FirePro Systems Ltd.
8 Faleas Street
CY4101 Limassol Cyprus
Telephone: + 357 25 379999

SDS Preparation Date:22/12/2022

SECTION 1: IDENTIFICATION

1.1 Product Identifier	FirePro
Product code	FirePro Condensed Aerosol Generators
1.2 Relevant identified uses of the substance or mixture and uses advised against	Fire suppression system Recommended restrictions: No restrictions on use known.
1.3 Details of the supplier of the Safety Data Sheet Manufacturer/Supplier:	FirePro Systems Ltd. 8 Faleas Street, CY4101 Limassol, Cyprus Telephone: + 357 25 379999 www.firepro.com
Emergency telephone number:	**+357 25 376146**

SECTION 2: HAZARDS IDENTIFICATION

- Hazards for humans related to the FPC Solid Compound have not been found
- For hazards for humans related to the aerosol released by the solid compound refer to Section 11

Signs and symptoms related to the aerosol phase refer only to acute exposure and/or chronic overexposures while in real life the exposure will be very short (i.e., in the event of an accidental discharge when people do not evacuate on time).

Precautionary statement(s)
Keep away from heat, sparks, open flames, and hot surfaces – No smoking.
Do not subject to grinding, shock, or friction.
In case of fire: Evacuate area.
Fight fire with normal precautions from a reasonable distance. Store in a well-ventilated place. Keep cool.
Dispose of contents and/ or container in accordance with local regulations.

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Product			
Potassium Nitrate	EU Classification	Oxidizer	-
	Hazard Statements	H270	Contact with combustible material may cause or intensify fire
	Precautionary Statements	P210	Keep away from sources of ignition – No Smoking
		P370+P260	In case of fire and/or explosion, do not breathe fumes
Potassium Carbonate	EU Classification	Irritant	-
	Hazard Statements	H302	Harmful if swallowed
		H320+H335+H315	Irritating to eyes, respiratory system and skin
	Precautionary Statements	P305+P351+H338	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
		P282	Wear suitable gloves and eye/ face protection
Magnesium	EU Classification	Flammable	-
	Hazard Statements	H260	Contact with water liberates highly flammable gases
		H250	Spontaneously flammable in air
	Precautionary Statements	P102	Keep out of reach of children
		P223	In case of fire never use water
		P402+P404	Keep container tightly closed and dry
Epoxy Resin Polymer	EU Classification	Irritant	-
	Hazard Statements	H317	May cause sensitization by skin contact
		H413	May cause long-term adverse effects in the aquatic environment
	Precautionary Statements	P302+P352	In case of contact with skin, rinse with water
		P282	Wear suitable gloves and eye/face protection
		P273	Avoid release to the environment. Refer to special instructions/Safety Data Sheets

Other hazards
In case of accidental discharge:
Discharge of Agent can result in a potential hazard to personnel from natural form of agent as high temperatures are developed in close proximity of the discharged unit. Avoid unnecessary exposure. May cause an allergic skin reaction, may cause serious eye irritation and irritation in the respiratory system.

None of the raw materials or post activation products are included in the list of endocrine disruptors chemicals.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Solid Compound

Chemical Name	CAS No	Concentration (%)
Potassium nitrate	7757-79-1	77
Potassium carbonate	584-08-7	4
Magnesium	7439-95-4	<1
Epoxy resin polymer	25068-38-6	18

Aerosol Phase

The below values correspond to a design density of 100g/m^3

Chemical Name	CAS No	Concentration
Particulate Component		
potassium carbonate	584-08-7	10222 mg/ m^3
potassium	7440-09-7	5775 mg/ m^3
Gas component		
carbon dioxide	124-38-9	1.2 vol%
carbon monoxide	630-08-0	<0.1 vol%
ammonia	7664-41-7	612 mg/ m^3
other gases (NO_2, SO_2, H_2S, CH_4)	-	Traces

These values have been assessed in strict laboratory conditions and may change according to the environmental conditions in real life applications. They will remain though below the threshold values related to acute exposure.

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Ingestion:

None required when used as intended. Ingestion is not expected, based upon the current form of the product.

Inhalation:

None required when used as intended.

If aerosol is accidentally discharged and gases, particulates or projections are formed and inhaled, the following treatment may be necessary: Immediately remove the person to fresh air. Obtain medical attention if symptoms develop and persist.

Skin contact:

None required when used as intended.

If aerosol is accidentally discharged, the following treatment may be necessary for skin contact with gases, particulates or projections that may be formed: Remove contaminated clothing. Wash affected areas with soap and water. Seek medical attention if symptoms develop or persist, or if projection has caused any injury. If thermal burns are present: Cool the burn right away by flushing gently flowing, cool water on the area. Cover the wound with sterile dressing. Get medical attention.

Eye contact:

None required when used as intended.

If aerosol is accidentally discharged, the following treatment may be necessary for eye contact with gases, particulates or projections that may be formed. Immediately flush eyes with running water for at least 15 minutes. If irritation persists, get medical attention.

Most important symptoms and effects, both acute and delayed

If aerosol is accidentally discharged, gases, particulates and projections are formed. These gases, particulates and projections contain trace amounts of the components inside the aerosol. These gases, particulates and projections may be irritating to the eyes, skin and respiratory tract. May cause an allergic reaction.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

Suitable extinguishing media
FirePro Condensed Aerosol is an extinguishing medium. As an additional measure, use flooding quantities of water to fight fires.

Unsuitable extinguishing media
None known.

Special hazards arising from the substance or mixture / Conditions of flammability
None known or reported by the manufacturer.

Flammability classification
Non-flammable.

Hazardous combustion products
Carbon oxides, potassium oxides traces, nitrogen oxides.

Special protective equipment and precautions for firefighters
Protective equipment for fire-fighters
Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.
Special fire-fighting procedures
In case of fire: Evacuate the area. Fight fire with normal precautions from a reasonable distance.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spilled solid compound can be collected by hand. No safety measures are needed. Remove all sources of ignition. If a spill occurs in an area where there is a fire burning, evacuate the area.

If aerosol is accidentally discharged, restrict access to the area until complete ventilation and clean-up. Ensure clean-up is conducted by trained personnel after following the instructions of the manufacturer.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling: Keep away from heat, open flames and hot surfaces. - No smoking. Do not subject to excessive friction or mechanical shock. Disassembly/assembly operations shall be conducted only by experienced personnel qualified to perform the task.
Conditions for safe storage: Store in a cool, dry, well ventilated area, away from incompatibles. Keep away from heat. Protect against physical damage. Storage area should be clearly identified, clear of obstruction and accessible only by trained and authorized personnel. No smoking in the area.
Incompatible materials: None known.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

None required when used as intended

Exposure Limits						
Chemical Name	**TWA**	**ACGIH**	**STEL**	**PEL**	**OSHA**	**STEL**
Potassium nitrate	N/Av	N/Av		N/Av	N/Av	
Epoxy resin polymer	N/Av	N/Av		N/Av	N/Av	
Potassium carbonate	N/Av	N/Av		N/Av	N/Av	
Magnesium	N/Av	N/Av		N/Av	N/Av	

Exposure controls in case of accidental discharge of aerosol
Ventilation and engineering measures
If aerosol is accidentally discharged, restrict access to the area until complete ventilation and clean-up. Ensure clean-up is conducted by trained personnel after following the instructions of the manufacturer.

Respiratory protection: NIOSH-approved respirators are recommended. A self-contained breathing apparatus should be used in emergency situations or instances where complete ventilation is not achieved.

Skin protection: Wear protective gloves/clothing if handling a discharged generator prior to cooling.

Eye / face protection: Wear safety goggles or glasses as appropriate for the job.

General hygiene considerations*:* Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Solid. Family of condensed aerosol generators
Odor: Not available
Odor threshold: Not available
pH: Not applicable
Melting/Freezing point: Not available
Initial boiling point and boiling range: Not applicable
Flash point: Not applicable
Flashpoint (Method): Not applicable
Evaporation rate (BuAe = 1): Not applicable
Flammability (solid, gas): Not available
Lower flammable limit (% by vol.): Not available
Upper flammable limit (% by vol.): Not available
Oxidizing properties: Contains oxidizers
Explosive properties: This is a fire suppression device which is not designed to have an explosive effect
Vapor pressure: Not available
Vapor density: Not available
Relative density / Specific gravity: 1.5-1.6 g/cm^3
Solubility in water: partially soluble
Other solubility: Not available
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution: Not applicable
Auto-ignition temperature: 300 °C
Decomposition temperature: Not available
Viscosity: Not applicable
Other physical/chemical comments: None known or reported by the manufacturer

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Non-reactive under normal storage conditions
Chemical stability: Material is stable under normal conditions. Do not subject to grinding, shock or friction
Possibility of hazardous reactions: Hazardous polymerization does not occur
Conditions to avoid: Avoid heat, sparks, open flames and other ignition sources
Incompatible materials: Not known
Hazardous decomposition products: None known, refer to hazardous combustion products in Section 5

SECTION 11: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Toxicological Information		
Short term exposure	Inhaled	Not normally a hazard due to the physical form of the product. None expected under normal conditions. If aerosol is accidentally discharged, gases such as carbon oxides, nitrogen oxides, ammonia and particulates of potassium carbonate, and particulates may be irritating or affecting to the respiratory system.
	Ingestion	None expected under normal conditions or in case of an accidental discharge.
	Skin Contact	Not normally a hazard due to the physical form of the product. If aerosol is accidentally discharged, gases and particulates may be irritating to the skin.
	Eye	Not normally a hazard due to the physical form of the product. None expected under normal conditions. If aerosol is accidentally discharged, gases and particulates may be irritating to the eyes.
Long-term exposure	Long-term exposure not expected.	

Chemical Name	CAS No	DLF
Particulate Component		
potassium carbonate	584-08-7	-
potassium	7440-09-7	-
Gas component		
carbon dioxide	124-38-9	20 vol%
carbon monoxide	630-08-0	0.3 vol%
ammonia	7664-41-7	5000ppm
other gases (NO_2, SO_2, H_2S, CH_4)	-	Traces

Endocrine disrupting properties
Not Listed
Information on other hazards
There is no additional information

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity
Not expected to be harmful to aquatic organisms. Do not release, unmonitored, into the environment.

Ecological Information	
Mobility	Not expected as per available data
Absorption/Desorption	Not expected as per available data
Degradability	Not expected as per available data
Biotic and Abiotic Degradation	Not expected as per available data
Aerobic and Anaerobic Degradation	Not expected as per available data
Persistence	Not expected as per available data
Accumulation	Not expected as per available data
Bioaccumulation Potential	Not expected as per available data
Biomagnification	Not expected as per available data
Short and Long Term Effects on	
Ecotoxicity	Not expected as per available data
Aquatic Organisms	Not expected as per available data
Soil Organisms	Not expected as per available data
Plants and Terrestrial animals	Not expected as per available data
Other Adverse Effects	
Ozone Depleting Potential (ODP)	none
Photochemical Ozone Creation Potential	none
Global Warming Potential (GWP)	none
Effects on Wastewater Treatment Plants	Not expected as per available data

This section presents an assessment of the potential risks to the atmosphere posed by the use of FirePro® as a fire extinguishing agent. The active ingredients for this technology are nonvolatile solids before activation so the ozone-depletion potential (ODP), ALT, and global warming potential (GWP) are all zero. The post-activation constituents of FirePro® have low climate impacts and short ALTs.

SECTION 13: DISPOSAL CONSIDERATIONS

Handling for Disposal: Handle waste according to recommendations in Section 7.
Methods of Disposal: Dispose in accordance with all applicable federal, state, provincial and local regulations.

SECTION 14: TRANSPORT INFORMATION

Air Transport (ICAO-IATA / DGR)			
UN Number	3268		
UN proper shipping name	Safety devices, electrically initiated		
Transport Hazard class	ICAO / IATA Class	9	
	ICAO / IATA Subrisk	Not Applicable	
Environmental hazard	Not Applicable		
Special Precautions for user	Cargo Only Packing Instructions		961
	Cargo Only Maximum Qty/Pack		100 kg
	Passengers and Cargo Packing Instructions		961
	Passenger and Cargo Maximum Qty / Pack		25 kg
Sea Transport (IMDG – Code)			
UN Number	3268		
Packing Group	Not Applicable		
UN proper shipping name	Safety devices, electrically initiated		
Environmental hazard	Not Applicable		
Transport hazard	Class 9		
Special Provisions	280, 289		
Land transport (ADR)			
UN Number	3268		
Packing Group	Not Applicable		
Special Provisions	280,289		

SECTION 15: REGULATORY INFORMATION

Limit Values for exposure	None listed
EINECS Status	All components are included in EINECS inventories
Restrictions on Marketing and Use	None (Refer to any other national measures that may be relevant

SECTION 16: OTHER INFORMATION

Legend

CAS: Chemical Abstract Services
DLF: Directly Life Threatening
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods
N/Ap: Not Applicable
N/Av: Not Available
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
TWA: Time Weighted Average

References
Safety Data Sheets, installation, handling and maintenance procedures from the manufacturer.

Preparation Date (mm/dd/yyyy): 22/12/2022
Other special considerations for handling: Provide adequate information, instruction and training for operators.

DISCLAIMER

The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. FirePro Systems Ltd. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

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