

XAFER S100

SAFETY DATA SHEET



PANZERA

1. IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

1.1. Product identifier

Trade name: **S100**
Code: SXF011300

1.2. Relevant identified uses of the product and uses advised against

Pyrotechnic article – smoke generator with indoor anti-theft function. The content is isolated and protected from direct contact. The smoke produced during the intended use is not classified as dangerous for the human health.

Any use other than those identified is forbidden. It is absolutely forbidden to open, temper with or modify in any way the item or part of it.

1.3. Details of the supplier of the safety data sheet

PANZERA S.r.l.
Via Maso Renner 6
39055 Laives (BZ) – ITALY
e-mail: info@panzera.it

1.4. Emergency telephone number

In case of emergency contact toxicological information, emergency number 112 (within Europe) or 911 (for USA and Canada). For other countries, use the built-in-emergency number in your cell phone.

2. HAZARDS IDENTIFICATION

2.1. Classification of the product

The product is a pyrotechnic article and it has been classified according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

It is classified as hazardous according to the (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements).

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this SDS.

The hazard classification for human health refers to the substances contained in the pyrotechnic article. The content is isolated and protected.

During the intended use and under reasonably foreseeable conditions, no content leakage is possible and direct contact with the chemicals is not possible. It is absolutely forbidden to attempt to open or tamper with the article or any part of it in any way. The smoke produced during the intended use is not classified as hazardous for human health.

The pyrotechnic article belongs to Division 1.4 and presents no significant hazard. The item presents only a small hazard in the event of ignition or initiation. The effects are largely confined to the package and no projection of fragments is expected. An external fire shall not cause virtually instantaneous explosion of the package.

Hazard classification and indication for the item:

Explosive, Division 1.4 H204 Fire or projection hazard

Hazard classification and indication for chemical mixture sealed inside the item:

Acute toxicity, category 4 H302 Harmful if swallowed
Eye irritation, category 2 H319 Causes serious eye irritation
Hazardous to the aquatic environment, acute toxicity, category 1 H400 Very toxic to aquatic life
Hazardous to the aquatic environment, acute toxicity, category 1 H411 Toxic to aquatic life with long lasting effect

2.2. Label elements

Labeling according to Regulation (EC) No 1272/2008 (CLP) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

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Classification: Division 1.4

GHS Pictogram:


 Signal Word: **Warning**
Hazard and Precautionary Statements:

H204	Fire or projection hazard
P210	Keep away from heat/sparks/open flames/hot surfaces — No smoking
P234	Keep only in original packaging
P240	Ground and bond container and receiving equipment
P280	Wear protective gloves/protective clothing/eye protection/face protection
P370+P372+P380	In case of fire: Explosion risk. Evacuate area
P373	DO NOT fight fire when fire reaches explosives
P501	Dispose of contents/container in accordance with local regulations.

2.3. Other hazards:

Based on available data, the product does not contain any PTB or vPvB in percentage greater than 0,1%.

Burn hazard if not used conforming to the product instructions.

Do not use damaged products.

Keep out the reach of children.

Do not point (and fire) product at people or properties.

Ventilate the premises within 15 minutes after the activation.

3. COMPOSITION/INFORMATION ON INGREDIENTS
3.1. Substances: N/A
3.2. Mixtures:

Chemical characteristics:	Oxidizer and fuel mixture
Description:	Pressed pyrotechnical powder
Net Explosive Content (NEC):	130 g

Chemical name	Formula	CAS-No.	EC-No.	Index-No.	Content (%)	Hazards	H – statements*
2-methylantraquinone	C ₁₅ H ₁₀ O ₂	84-54-7	201-539-6	-	< 30	Aquatic Acute 1 Aquatic Chronic 2	H400 H411
Potassium chlorate	KClO ₃	3811-04-9	223-289-7	017-008-00-5	< 30	Ox. Sol. 1 Acute Tox. 4 Acute Tox. 4 Aquatic chronic 2	H271 H302 H332 H411
Potassium nitrate	KNO ₃	7757-79-1	231-818-8	-	< 1	Ox. Sol. 3	H272

* For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

4.1. Description of first aid measures

In case of exposure to the smoke produced during the intended use no specific measures are necessary. In case of unexpected symptoms or effects, contact a doctor.

4.2. Most important symptoms and effects, both acute and delayed

No episodes of damage to health attributable to exposure to smoke produced during intended use are known. For the effects due to the smoke generating substances see section 11.

4.3 Indication of any immediate medical attention and special treatment needed

In case a doctor is needed, keep the safety data sheet or the label available.

5. FIREFIGHTING MEASURES

5.1. Extinguishing media

In case of fire of the product, DO NOT TRY TO EXTINGUISH THE FIRE AND STAY AT SAFETY DISTANCE.

5.2. Special hazards arising from the substance or mixture

HAZARDS DUE TO EXPOSURE IN THE EVENT OF FIRE

The article is packed so that any hazardous effects arising from accidental functioning are confined within the package unless the package has been degraded by fire. In this case, all blast or projection effects are limited. Containers close to heat sources must be removed immediately or cooled with water.

5.3. Advice for firefighters

GENERAL INFORMATION

Cool containers with water jets to avoid the decomposition of the product and the development of substances potentially dangerous for health. Always wear full fire protection equipment. Collect the extinguishing waters that must not be discharged into the drains. Dispose of contaminated water used for extinction and fire residue according to current regulations.

EQUIPMENT

Normal firefighting clothing, such as open circuit compressed air breathing apparatus (EN 137), flame retardant (EN469), flame retardant gloves (EN 659) and fire brigade boots (HO A29 or A30).

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

If there are no contraindications, spray powder with water to prevent the formation of dust. Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions

The composition inside the product must not penetrate into the sewer system or come into contact surface or ground water.

6.3. Methods and material for containment and cleaning up

Collect the leaked product and put it in containers for recovery or disposal. If there are no contraindications, use jets of water to eliminate product residues.

Make sure the leakage site is well aired. Evaluate the compatibility of the container to be used, by checking section 10. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

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Oral	0,06 mg/kg bw/d	
Inhalation	0,26 mg/m ³	5,76 mg/m ³
Skin	0,11 mg/kg bw/d	3,5 mg/kg bw/d

8.2. Exposure controls

The smoke produced during the intended use is not classified as hazardous for human health according to Regulation (EC) no. 1272/2008 (CLP). A study carried out by the supplier has shown that the smoke generated does not show toxicity in case of short exposures (maximum stay of 15 minutes). All the values found are lower than the limits imposed by European Directive 2017/164 and limits indicated by ACGIH in relation to the TLV-STEL (Threshold Limit Value). The individual protection devices used, if any, must bear the CE marking that certifies their compliance with the regulations in force.

Once the function of the smoke generator is finished it is necessary to ventilate the room. Provide a good level of ventilation (3-5 air changes per hour). Generated ventilation comes from doors and windows. Controlled ventilation means that the air is supplied or subtracted from an electrically powered fan (minimum efficiency: 30%).

HAND PROTECTION

None required.

SKIN PROTECTION

None required.

EYE PROTECTION

None required.

RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, a mask with a type A filter combined with a type P filter should be worn (see standard EN 14387).

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with wastewater or by dumping in waterways.

9. PHYSICAL AND CHEMICAL PROPERTIES
9.1. Information on basic physical and chemical properties

Properties referred to the sealed content of the pyrotechnic article.

 Odour: Aromatic
 Appearance: Pressed powder

Character	Value	Method	Comment
pH	n/a		
Melting point / freezing point	not available		
Initial boiling point	n/a		
Boiling range	n/a		
Flash point	n/a		
Evaporation Rate	n/a		
Flammability of solids and gases	n/a		
Lower flammability limit	not available		
Upper flammability limit	not available		
Lower explosive limit	not available		
Upper explosive limit	not available		
Vapour pressure	n/a		
Vapour density	n/a		
Relative density	not available		
Solubility	partially water soluble		
Partition coefficient: n-octanol/water	not available		
Auto-ignition temperature	not available		
Decomposition temperature	not available		
Viscosity	not available		
Explosive properties	Pyrotechnic article – 1.4 S		
Oxidising properties	pH-value at 20°C It could act as oxidant		

9.2. Other information

Information not available

10. STABILITY AND REACTIVITY

10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

Once activated by the provided electrical igniter, the item emits a dense white smoke generated by pyrotechnical reaction (combustion reaction aimed to produce smoke).

10.2. Chemical stability

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

The powders inside the product are potentially explosive when mixed with air and ignited.

The potassium chlorate inside the product, in contact with acids, could develop chlorine-based toxic gases and may form explosive mixtures with organic substances.

10.4. Conditions to avoid

Avoid shock, frictions and close ignition sources. Avoid exposition of the product to direct sunlight. If the container is broken, avoid the release of the powder inside the product.

10.5. Incompatible materials

The product itself and, in particular, the potassium chlorate inside is incompatible with combustible substances, strong acids and organic substances.

10.6. Hazardous decomposition products

The potassium perchlorate inside the product could decompose if heated, releasing chlorine gas and oxygen.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Metabolism toxicokinetics mechanism of action and other information

The smoke produced during the intended use of the pyrotechnic article is not classified as hazardous for human health according to Regulation (EC) no. 1272/2008 (CLP).

Information on likely routes of exposure.

During the expected and reasonably foreseeable use of the pyrotechnic article the likely routes of exposure are: inhalation, dermal.

Delayed and immediate effects as well as chronic effects from short and long-term exposure.

During intended and reasonably foreseeable use of the article: smoke generation (2-methylantraquinone). A study carried out by the supplier has shown that the smoke generated during the intended use does not show toxicity in case of short term exposures (maximum stay of 15 minutes).

Interactive effects

Information not available

ACUTE TOXICITY

LC50 (inhalation) of the mixture: < 5 mg/l

LD50 (oral) of the mixture: 1754,39 mg/kg

LD50 (dermal) of the mixture: Not classified

LD50 (oral) for 2-methylantraquinone: 4900 mg/kg

LD50 (dermal) for 2-methylantraquinone: > 5000 mg/kg

SKIN CORROSION / IRRITATION

Mixture: does not meet the classification criteria for this hazard class
2-methylantraquinone: non-irritant (In vitro skin irritation with OECD method 439)

SERIOUS EYE DAMAGE / IRRITATION

Mixture: causes serious eye irritation
2-methylantraquinone: non-irritant (Reconstructed Human Cornea-like Epithelium – RhCE - OECD method 492)

RESPIRATORY OR SKIN SENSITISATION

Mixture: does not meet the classification criteria for this hazard class
2-methylantraquinone: non-sensitizing for skin (in vivo non-LLNA)

GERM CELL MUTAGENICITY

Mixture: does not meet the classification criteria for this hazard class
2-methylantraquinone: Negative with and without metabolic activation (Bacterial Reverse Mutation Test, Ames test, OECD method 471)

CARCINOGENICITY

Mixture: does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Mixture: does not meet the classification criteria for this hazard class
2-methylantraquinone: NOAEL reproductive effects in rats F344 / N: 275 mg/ kg/ day

STOT - SINGLE EXPOSURE

Mixture: does not meet the classification criteria for this hazard class

STOT- REPEATED EXPOSURE

Mixture: does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Mixture: does not meet the classification criteria for this hazard class

12. ECOLOGICAL INFORMATION

This product is dangerous for the environment and highly toxic for aquatic organisms.

This product is dangerous for the environment and is toxic for aquatic organisms. In the long term, it has negative effects on aquatic environment.

12.1. Toxicity

2-METHYLANTHRAQUINONE

LC50 - for Fish: 54,44 mg/l/96h (Q)SAR

EC50 - for Crustacea: 0,14 mg/l/48h Daphnia magna (OECD 202)

EC50 - for Algae / Aquatic Plants: 0,21 mg/l/72h

12.2. Persistence and degradability

2-METHYLANTHRAQUINONE

NOT rapidly degradable

12.3. Bioaccumulative potential

Information not available

12.4. Mobility in soil

Information not available

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

12.6. Other adverse effects

Information not available

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product residues should be considered special hazardous waste. The hazard level of waste of this product should be evaluated according to applicable regulations.

Disposal should be carried out in accordance with local health, safety, waste, environmental, storage/manufacture of explosives or pyrotechnics regulations.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

14. TRANSPORT INFORMATION

14.1. UN number

ADR/RID/ADN, IMDG, IATA: 0432

14.2. UN proper shipping name

ADR/RID/ADN, IMDG, IATA: ARTICLES, PYROTECHNIC for technical purposes

14.3. Transport hazard class(es)

ADR/RID/ADN, IMDG, IATA: 1.4 S

Label:



14.4. Packing group

All class 1 dangerous goods (explosives) are assigned to packing group II.

Packaging instruction: P135

14.5. Environmental hazards

NO

14.6. Special precautions for user

Persons employed by the participants referred whose duties concern the carriage of dangerous goods, shall be trained in the requirements governing the carriage of such goods appropriate to their responsibilities and duties.

Before loading, the loading surface of the vehicle or container shall be thoroughly cleaned.

The use of fire or naked flame shall be prohibited on vehicles and containers carrying goods, in their vicinity and during the loading and unloading of these goods.

Smoking, the use of fire or of naked flames shall be prohibited on vehicles carrying substances and articles of Class 1, in their vicinity and during the loading and unloading of these substances and articles. This prohibition of smoking is also applicable to the use of electronic cigarettes and similar devices.

ADR/RID

Limited Quantities: unlimited

Tunnel Restriction code: (E)

IMDG

Limited Quantities: unlimited

IATA

Cargo – Maximum quantity per package: 100 kg

Passenger – Maximum quantity per package: 25 kg

Special Instruction A802

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

n/a

15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for product

Seveso Category - Directive 2012/18/EC: P1b-E1

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006 : None

Substances in Candidate List (Art. 59 REACH): On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1 %.

Substances subject to authorisation (Annex XIV REACH): None

Substances subject to exportation reporting pursuant to /EC) Reg. 649/2012: None

Substances subject to the Rotterdam Convention: POTASSIUM CHLORATE - (CHLORATE)

Substances subject to the Stockholm Convention: None

Healthcare controls: Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

German regulation on the classification of substances hazardous to water (AwSV vom 18 April 2017): WGK 2 – Hazard to waters

15.2. Chemical safety assessment

A chemical safety assessment has been performed for the following contained substances

2-METHYLANTHRAQUINONE

POTASSIUM CHLORATE

POTASSIUM NITRATE

This safety data sheet contains one or more Exposure Scenarios in an integrated form. Contents have been included in sections 1.2, 8, 9, 12, 15 and 16 of this safety data sheet.

16. OTHER INFORMATION

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Expl. 1.4	Explosive, division 1.4
Ox. Sol. 1	Oxidising solid, category 1
Acute Tox. 4	Acute toxicity, category 4
Eye Irrit. 2	Eye irritation, category 2
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2

Referring to Section 3 of this Safety Data Sheet, H-statements for the inner composition components are clarified below:

H-statements

H204	Fire or projection hazard
H271	May cause fire or explosion; strong oxidizer
H272	May intensify fire; oxidizer
H302	Harmful if swallowed
H332	Harmful if inhaled
H319	Causes serious eye irritation
H400	Very toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

LEGEND:

- ADR: Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%

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- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RIO: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

1. Globally Harmonized System of Classification and Labelling of Chemicals (GHS) (ST/SG/AC.10/30/Rev.8), United Nations, 2019.
 2. Regulation (EC) 1907/2006 (REACH) of the European Parliament
 3. Regulation (EC) 1272/2008 (CLP) of the European Parliament
 4. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
 5. Regulation (EU) 2015/830 of the European Parliament
 6. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
 7. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
 8. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
 9. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
 10. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
 11. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
 12. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
 13. Regulation (EU) 2016/1179 (IX Atp. CLP)
 14. Regulation (EU) 2017/1176 (X Atp. CLP)
- The Merck Index. - 10th Edition
 - Handling Chemical Safety
 - INRS - Fiche Toxicologique (toxicological sheet)
 - Patty – Industrial Hygiene and Toxicology
 - N.I. Sax- Dangerous properties of Industrial Materials-7, 1989 Edition
 - IFA GESTIS website
 - ECHA website
 - Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

NOTE FOR USERS:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to the manufacturer or supplier direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The supplier is relieved from any liability arising from improper uses. It is mandatory to provide appointed users with adequate training on how to use and install this product.

Procedure used to derive the classification of the mixture according to GHS and CLP:

Explosive, category 1.4 H204 – Experimental test

Acute Toxicity, category 4 H302 – Calculation method

Serious eye damage/eye irritation, category 2 H319 – Calculation method

Hazardous to the aquatic environment - acute toxicity, category 1 H400 – Calculation method

Hazardous to the aquatic environment - chronic toxicity, category 2 H411 – Calculation method

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