

SNEX – Technical Overview

Product	Dry Powder Fire Extinguisher Device The product can be used to put out fires of the following types:
End Uses	A (solid material, wood), B (liquid, fusible solid, petrol), C (gas), E (electric equipment), F (cooking oil).
Summary	The technical overview is in accordance with European Commission Regulation (EC) No 1907/2006 , Regulation (EC) No 1272/2008 and Regulation (EU) No 2015/830 , and With reference to RoHS Directive 2011/65/EU recasting 2002/95/EC .

Based on the verification results of semi-part samples assigned by the client, the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS Directive **2011/65/EU** recasting **2002/95/EC**.



Ball Dimensions

Size	150mm
Weight	1150g (+/- 10%)
Extinguish Scope	3 CM



Cube Dimensions

Size	125x125x125mm
Weight	1250g
Extinguish Scope	3 CM



Half Cube Dimensions

Size	120x80x120mm
Weight	650g
Extinguish Scope	1.5 CM

- **Noise:** < 120 db.
- **Average Activation time** (with direct flame contact): < 3-15 Seconds.
- **Operational temperatures:** (-40)-(+90)°C.
- **Shelf life:** 5 years

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

- **1.1 Product identifier**
- **Trade name:** Dry Powder Fire Extinguisher SNEX Device
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the mixture**
The product can be used to put out A(solid material, wood), B(liquid, fusible, solid, ,petrol), C(gas), E(electric equipment), and F(cooking oil) fires

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
 - **Classification according to Regulation (EC) No 1272/2008**
The product is not classified according to the CLP regulation.
 - **Information concerning particular hazards for human and environment:**
The product has not to be labelled due to the calculation procedure of Regulation 1272/2008/EC.
 - **Classification system:**
The classification is according to the latest edition of EU Regulation 1272/2008/EC, and extended by company and literature data.
-
- **2.2 Label elements**
 - **Labelling according to Regulation (EC) No 1272/2008** Not applicable
 - **Hazard pictograms** Not applicable
 - **Signal word** Not applicable
 - **Hazard-determining components of labelling:** Not applicable
 - **Hazard statements** Not applicable
 - **Precautionary statements** Not applicable
 - **2.3 Other hazards**
 - **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable
 - **vPvB:** Not applicable

SECTION 3: Composition/information on ingredients

- **3.1 Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Composition:**

CAS: 7722-76-1 EINECS: 231-764-5	ammonium dihydrogenorthophosphate	50,0 %
CAS: 7783-20-2 EINECS: 231-984-1	ammonium sulphate	25,0 %

SNEX – Technical Overview

CAS: 12001-26-2	Mica substance with a Community workplace exposure limit	21,0%
CAS: 63148-57-2 EC number: 613-152-	Poly(methylhydrosiloxane)	4,0%

· **Remark:** All ingredients listed above are not classified according to EU Regulation 1272/2008/EC.

SECTION 4: First aid measures

· 4.1 Description of first aid measures

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:**

Rinse out mouth with water.

Never give anything by mouth to an unconscious person.

Do not induce vomiting; call for medical help immediately.

· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**

· **Suitable extinguishing agents:**

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **5.2 Special hazards arising from the substance or mixture** No further relevant information available.

· **5.3 Advice for firefighters**

· **Protective equipment:**

Wear fully protective suit.

Mouth respiratory protective device.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Avoid formation of dust.

Use respiratory protective device against the effects of fumes/dust/aerosol.

Avoid contact with eyes.

Avoid contact with skin.

· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or groundwater.

· **6.3 Methods and material for containment and cleaning up:**

Pick up mechanically.

Dispose contaminated material as waste according to item 13.

· **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Thorough dedusting.

Ensure good ventilation/exhaustion at the workplace.

Keep receptacles tightly sealed.

Keep away from heat and direct sunlight.

Prevent formation of dust.

Avoid contact with skin and eyes.

For the general occupational hygienic measures refer to section 8.

· **Information about fire - and explosion protection:** Normal measures for preventive fire protection.

· 7.2 Conditions for safe storage, including any incompatibilities:

· **Requirements to be met by storerooms and receptacles:**

Store in a cool location.

Store only in the original receptacle.

· **Information about storage in one common storage facility:** Store away from foodstuffs.

· **Further information about storage conditions:** Store in cool, dry conditions in well-sealed receptacles.

· 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· **Ingredients with limit values that require monitoring at the workplace:**

12001-26-2 Mica (21,0%)

WEL (Great Britain)

Long-term value: 10* 0,8** mg/m³
*total inhalable **respirable

· **Additional information:** The lists valid during the making were used as basis.

· 8.2 Exposure controls

· **Based on composition shown in Section 3, the following measures are suggested for occupational safety measure:**

· **Appropriate engineering controls:** See Section 7 for information about design of technical facilities.

· **Personal protective equipment:**

· **Respiratory protection:** Suitable respiratory protective device recommended.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

SNEX – Technical Overview

- **Penetration time of glove material:**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

- **Environmental exposure controls:**

Control measures must be made in accordance with Community environmental protection legislation.

- **9.1 Information on basic physical and chemical properties**

- **Appearance:**

Form: Powder

Colour: Yellow

- **Odour:** Odourless

- **Odour threshold:** Data not available

- **Self-igniting:** Product is not self-igniting.

- **Explosive properties:** Product does not present an explosion hazard.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No decomposition if used according to specification.
- **10.2 Chemical stability** Stable under recommended storage conditions.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values relevant for classification:**

7783-20-2 ammonium sulphate

Oral	LD50	2840 mg/kg (rat)
------	------	------------------

- **Skin corrosion/irritation:** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation:** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation:** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.
- **12.7 Additional ecological information:**
- **General notes:**
 Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Smaller quantities can be disposed of with household waste.

- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· 14.1 UN-Number · ADR,RID,ADN, IMDG, IATA	Not applicable
· 14.2 UN proper shipping name · ADR,RID,ADN, IMDG, IATA	Not applicable
· 14.3 Transport hazard class(es) · ADR,RID,ADN, IMDG, IATA · Class	Not applicable
· 14.4 Packing group · ADR,RID,ADN, IMDG, IATA	Not applicable
· 14.5 Environmental hazards	Not applicable.
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· 14.8 Transport/Additional information:	Not dangerous according to the above specifications.
· UN "Model Regulation":	-

SECTION 15: Regulatory information

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture · MAK (German Maximum Workplace Concentration)	None of the ingredients is listed.
· Directive 2012/18/EU · Named dangerous substances - ANNEX I None of the ingredients is listed. · National regulations: · Waterhazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.	
· Other regulations, limitations and prohibitive regulations · SVHC Candidate List of REACH Regulation Annex XIV Authorisation (17/12/2015)	None of the ingredients is listed.
· REACH Regulation Annex XVII Restriction (22/4/2015) See Section 16 for information about	None of the ingredients is listed.
· REACH Regulation Annex XIV Authorization List(14/8/2014)	None of the ingredients is listed.
· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.	

SECTION 16: Other information

 The contents of this overview are in accordance with Regulation (EC) No 1907/2006, 1272/2008 and Regulation (EU) No 2015/830.

SNEX – Technical Overview

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of

Chemicals EINECS: European Inventory of Existing Commercial Chemical

Substances ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical

Society) DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very

Bioaccumulative

Verification Method:

1. With reference to IEC 62321-2:2013, the following review was performed for the semi-part samples disjointed from the articles submitted by the Applicant
 2. With reference to IEC 62321-1:2013, tests was performed for the assigned parts indicated by the photos in the report.
 - (1)** With reference to IEC 62321-3-1:2013, screening by EDXRF Spectroscopy
 - (2)** Wet chemical test method
 - a.** With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES
 - b.** With reference to IEC 62321-5:2013, determination of Lead by ICP-OES
 - c.** With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES
 - d.** With reference to IEC 62321:2008, determination of Hexavalent Chromium by spot test / Colorimetric Method using UV-Vis
- With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS

SNEX – Technical Overview

Part No.	Part Description	BOM No.	Restricted Substances	Results of EDXRF (1)	Result of Wet Chemical Testing(2) (mg/kg)	Conclusion on EU RoHS	Sample Submitted / Resubmitted Date
1	Black coating		Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	18 Sep 2015
2	Silvery metal(substrate)		Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply --- ---	18 Sep 2015
3	Silvery metal(substrate)		Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply --- ---	18 Sep 2015
4	Red plastic(jacket)		Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	18 Sep 2015

SNEX – Technical Overview

Part No.	Part Description	BOM No.	Restricted Substances	Results of EDXRF (1)	Result of Wet Chemical Testing(2) (mg/kg)	Conclusion on EU RoHS	Sample Submitted / Resubmitted Date
5	Colorful plastic(jacket)		Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	18 Sep 2015
6	White foam		Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	18 Sep 2015
7	White solid(adhesive)		Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	18 Sep 2015
8	Brown paper		Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	18 Sep 2015

SNEX – Technical Overview

Remark :

(1) (a) There are the results on total Br while test items on restricted substances are PBBs and PBDEs. There is the result on total Cr while test item on restricted substances is Cr(VI).

(b) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP-OES (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC62321-3-1:2013 (unit: mg/kg).

Element	Polymer	Metal	Composite Materials
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	$BL \leq (300-3\sigma) < X$	--	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

(c) BL = Below Limit, OL = Over Limit, IN = Inconclusive, LOD = Limit of Detection, -- = Not regulated.

(d) The XRF screening test for RoHS elements - The reading may be different to the actual content in the sample because of non-uniformity composition.

(2) (a) mg/kg = 0.0001%, MDL = Method detection Limit, ND = Not Detected (<MDL), --- = Not conducted, - = Without BOM.

(b) Unit and MDL in wet chemical test

Test Item	Pb	Cd	Hg
Unit	mg/kg	mg/kg	mg/kg
MDL	10	10	10

The MDL for single compound of PBBs and PBDEs is 100 mg/kg, MDL of Cr(VI) for polymer and composite sample is 10 mg/kg.

(c) According to IEC 62321:2008, result on Cr(VI) for metal sample is shown as Positive/Negative. Negative = Absence of Cr(VI) coating, Positive = Presence of Cr(VI) coating.