



FirePro Aerosol Generators- Post Activation Fire Safety Equipment Pty Ltd

Chemwatch: 5252-51

Version No: 5.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 0

Issue Date: 01/11/2019

Print Date: 08/10/2020

L.GHS.AUS.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	FirePro Aerosol Generators- Post Activation
Synonyms	Celanova FirePro Post Activation
Proper shipping name	AVIATION REGULATED SOLID, N.O.S. Not subject to this Code (see SP 106)
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Fire extinguishing aerosol released into an indoor burning area.
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Details of the supplier of the safety data sheet

Registered company name	Fire Safety Equipment Pty Ltd
Address	2A Staple Street Seventeen Mile Rocks QLD 4073 Australia
Telephone	+61 7 3715 5644
Fax	+61 7 3715 8450
Website	www.fsequip.com.au
Email	ray@fsequip.com.au

Emergency telephone number

Association / Organisation	Fire Safety Equipment Pty Ltd
Emergency telephone numbers	+61 7 3715 5644 Mon-Fri 8am - 5pm
Other emergency telephone numbers	Not Available

SECTION 2 Hazards identification

Classification of the substance or mixture

Poisons Schedule	Not Applicable
Classification [1]	Not Applicable

Label elements

Hazard pictogram(s)	Not Applicable
Signal word	Not Applicable

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Hazard statement(s)

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Not Applicable

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
Not Available		Particulate component
584-08-7	47-49	<u>potassium carbonate</u>
7757-79-1	2-3	<u>potassium nitrate</u>
Not Available	<1	other elements
Not Available		Gas component
7727-37-9.	21-22	<u>nitrogen</u>
124-38-9	13-14	<u>carbon dioxide</u>
7732-18-5	10-12	<u>water</u>
Not Available	1-2	other gases, as
630-08-0		<u>carbon monoxide</u>
74-82-8		<u>methane</u>
1333-74-0		<u>hydrogen</u>

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	<p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> ▶ Wash out immediately with water. ▶ If irritation continues, seek medical attention. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation.
Inhalation	<ul style="list-style-type: none"> ▶ If dust is inhaled, remove from contaminated area. ▶ Encourage patient to blow nose to ensure clear passage of breathing. ▶ If irritation or discomfort persists seek medical attention.
Ingestion	<ul style="list-style-type: none"> ▶ Not considered a normal route of entry. ▶ If swallowed do NOT induce vomiting. ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▶ Observe the patient carefully. ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▶ Seek medical advice.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

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SECTION 5 Firefighting measures

Extinguishing media

▸ Generally not applicable.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Generally not applicable.
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Advice for firefighters

Fire Fighting	▸ Generally not applicable.
Fire/Explosion Hazard	▸ Generally not applicable.
HAZCHEM	2Z

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Generally not applicable.
Major Spills	▸ Generally not applicable.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Generally not applicable.
Other information	▸ Generally not applicable.

Conditions for safe storage, including any incompatibilities

Suitable container	Material is contained in a stainless steel fire fighting container.
Storage incompatibility	▸ Generally not applicable.

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	carbon dioxide	Carbon dioxide in coal mines	12500 ppm / 22500 mg/m3	54000 mg/m3 / 30000 ppm	Not Available	Not Available
Australia Exposure Standards	carbon dioxide	Carbon dioxide	5000 ppm / 9000 mg/m3	54000 mg/m3 / 30000 ppm	Not Available	Not Available
Australia Exposure Standards	carbon monoxide	Carbon monoxide	30 ppm / 34 mg/m3	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
potassium carbonate	Potassium carbonate	5.6 mg/m3	62 mg/m3	370 mg/m3
potassium nitrate	Potassium nitrate	9 mg/m3	100 mg/m3	600 mg/m3
nitrogen	Nitrogen	7.96E+05 ppm	8.32E+05 ppm	8.69E+05 ppm

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Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
carbon monoxide	Carbon monoxide	75 ppm	Not Available	Not Available
methane	Methane	65000*** ppm	230000*** ppm	400000*** ppm
hydrogen	Hydrogen	65000*** ppm	230000*** ppm	400000*** ppm

Ingredient	Original IDLH	Revised IDLH
potassium carbonate	Not Available	Not Available
potassium nitrate	Not Available	Not Available
nitrogen	Not Available	Not Available
carbon dioxide	40,000 ppm	Not Available
water	Not Available	Not Available
carbon monoxide	1,200 ppm	Not Available
methane	Not Available	Not Available
hydrogen	Not Available	Not Available

Occupational Exposure Banding


Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
potassium carbonate	E	≤ 0.01 mg/m ³
potassium nitrate	E	≤ 0.01 mg/m ³

Notes: Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

MATERIAL DATA

None assigned. Refer to individual constituents.

Exposure controls

Appropriate engineering controls	Before entering a room with the material in aerosol phase vent properly to avoid unnecessary exposure.
Personal protection	
Eye and face protection	▸ Generally not applicable.
Skin protection	See Hand protection below
Hands/feet protection	▸ Generally not applicable.
Body protection	See Other protection below
Other protection	▸ Generally not applicable.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

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Material	CPI
BUTYL	A
NEOPRENE	A
VITON	A
NATURAL RUBBER	C
PVA	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

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* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Aerosol white particulate gas.		
Physical state	Manufactured	Relative density (Water = 1)	Not Applicable
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	Not Applicable	Decomposition temperature	Not Applicable
Melting point / freezing point (°C)	Not Applicable	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling range (°C)	Not Applicable	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Applicable	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Applicable
Vapour pressure (kPa)	Not Applicable	Gas group	Not Available
Solubility in water	Not Applicable	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	Not Applicable	VOC g/L	Not Applicable

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Generally not applicable.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation will have harmful effects as the product is released into a smoke filled burning indoor area that should be evacuated. Do not enter without breathing apparatus. Exposure to product will be very short term, the potassium carbonate will dissipate to atmosphere within 20 mins of discharge. Not normally a hazard due to physical form of product.
Ingestion	Not normally a hazard due to physical form of product.
Skin Contact	Not normally a hazard due to physical form of product. The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

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FirePro Aerosol Generators- Post Activation	TOXICITY	IRRITATION
	Not Available	Not Available
potassium carbonate	TOXICITY	IRRITATION
	Oral (rat) LD50: =1.87 mg/kg ^[2]	Not Available
	Oral (rat) LD50: 1900 mg/kg ^[1]	
	Oral (rat) LD50: 1983 mg/kg ^[1]	
	Oral (rat) LD50: 2000 mg/kg ^[1]	
potassium nitrate	TOXICITY	IRRITATION
	Oral (rabbit) LD50: 1901 mg/kg ^[2]	Not Available
	Oral (rat) LD50: =3015 mg/kg ^[2]	
	Oral (rat) LD50: >2000 mg/kg ^[1]	
	Oral (rat) LD50: 3750 mg/kg ^[2]	
nitrogen	TOXICITY	IRRITATION
	Not Available	Not Available
carbon dioxide	TOXICITY	IRRITATION
	2000 mg/kg ^[2]	Not Available
	657190 mg/kg ^[2]	
	Inhalation (mouse) LC50: 180.5 mg/l/2H ^[2]	
water	TOXICITY	IRRITATION
	Oral (rat) LD50: >90000 mg/kg ^[2]	Not Available
carbon monoxide	TOXICITY	IRRITATION
	150 mg/kg ^[2]	Not Available
	4000 mg/kg ^[2]	
	650 mg/kg ^[2]	
	Inhalation (rat) LC50: 1.9 mg/l/4H ^[2]	
	Inhalation (rat) LC50: 1804.938213 mg/l/4H ^[2]	
methane	TOXICITY	IRRITATION
	Inhalation (mouse) LC50: 163 mg/l/2H ^[2]	Not Available
hydrogen	TOXICITY	IRRITATION
	Not Available	Not Available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

POTASSIUM CARBONATE	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.
CARBON MONOXIDE	- central nervous system effects
NITROGEN & WATER & METHANE & HYDROGEN	No significant acute toxicological data identified in literature search.

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Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

FirePro Aerosol Generators- Post Activation	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
potassium carbonate	LC50	96	Fish	68mg/L	2
	EC50	48	Crustacea	200mg/L	2
	NOEC	96	Fish	33mg/L	2
potassium nitrate	LC50	96	Fish	1-378mg/L	2
	EC50	48	Crustacea	490mg/L	2
	NOEC	720	Fish	58mg/L	2
nitrogen	Not Available	Not Available	Not Available	Not Available	Not Available
carbon dioxide	Not Available	Not Available	Not Available	Not Available	Not Available
water	Not Available	Not Available	Not Available	Not Available	Not Available
carbon monoxide	LC50	96	Fish	672.6mg/L	2
	EC50	96	Algae or other aquatic plants	124.4mg/L	2
methane	LC50	96	Fish	24.11mg/L	2
	EC50	96	Algae or other aquatic plants	7.71mg/L	2
hydrogen	Not Available	Not Available	Not Available	Not Available	Not Available
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
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Ingredient	Persistence: Water/Soil	Persistence: Air
potassium nitrate	LOW	LOW
carbon dioxide	LOW	LOW
water	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
potassium nitrate	LOW (LogKOW = 0.209)
carbon dioxide	LOW (LogKOW = 0.83)
water	LOW (LogKOW = -1.38)
methane	LOW (LogKOW = 1.09)

Mobility in soil

Ingredient	Mobility
potassium nitrate	LOW (KOC = 14.3)
carbon dioxide	HIGH (KOC = 1.498)
water	LOW (KOC = 14.3)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	
	▶ Generally not applicable.

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	NO
HAZCHEM	2Z

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR)

UN number	3335	
UN proper shipping name	Aviation regulated solid, n.o.s. *	
Transport hazard class(es)	ICAO/IATA Class	9
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	9A
Packing group	III	
Environmental hazard	Not Applicable	
Special precautions for user	Special provisions	A27
	Cargo Only Packing Instructions	956
	Cargo Only Maximum Qty / Pack	400 kg
	Passenger and Cargo Packing Instructions	956
	Passenger and Cargo Maximum Qty / Pack	400 kg
	Passenger and Cargo Limited Quantity Packing Instructions	Y956
	Passenger and Cargo Limited Maximum Qty / Pack	30 kg G

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

potassium carbonate is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 10 / Appendix C

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

Australian Inventory of Industrial Chemicals (AIIC)

potassium nitrate is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2A: Probably carcinogenic to humans

nitrogen is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

carbon dioxide is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

water is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

carbon monoxide is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

Chemical Footprint Project - Chemicals of High Concern List

methane is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

Australian Inventory of Industrial Chemicals (AIIC)

hydrogen is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

National Inventory Status

National Inventory	Status
Australia - AIIC	Yes
Australia - Non-Industrial Use	No (potassium carbonate; potassium nitrate; nitrogen; carbon dioxide; water; carbon monoxide; methane; hydrogen)
Canada - DSL	Yes
Canada - NDSL	No (potassium carbonate; potassium nitrate; nitrogen; carbon dioxide; water; carbon monoxide; methane; hydrogen)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (nitrogen; hydrogen)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes

National Inventory	Status
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - ARIPS	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

SECTION 16 Other information

Revision Date	01/11/2019
Initial Date	26/04/2017

SDS Version Summary

Version	Issue Date	Sections Updated
4.1.1.1	23/06/2017	Acute Health (inhaled)
5.1.1.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
 PC—STEL: Permissible Concentration-Short Term Exposure Limit
 IARC: International Agency for Research on Cancer
 ACGIH: American Conference of Governmental Industrial Hygienists
 STEL: Short Term Exposure Limit
 TEEL: Temporary Emergency Exposure Limit,
 IDLH: Immediately Dangerous to Life or Health Concentrations
 OSF: Odour Safety Factor
 NOAEL :No Observed Adverse Effect Level
 LOAEL: Lowest Observed Adverse Effect Level
 TLV: Threshold Limit Value
 LOD: Limit Of Detection
 OTV: Odour Threshold Value
 BCF: BioConcentration Factors
 BEI: Biological Exposure Index

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