Safety Data Sheet

AF-X Fireblocker Carbon Series Generators

0.1 Introduction

Please note that based on Commission Regulation (EU) 2015/830 of 28 May 2015 of the European Parliament, compiling a Safety data Sheet would only be required for substances and mixtures, and is not referring to completed products, such as the Carbon Generator Extinguisher.

Reference in many languages available at:
(https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32015R0830)

0.2. General requirements for compiling a safety data sheet

0.2.1. The safety data sheet shall enable users to take the necessary measures relating to protection of human health and safety at the workplace, and protection of the environment. The writer of the safety data sheet shall take into account that a safety data sheet must inform its audience of the hazards of a substance or a mixture and provide information on the safe storage, handling and disposal of the substance or the mixture.

As experience has learned that in the supply-chain (transportation and storage), entities involved frequently show the need to have more detailed technical information, AF-X provides the following user Safety Data Sheet information in the same sequence as required in accordance with Commission Regulation (EU) 2015/830.

For more detailed information relating to the raw materials (extinguishing agent) for the purpose of production and storage, please contact our technical staff at AF-X Systems in **Purmerend**.

fire protection TECHNOLOGIES

User Safety Data Sheet for AF-X Fireblocker Carbon Generator Extinguisher

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/ UNDERTAKING

1.1. Product identifier

Product form	:	Black extinguishant tablets placed in extinguishing Unit
Trade name	:	AF-X Fireblocker Carbon Series
Composition	:	Tablets consisting of a Mixture of Potassium Nitrate and carbon placed in extinguishing Units
Synonyms	:	Fire Extinguisher unit

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

Main use category	:	Industrial use – professional use – Consumer use
Use of substance/mixture	:	Fire Extinguisher
Remark relevant uses	:	Dry Fire Extinguisher, suitable for confined area's (e.g. engine rooms, technical areas, server rooms for computers, cargo compartments vehicles, storage facilities, etc.)

1.3. Details of the supplier of the safety data sheet

Name	:	AF-X Systems B.V.
Address	:	Impuls 20
Zip code	:	1446 WX
Place	:	Purmerend
Country	:	The Netherlands
Phone	:	+31-(0)20-20 50 484
E-mail	:	ralph@af-x.com / gilbert@i4safety.nl

1.4 Emergency telephone number

Netherlands	:	Contact (English and Dutch) GMT+1 office hours 09.00h-17.00h Mon-Fri Emergency response phone number: (during office hours) +31 -(0)20-20 50 484 (out of office hours) +31 -(0)20-20 50 484 e-mail: gilbert@i4safety.nl / ralph@af-x.com

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture
Classification according to Regulation (EC) No. 1272/2008 (CLP)

Not applicable, as Extinguishing Unit is not to be regarded to be a substance or mixture.

Emergency overview:

The mixture of Potassium Nitrate appears to be an oxidizer, but in given composition is designed and intended as a fire extinguishant. If heated to temperatures of above 180 degrees Celsius the mixture will create a deflagration with some heat radiation only in the immediate vicinity of the materials. The created "smoke" (aerosols) is the intended extinguishing agent.

2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Not applicable, as Extinguishing Unit is not to be regarded to be a substance or mixture.

2.3. Other hazards Extinguishing Agent

The mixture does not meet the criteria for PBT or vPvB according to REACH (No. 1907/2006, Annex XIII). Harmful in contact with skin and if swallowed. irritating to skin and eyes.

Note: This substance/mixture contains no components considered to be either persistent, bio accumulative and toxic (PBT), or very persistent and very bio accumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Provided information based on extinguishing agent tablets contained in the unit (before initiation).

Note that the steel generator is constructed in such a way, that it can practically not be opened. Exposure to, and thus contact with the extinguishing agent is highly unlikely.

3.1 Mixtures

CAS-no.	EINECS EC-No.	Index-No.	Classification
Potassium nitrate (> 70% of mixture)			
7757-79-1	231-818-8	-	Ox. Sol. 3; H272 O, R8
			According to the notifications provided by companies to ECHA in REACH registrations no hazards have been classified

For the full text of the statements mentioned in this section, see also Section 16

SECTION 4: FIRST AID MEASURES

Provided information based on extinguishing agent tablets contained in the unit (before initiation).

Note that the steel generator is constructed in such a way, that it cannot be opened. Exposure to, and thus contact with, the extinguishing agent in tablet form is highly unlikely.

If extinguisher unit is initiated, the generator releases the fire extinguishing aerosol mixture. Although only natural occurring and environmental neutral elements will be produced, the particle sizes in the direct environment will be microscopically small, and for that reason requires protection for the respiratory system.
Inhalation of small particles must be prevented as much as possible.

4.1. Description of first aid measures

First-aid measures general:

General advice:
In all cases of doubt, or when symptoms persist, seek medical attention.
Show this safety data sheet to the doctor in attendance.

First-aid measures after inhalation:

Note that the steel generator is constructed in such a way, that it can practically not be opened. Exposure to, and thus contact with the extinguishing agent is highly unlikely under normal conditions.

If inhaled, move person into fresh air and keep at rest in a position comfortable for breathing or if available provide medical oxygen.
If not breathing give artificial respiration and seek medical attention immediately.
Consult a physician.

First-aid measures after skin contact:

If skin contact, wash off with soap and plenty of water for at least 15 minutes. Cold water may be used. If irritation persists, consult a physician.

First-aid measures after eye contact:

Check for and remove contact lenses. Rinse immediately with plenty of water (also under eyelids) for at least 15 minutes. Cold water may be used. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion:

Do not induce vomiting unless directed to do so by medical personnel.
If larger quantities are swallowed call a physician immediately.
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician in all cases.

4.2. Most important symptoms and effects, both acute and delayed
(Also described in the labelling (see section 2.2) and/or in section 11)

Symptoms/injuries after inhalation:

May cause irritation to the respiratory tract.

Symptoms/injuries after skin contact:

Irritation to skin.

Symptoms/injuries after eye contact:

Irritation of the eye

Symptoms/injuries after ingestion:

May form methemoglobin which in sufficient concentrations causes cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Consult a physician.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Follow the recommendations/advice in chapter 4.1.

SECTION 5: FIREFIGHTING MEASURES

The unit itself is designed to extinguish fire!

IF MATERIAL IS EXPOSED TO AN EXTERNAL FIRE, THE MIXTURE WILL SPONTANEOUSLY REACT INTO AN EXTINGUISHING AEROSOL THAT WILL PRESENT ITSELF AS A WHITE CLOUD. THE AEROSOL CLOUD WILL ITSELF BE AN EXTINGUISHING MEDIA FOR SURROUNDING FIRES.

5.1. Extinguishing media

Suitable extinguishing media:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Dry powder and dry sand are also suitable.

5.2. Special hazards arising from the substance or mixture inside the Aerosol Generator extinguisher

Fire hazard:

When ignited, fire-fighting extinguishant will be developed (purpose of extinguishing agent). White Aerosol cloud developed may be confused with smoke but is actually the fire-extinguishing agent. Flame point material around 350 ºC.

Explosion hazard:

No direct explosion hazard in vicinity of product in powder and tablet form. Flame point material around 350 ºC.

Hazard due to combustion products after initiation

Combustion products: CO_2, N_2, H_2O gas phase (> 88% wt); K_2CO_3 solid phase (< 12%wt)

5.3. Advice for firefighters

Precautionary measures:

Exposure to fire/heat: keep upwind, consider evacuation and have neighborhood close doors and windows.

Firefighting instructions:

Cool packages/tanks or loose product with water spray from safe distance (min. 5 Meters), and if possible remove them into safety. Do not move the load if already exposed to excessive heat. Exercise caution when fighting any chemical fire.

Protection during firefighting:

Do not breathe fumes. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Other information:

Avoid mechanical shocks.
Avoid high temperatures.
Use water spray to cool unopened packages.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Note that the steel generator is constructed in such a way, that it cannot be opened. Exposure to, and thus contact with the extinguishing agent is highly unlikely under normal conditions.

6.1. Personal precautions, protective equipment and emergency procedures

General measures:

Always ensure your own safety first. Ensure adequate air ventilation.
Avoid contact with skin, clothing and eyes. Avoid raising dust.
Ensure a low relative humidity in the room. As the extinguishing particles are microscopically small, they might attract moist. Create a corrosion stop to protect sensitive electronical equipment if present. Also see 'Methods for cleaning up' under 6.3.

6.1.1. For *persons other than* emergency personnel

Evacuate personnel to safe areas.
For personal protection see section 8.

6.1.2. For *emergency responders*

Protective equipment: Wear suitable respiratory equipment in case of insufficient ventilation or in case of prolonged exposure. See also the information in "For non-emergency personnel".

6.2. Environmental precautions

Prevent contamination in sewers. Prevent uncontrolled discharges into the environment (rivers, water courses, sewers etc.). Prevent soil and water pollution. Stop leaks if possible.

6.3. Methods and material for containment and clean-up

For containment:
Minimize generation of dust. Stop leaks if safe to do so.

Methods for cleaning up:
First ensure that the relative humidity in the room stays below 30% to ensure a corrosion stop. Collect spillage (Vacuum clean, sweep up and shovel). Take up mechanically, placing in appropriate containers for recovery or disposal. E.g.: collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal (transport/Handling).
Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling. Special cleaning advise for the dry or iced cleaning of sensitive electronics can be obtained at the AF-X Systems technical department.

Other information:
Do not wash out with water in a sensitive environment. Dispose the product, depending on the degree and type of contamination in an authorized waste disposal site.

6.4. Reference to other sections

See section 1 for emergency contact information.
See section 8 for information on appropriate personal protective equipment.
See section 13 for additional waste treatment information.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Note that the steel generator is constructed in such a way, that it cannot be opened. Exposure to, and thus contact with the extinguishing agent is highly unlikely under normal conditions.

7.1.1. Precautions for safe handling

Avoid raising dust. Avoid breathing dust. Use sufficient ventilation. Provide appropriate exhaust ventilation at places where dust is formed. In case of inadequate ventilation wear respiratory protection. Avoid contact with skin and eyes. Wear protective gloves/protective clothing/eye protection as advised in section 8. Protect from moisture. Keep away from sources of ignition.

7.1.2. Hygiene measures

Always wash hands after handling the product. Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures:	Store in a dry and cool, well ventilated place away from sources of heat, ignition and direct sunlight.
Storage conditions:	Store in a dry, preferably in the original storage/transport packaging. Substance is hygroscopic.
Storage temperature:	20°C
Heat and ignition sources:	Keep substance away from: ignition sources. heat sources.
Prohibitions on mixed storage:	Keep substances away from: (strong bases, oxidizing agents, combustible materials, organic materials.
Storage area:	Store in dry, cool, well-ventilated area. Avoid unnecessarily exposure to air to prevent absorption of moisture. Substance is hygroscopic. Meet the legal requirements. Keep out of direct sunlight. No open flames, no sparks, and no smoking.
Special rules on packaging:	Meet the legal requirements. Keep packaging closed when not in use. Do not store in unlabeled containers.
Packaging material:	Suitable material: preferably hermetically sealed packages made of materials as polyethylene.

7.3. Specific end use(s)

Consult the identified uses in the User Manual of this product.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION (based on extinguishing agent)

8.1. Control parameters (most critical National and International limits)

DNEL/DMEL (Workers)	
Long-term exposure - systemic effects, dermal	20,8 mg/kg bw/day
Long-term exposure - systemic effects, inhalation	36,7 mg/m³ Latvia 5 mg/ m³
DNEL/DMEL (General population)	
Acute - systemic effects, oral	12,5 mg/kg bw/day
Long-term exposure - systemic effects, inhalation	10,9 mg/m³
Long-term exposure - systemic effects, dermal	12,5 mg/kg bw/day
PNEC (Water)	
PNEC aqua (freshwater)	0,45 mg/l
PNEC aqua (marine water)	0,045 mg/l
PNEC aqua (intermittent, freshwater)	4,5 mg/l
PNEC (STP)	
PNEC sewage treatment plant	18 mg/l

Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Do not expose to temperatures over 170 ºC.

8.2. Exposure controls

Appropriate engineering controls:

Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Ensure that eyewash stations and safety showers are close to the workstation Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment :

Hand protection : In case of repeated or prolonged contact wear gloves (tested to EN 374). Take advice to gloves' supplier. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC

Material selection gloves : Good resistance gives: rubber, butyl rubber, natural rubber, neoprene. Nitrile rubber (NBR) . Permeation time: minimum >480min long term exposure; material / thickness [mm]: Nitrile rubber (NBR) / 0,11 mm. Take advice to gloves' supplier.

Eye protection : Safety glasses. In case of dust production: protective goggles. Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection	:	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Normal working clothes are suitable. *Body Protection*: Impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory protection	:	Carry operations in the open/under local exhaust/ ventilation or with respiratory protection to keep airborne levels below recommend exposure levels. Dust production: dust mask with filter type P2. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Environmental exposure controls	:	Avoid release to the environment. Emissions from ventilation or work process equipment should be checked to ensure they comply with legislation. In some cases process modifications will be necessary to reduce emissions to acceptable levels.
Other information	:	Keep product away from foodstuffs and beverages. Do not eat, drink or smoke when using this product. Take off contaminated clothing and shoes immediately. After use: wash hands and apply hand or skin care cream. Training staff on good practice. Regular cleaning of equipment. Minimization of manual phases.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES
(based on extinguishing agent)

9.1. Information on basic physical and chemical properties

Physical state	:	Solid (powder form or tablets)
Appearance	:	Crystalline solid or pallets.
Molecular mass	:	101,10 g/mol
Color	:	Black.
Odor	:	Odorless.
pH	:	6 - 9 (5 %)
Melting point	:	334 °C
Boiling point	:	Not applicable
Flash point	:	Not applicable
Vapor pressure	:	< 0,001 kPa
Relative vapor density at 20 °C	:	3
Relative density	:	2,1
Density	:	2,11 kg/l
Solubility	:	Soluble in water. Soluble in glycerol.
Water	:	32 g/100ml
Ethanol	:	0,16 g/100ml
Log Pow	:	No data available
Self-ignition temperature	:	>170 ºC
Decomposition temperature	:	400 °C
Explosive properties	:	not explosive. Intended as extinguishing agent
Oxidizing properties	:	may intensify fire; oxidizer

9.2. 0ther information

Minimum ignition energy	:	Not applicable
SADT	:	Not applicable
VOC content	:	Not applicable
Other Properties	:	Translucent

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Stable in use and storage conditions as recommended in section 7, and as clarified the mixture is eventually intended a fire-extinguishant.

In extreme circumstances the substance could decompose on exposure to temperature rise and release of oxygen. On burning it might release toxic and corrosive gases/vapors (nitrous vapors) in the direct vicinity of the initiation.

Could be (in extreme conditions) violent to explosive reaction with many compounds like organic materials, combustible materials, (some) metals and their compounds and with (strong) reducers. Reacts with (some) acids and could then release of toxic and corrosive gases/vapors (nitrous vapors).

10.2. Chemical stability

Stable under normal conditions (working environment).

10.3. Possibility of hazardous reactions

The product reacts with combustible materials and increases combustion even in the absence of air. Reacts with many compounds e.g.: with organic material, with combustible materials, with (some) metals and their compounds and with (strong) reducers. Reacts with (some) acids: release of toxic and corrosive gases/vapors (nitrous vapors).

10.4. Conditions to avoid

Avoid high temperatures. Prevent moisture contact.
Also avoid direct sunlight, sources of heat, incompatible materials, open flame, and sparks.

10.5. Incompatible materials

Keep substance away from: strong acids, strong bases and oxidation agents, combustible materials, reducing agents, organic materials.

10.6. Hazardous decomposition products

Mainly Nitrogen oxides and oxygen could be released.
On heating/burning, release of toxic and corrosive gases/vapors nitrous vapors will occur.
Decomposes on exposure to temperature rise and then release oxygen.
Reacts with (some) acids: release of toxic and corrosive gases/vapors: nitrous vapors.

SECTION 11: TOXICOLOGICAL INFORMATION In case of escape/free extinguishing agent

11.1. Information on toxicological effects Potassium Nitrate (>70% of mixture)

Acute toxicity : Not classified (Based on available data, the classification criteria are not met)

Potassium nitrate (CAS-no.: 7757-79-1)	
LD50 oral rat	3750 mg/kg OECD Guideline 405
LD50 dermal rat	> 5000 mg/kg bw/day OECD Guideline 402
LC50 inhalation rat (mg/l)	> 0,527 mg/l/4u OECD Guideline 403
ATE (oral)	3750 mg/kg

Skin corrosion/irritation : Not classified (Based on available data (402), the classification criteria are not met OECD Guideline 404)

Serious eye damage/irritation : Not classified according to Guideline 437/405/EU B.5

Respiratory or skin sensitization : Not classified according to Guideline 429/EU B.42

Germ cell mutagenicity : No data available

Carcinogenicity : IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity:

Reproductive toxicity - Rat - Oral
Effects on Fertility: Other measures of fertility

Reproductive toxicity - Rat - Oral
Effects on Newborn: Behavioral.

Reproductive toxicity - Rabbit - Oral
Effects on Fertility: Abortion.

Reproductive toxicity - Guinea pig - Oral
Effects on Newborn: Stillbirth.

Reproductive toxicity - Guinea pig - Oral
Effects on Fertility: Female fertility index (e.g., # females pregnant per females mated).

Effects on Embryo or Fetus: Other effects to embryo.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

Repeated dose toxicity
Rat - male and female - Oral - NOAEL : > 1.500 mg/kg - OECD Test Guideline 422
RTECS: TT3700000

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

Symptoms/injuries after inhalation :

AFTER INHALATION OF DUST: Dry/sore throat. Coughing. Irritation of the respiratory tract.

Symptoms/injuries after skin contact : Red skin.

ON CONTINUOUS EXPOSURE/CONTACT: Tingling/irritation of the skin.

Symptoms/injuries after eye contact : Redness of the eye tissue.

ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the eye tissue.

Symptoms/injuries after ingestion : Gastrointestinal complaints. Vomiting. Nausea. Diarrhoea.

AFTER ABSORPTION OF HIGH QUANTITIES: Blood in stool. Methemoglobinemia.

FOLLOWING SYMPTOMS MAY APPEAR LATER: Blue/grey discolouration of the skin. Dizziness. Feeling of weakness. Disturbances of heart rate. Headache. Disturbances of consciousness.

Chronic symptoms :

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation.

SECTION 12: ECOLOGICAL INFORMATION
In case of the highly unlikely escape/free powder material

12.1. Toxicity Potassium Nitrate (>70% of mixture)

Ecology - general	:	Classification concerning the environment: not applicable
Ecology - water	:	Mild water pollutant (surface water) Maximum concentration in drinking water: 50 mg/l (nitrate) (Directive 98/83/EC) Not harmful to fishes (LC50(96h) >1000 mg/l) Not harmful to algae (EC50 (72h) >1000 mg/l) Not harmful to aquatic organisms (1700 mg/l 72h EC50 >1000 mg/l) Not harmful to activated sludge. May cause eutrophication

Potassium nitrate (CAS-no.: 7757-79-1) (>70% of mixture)	
LC50 fish 1	162 mg/l (96 h; Pisces)
LC50 other aquatic organisms 1	39 mg/l (96 h; Daphnia magna or water flea)
EC50 other aquatic organisms 1	200 - 1000 mg/l (Plankton)
LC50 fish 2 (OECD Guideline 203)	1378 mg/l (96 h; Poecilia reticulate or Guppy)
LC50 other aquatic organisms 2	490 mg/l (48 h; Daphnia magna)
TLM fish 1	3000 mg/l (96 h; Lepomis macrochirus)
TLM fish 2	162 mg/l (96 h; Gambusia affinis)
Threshold limit other aquatic organisms 1	39 mg/l (96 h; Daphnia magna)
Threshold limit other aquatic organisms 2	490 mg/l (48 h; Daphnia magna)

12.2. Persistence and degradability Potassium Nitrate (>70% of mixture)

Potassium nitrate (CAS-no.: 7757-79-1)	
Persistence and degradability	In accordance with column 2 of Annex VII of REACH no study need to be carried out if the substance is inorganic.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% van ThOD)	Not applicable

12.3. Bio-accumulative potential Potassium Nitrate (>70% of mixture)

Potassium nitrate (CAS-no.: 7757-79-1)	
Bio-accumulative potential	No bioaccumulation or biomagnifications are expected based on substance properties (Log Pow < 1).

12.4. Mobility in soil Potassium Nitrate (>70% of mixture)

Potassium nitrate (CAS-no.: 7757-79-1)	
Ecology - soil	Soluble in water. Low potential for adsorption (based on substance properties)

12.5. Results of PBT and vPvB assessment
This substance does not meet the vPvB- and/or PBT criteria of REACH, annex XIII.

12.6. Other adverse effects
May cause eutrophication.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

EURLW code	:	06 03 14 - solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13 Depending on branch of industry and production process, also other EURAL codes may be applicable
Regional legislation (waste)	:	According to (Netherlands LWCA KGA Cat 05 in accordance with Directive 2008/98/EC. Disposal must always be done according to official local regulations.
Waste treatment methods	:	This material and its container must be disposed of in a safe way.
Waste disposal recommendations	:	Recycle/reuse. Do not discharge into surface water. Remove waste in accordance with local and/or national regulations. Care should be taken when handling emptied containers that have not been cleaned or rinsed out.
Ecology - waste materials	:	Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

In accordance with the UN recommendations on the transport of dangerous goods Test and criteria and thus ADR / RID / ADNR / IMDG / ICAO / IATA

The products and components are tested and documented by AF-X Systems, Aerosol Extinguishing Technologies (Netherlands), Consilab (Germany) and suppliers.

14.1. UN number

UN-No.	:	Not applicable, the product does not meet the UN Criteria to be classified and identified

14.2. UN proper shipping name

Proper Shipping Name	:	Not applicable, the product does not meet the UN Criteria to be classified and identified

14.3. Transport hazard class

Class (UN)	:	Not applicable
Hazard labels (UN)	:	Not applicable

14.4. Packing group

Packing group (UN)	:	Not applicable

14.5. Environmental hazards

Other information	:	No supplementary information available.

14.6. Special precautions for user

14.6.1. Overland transport (ADR-RID)

State during transport (ADR-RID)	:	As cannister unit containing a solid
Transport Category	:	Not applicable
Tunnel restriction code ADR	:	Not applicable

14.6.2. Transport by sea (IMDG-Code)

Marine Pollutant	:	Not applicable
Stowage Cat.	:	Not applicable
Location	:	Not applicable
EmS-No. (1)	:	Not applicable
EmS-No. (2)	:	Not applicable

14.6.3. Air transport (ICAO-TI / IATA DGR)

Transport regulations	:	Not Regulated

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

IBC code	:	Not Applicable

SECTION 15: REGULATORY INFORMATION In case of escape/free Extinguishing Agent

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

Classification according to EC Regulation 1272/208 (CLP):

Ox. Sol. 3 H272 (full text of H-phrases are to found in section 16)

No REACH Annex XVII restrictions

VOC content : Not applicable

International Inventories:

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Potassium nitrate	X	X	-	231-818-8	-		X	X	X	X	X

X = Listed

15.2. Chemical safety assessment

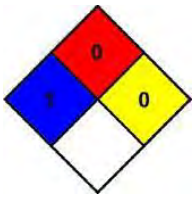
In accordance with REACH article 14, a Chemical Safety Assessment has been carried out for this substance

SECTION 16: OTHER INFORMATION

Version	:	1.0 USDS 261018
Abbreviations and acronyms	:	bw = body weight
	:	CLP = Classification, labeling and packaging
	:	DNEL= Derivative No Effect Level
	:	PNEC= Predicted No Effect Concentration
	:	REACH= Registration, evaluation and authorization of chemicals
	:	NOAEL= no observed adverse effect level
	:	OECD= Organization for Economic Cooperation and Development
	:	SCL= Specific concentration limits
	:	LC50= median Lethal Concentration for 50% of subjects
	:	LD50= median Lethal Dose for 50% of subjects
Data sources	:	BIG-database
	:	ECHA website: Information on Registered Substances
	:	Handbook of Chemistry and Physics CRC Press Inc
	:	Information of the suppliers.
List of relevant H-phrases	:	H272: May intensify fire; oxidizer.
Training advice	:	Before using/handling the product one must read carefully the MSDS.
Adaptations	:	This safety data sheet is a general SDS and replaces all the individual SDSs of the products mentioned in SECTION 1.

Additional NFPA identification (US Federal Regulations):

NFPA health hazard	:	1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard	:	0 - Materials that will not burn.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating:

Health	:	1 Slight Hazard - Irritation or minor reversible injury possible
Flammability	:	1 Slight Hazard
Physical	:	1 Slight Hazard
Personal Protection	:	F

The AF-X Fireblocker of the Carbon Series is a product of AF-X Systems BV, Purmerend, The Netherlands.

This Safety Data Sheet is prepared by AF-X Systems BV in close cooperation and based on the data as supplied by Aerosol Extinguishing Technologies BV, Amsterdam. Aerosol Extinguishing Technologies BV produces this fire extinguishing gas generators exclusively for AF-X Systems BV.

Prepared by AF-X Systems BV

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

- End SDS -

PRODUCTS:

Gaseous Suppression

- Inert Gas (IG-01, IG-55, IG-100, IG-541)
- Novec 1230™ Fluid (FK-5-1-12)
- FM-200® (HFC-227ea.)
- Carbon Dioxide (CO_2)
- Hybrid Systems (N_2 / Water)
- Pressure Relief Vents
- Enclosure Integrity Testing Equipment
- Pipe & Fittings

Water Suppression

- Water Mist - High Pressure
- Water Mist - Intermediate Pressure
- Water Mist - Low Pressure
- Hybrid Systems (Water / N_2)
- Monitors & Delivery Systems
- High Speed Deluge

Foam Suppression

- Foam Concentrates
- Foam Proportioning
- Foam Delivery Systems
- Compressed Air Foam
- Foam Concentrate Testing

Explosion Protection

- Explosion Suppression
- Explosion Isolation
- Explosion Vents & Pressure Relief
- Spark Suppression
- Explosibility Testing

Fire Detection

- Linear Heat Detection - Digital
- Linear Heat Detection - Fibre Optic
- Linear Heat Detection - Micro Chip
- Flame Detection
- Video Imaging Detection
- Spark Detection
- Control & Indicating Equipment
- Thermal Imaging Detection
- Aspirating Smoke Detection

Military & Defence

- Military Vehicles
- Naval Vessels

Special Applications

- Micro Environment
- Oxygen Reduction
- Kitchen Protection Systems
- Dry Chemical
- Vehicle Systems
- Marine & Offshore
- Vapour Mitigation
- Li-Ion Fire Systems

Support Services

- Design / Engineering
- Technical Support
- Services & Testing

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