaning up
If the devices come out from packaging, they can be safely recovered by hand and should be inspected for damage prior to repacking. Suspect or damaged articles should be labelled and consigned for correct disposal.
6.4. Reference to other sections
Information given in sections 8 and 13

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

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.

7.2. Conditions for safe storage, including any incompatibilities.
Store in accordance with local regulations. Store in an environment not exposed to sunlight/rain. Keep dry.
Prevent product temperatures above 80 °C and below -50 °C.
Avoid shock, electric currents, static discharge, excessive heat, and extended periods of storage at temperature greater than 80°.
Medical attention is unnecessary.

7.3 Specific end use(s)
None in particular

SECTION 8: Exposure Controls, Personal Protection	
8.1 Control parameters	Potassium nitrate - Index: N/A, CAS: 7757-79-1, EC No: 231-818-8 DCDA - Index: N/A, CAS: 461-58-5, EC No: 207-312-8 Organic Resin - Index: N/A, CAS: 9003-35-4, EC No: 500-005-2 TLV TWA: N.A.
8.2 Exposure controls	
Respiratory protection	Ventilate area completely after discharge. Do not enter the area prior to complete venting of enclosures. Use filter mask as necessary during clean-up
Hand protection	Wear gloves if necessary
Eye protection	Safety glasses are advisable if necessary
Skin protection	N/A
Personal protection:	No individual protection. Stick to the instructions legible on the product and inside each packaging box.
Occupational exposure limits:	No specific occupational exposure limit.
Environmental exposure controls:	No information available.

SECTION 9: Physical and Chemical Properties 9.1. Information on basic physical and chemical properties	
Appearance and odor of aerosol:	Beige to white in color. Odorless.
Auto-ignition temperature:	about 350°C
Solubility in water:	Slightly soluble
Appearance of device:	steel cylinder High up to 330 mm in length and of mm 33 diameter
Extinguishing charge physical state:	from 20°C solid to 0°C solid
Usability Temperature:	-140°F to +320°F
Granulometry:	From 2 to 4 microns
Steam:	None
Conductivity:	Nonconductor
Fluid Aerosol physical state:	Gaseous
Exit temperature:	high, safety distance from supply source 1mt
9.2. Other information	
Conductivity	Nonconductor up to 100.000 Volt
Electrostatic Discharge	None
Usability Humidity	up to 98 % U.R
Corrosiveness	None

Thermal Shock	None
Residue after use	Negligible

SECTION 10: Stability and Reactivity

10.1 Reactivity.
No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability.
The product is stable under normal storage and temperature conditions.

10.3 Possibility of hazardous reactions.
None identified. During use no dangerous decomposition products are produced.

10.4 Conditions to avoid.
No specific data

10.5 Incompatible materials
No specific data

10.6 Hazardous decomposition products:
None

Note: These devices are extremely stable below 125°C. They should be protected from fire, sources of electrical power, shock, and high temperatures.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects
Toxic by-products of combustion are extremely low.
Main by-products are listed below with 15-minute TWA values for a concentration of 50gr/m3:

Gas	15-minute Time Weighted Average in parts per million
CO (carbon monoxide)	57 ppm
NOx (nitrogen dioxide)	<5 ppm
Aerosol (particulates)	8,5 mg/m3

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Reproductive toxicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.
Symptoms related to the physical, chemical and toxicological characteristics
Eye contact No specific data
Skin contact No specific data.
Ingestion No specific data
Inhalation No specific data.
Delayed and immediate effects and also chronic effects from short- and long-term exposure: N/A
11.2 Information on other hazard
Based on the the available data, the substance is not listed in the main European lists of potential or suspected endocrine disruptors

with human health effects under evaluation.

SECTION 12: Ecological Information

Use this product according to good working practices.

12.1 Toxicity
These devices present no ecological hazards.
12.1.1. The aerosol produced after ignition has the following characteristics:
ODP Ozone Depletion Potential = 0
GWP Global Warming Potential = 0
ATL Atmospheric Lifetime = negligible

12.2. Persistence and degradability No information available.

12.3. Bio accumulative potential No information available

12.4. Mobility in soil No information available

12.5. Results of PBT and vPvB assessment
No PBT information available.
No vPvB information available

12.6. Other adverse effects
The substance does not have persistence, bioaccumulation, and toxicity (PBT) properties and is not very persistent and very bio accumulative. The substance does not have endocrine disrupting properties

SECTION 13: Disposal Considerations

13.1. Waste treatment methods
Disposal should be in accordance with applicable national, state and local environmental control regulations.

SECTION 14: Transport Information

14.1. UN Number ADR-RID-AND-IMDG-IATA	UN 3178
14.2. UN proper shipping name ADR-RID-AND-IMDG-IATA	Flammable solid, inorganic, n.o.s.
14.3. Transport Hazard Class ADR-RID-AND-IMDG-IATA	Classification 4.1
14.4 Packing Group ADR-RID-AND-IMDG IATA	III Passenger aircraft rail: 25kg Cargo aircraft: 100kg
14.5. Environmental hazards Environment Marine pollutant	 NONE NO
14.6. Special precautions for user	The goods should be transported in the original packaging and in any case in packagings made of material resistant to their content and not likely to generate

	reactions.
14.7.Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable

SECTION 15: Other Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Regulation EU 2023/988 on general product safety
Dir. 98/24/EC (Risks related to chemical agents at work).
Dir. 2000/39/EC (Occupational exposure limit values);
Dir. 2006/8/CE.

This preparation is not classified as dangerous according to European Union legislation.
Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work.

15.2. Chemical Safety Assessment
Information N/A.

SECTION 16: Other Information

- Customs Tariff Number 84241000

Main bibliographic sources:

- ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities
- Analysis and test report by the Polytechnic of Turin, Science of Material & Chemical Engineering Department
- GOST R 53285-2009" Fire equipment generators of fire extinguishing aerosol portable technical requirements. Test methods"

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATL: Atmospheric Lifetime
CAS: Chemical Abstracts Service (division of the American Chemical Society).
CLP: Classification, Labeling, Packaging. Regulation No. 1272/2008.
DCDA: Dicyandiamide
EINECS: European Inventory of Existing Commercial Chemical Substances.
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
GWP: Global Warming Potential
HS Code: Harmonized System Code
IATA: International Air Transport Association.
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO: International Civil Aviation Organization.
IMDG: International Maritime Code for Dangerous Goods.
N/A.: Not available
ODP: Ozone Depletion Potential
PBT: Persistent bio accumulative and Toxic
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
TLV: Threshold Limiting Value.
TWATLV: Threshold Limit Value for the Time Weighted Average 8-hour day. (ACGIH Standard).
vPvB: Very Persistent and very bio accumulative

Comply with Manufacturer's installation and maintenance procedures EUH210: Safety data sheet available on request.	
Validated and verified by	Mr. Enzo Perna, Quality Mgr.
Revision #14	November 11, 2024

Notice to reader: information presented herein has been compiled from sources considered to be dependable and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so. Nothing herein is to be construed as recommending any practice or any product in violation of any patent or in violation of any law and regulation. It is the user's responsibility to determine for himself the suitability of any material for a specific purpose and to adopt such safety precautions as may be necessary.