PORTABLE FIRE EXTINGUISHER A33/ABC EXTINGUISHING AGENT

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

1.1 – Product identifier	FIRE EXTINGUISHER WITH A32/ABC AS EXTINGUISHING AGENT The SDS refers to the following models: PS2-Y ABC, PS2-YN ABC, PS2-P ABC, PS3-HX ABC
1.2 – Relevant identified uses of the substance or mixture and uses advised against	*Relevant identified uses:* fire extinguishing agent for fire classes A, B and C. The mixture acts as an inhibitor of solid, liquid and/or gaseous fuels. The use of special and specific containers is recommended for correct operation. *Uses advised against:* uses other than those identified as relevant.
1.3 – Details of the supplier of the safety data sheet	ANAF FIRE PROTECTION S.P.A. Via del Commercio, 4 27020 Torre d'Isola (PV), Italy Tel.: +39 (0)382 45 33 Fax.: + 39 (0)283 92 02 79 e-mail: info@anaf.eu internet: www.anaf.eu
1.4 – Emergency telephone number	Tel.: +39 (0)382 45 33 Number available only at the following: 8.30-12.30, 13.30-17.30 (UTC) – Monday to Friday

SECTION 2 – Hazards identification

2.1 – Classification of the substance or mixture	*Classification of the substance or mixture according to Reg. (EC) no. 1272/2008* The product does not meet the classification criteria in any hazard class in accordance with Regulation (EC) no. 1272/2008 relating to the classification, labelling and packaging of substances and mixtures.
2.2 – Label elements	Pictograms: *none* Warning: *none* Hazard statements: *none* Precautionary statements: *none*
2.3 – Other hazards	*PBT, vPvB identification:* the mixture does not contain substances that meet the criteria set out in Annex XIII of Reg. 1907/2006 (REACh) as PBT or vPvB. *Properties as an endocrine disruptor:* the mixture does not contain substances included in the list of art. 59, par. 1, of Reg. 1907/2006 (REACh) due to properties of interference with the endocrine system. The mixture does not contain substances identified as disrupting the endocrine system in accordance with the criteria established in Reg. (EU) 2017/2100 or in Reg. (EU) 2018/605. *Information on other hazards which do not lead to classification:* The extinguishing agent consists of a very fine powder. It easily forms suspensions in moving air and can create aerosols. Prolonged exposure to any type of dust is potentially harmful.

No previous episodes of oral toxicity are known.

SECTION 3 – Composition/information on ingredients

3.1 – Substances Not relevant.

3.2 – Mixtures

Refer to section 16 for the full text of the hazard statements

Extinguishing agent

Sostanza	Numero di identificazione	Numero di registrazione REACH	Quantità *(percentuale in peso)*	Classificazione (Reg. CE 1272/2008)
ammonio solfato	CAS 7783-20-2 EC 231-984-1	01-2119455044-46	63 - 67 %	non classificato
ammonio diidrogenoortofosfato [fosfato di monoammonio]	CAS 7722-76-1 EC 231-764-5	01-2119488166-29	24 – 28 %	non classificato

Gas propellant

Substance	Identification number	REACH registration number	Quantity *(% weight)*	Classification (Reg. EC no. 1272/2008)
nitrogen, compressed	CAS 7727-37-9 EC 231-783-9	*substance not subject to registration (included in Annex IV and V, Reg. REACH)*	100%	H280 *Press. Gas (Comp.)*

SECTION 4 – First aid measures

The information refers to the extinguishing agent.

4.1 – Description of first aid measures

Inhalation: If the product dust is released, tingling, coughing or sneezing may occur. Immediately remove the patient from the contaminated area and let him/her rest in a well-ventilated room. If anyone feels unwell, consult a doctor.
Skin contact (of the pure product): wash thoroughly with soap and water.
Eye contact: wash immediately with plenty of water for at least 10 minutes, protecting the unaffected eye.
Ingestion: rinse mouth and spit out the liquid. Do not, under any circumstances, induce vomiting. Seek immediate medical attention.

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

Inhalation: after inhalation, ammonium sulphate dissolves in the mucous membranes of the respiratory tract, releasing ammonium and sulphate ions, which may be adsorbed.
Skin contact: none known.
Eye contact: slight irritation.
Ingestion: ammonium sulphate is absorbed by the digestive tract. At high dosages (on the order of grams), the percentage of sulphate adsorbed decreases by about 30–40%. Irritation and pain in the gastrointestinal tract are possible, as are nausea, vomiting or diarrhoea.

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

Seek medical advice if discomfort appears following ingestion, irritation or the appearance of skin rashes, or respiratory symptoms.
Notes for the doctor
If required and after medical consultation in the event of significant inhalation,

	administer an inhaler with a β-2 sympathomimetic drug and muscarinic receptor antagonists such as ipatropium bromide..

SECTION 5 – Firefighting measures

5.1 – Extinguishing media	Suitable fire-extinguishing methods: not applicable. The product is an extinguisher for Class A, B and C fires. Unsuitable fire-extinguishing media: not applicable.
5.2 – Special hazards arising from the substance or mixture	Particular hazards: Heating the extinguishing powder until it decomposes, releasing toxic fumes. If accidentally mixed with oxidising substances (chlorate, nitrate or potassium nitrite), there is a risk of explosion during combustion. Thermal decomposition or combustion of the product: nitrogen oxides, ammonia, possibly phosphorus oxides and sulphur dioxide or sulphur trioxide. Exposure of the fire extinguisher to flames may cause the container to rupture or burst.
5.3 – Advice for firefighters	Specific firefighting methods: (information on the extinguishing powder) open the doors and windows of the room for maximum ventilation. Avoid breathing in (toxic) fumes. People should be situated upwind from the fire. Special protection when fighting fires: use a self-contained breathing apparatus if fumes are present. Dispose of fire residue and contaminated water in accordance with official regulations.

SECTION 6 – Accidental release measures

The information refers to the extinguishing agent.

6.1 – Personal precautions, protective equipment and emergency procedures	6.1.1 For those not directly involved: wear a mask, gloves and protective clothing. 6.1.2 For those who are directly involved: wear a mask, gloves and protective clothing. Provide adequate ventilation. Evacuate the hazardous area and, if necessary, consult an expert.
6.2 – Environmental precautions	Dispose of the residue in accordance with current regulations.
6.3 – Methods and material for containment and cleaning up	6.3.1 For containment: collect the product for re-use, if possible, or disposal. 6.3.2 For cleaning: after collection, wash the affected area and materials with water. 6.3.3 Other information: nothing in particular.
6.4 – Reference to other sections	Refer to sections 8 and 13 for more information.

SECTION 7 – Handling and storage

The information refers to the extinguishing agent.

7.1 – Precautions for safe handling	Avoid generating excessive dust. Avoid contamination with combustible materials (e.g. diesel, grease, etc.) and other incompatible materials. Avoid unnecessary air exposure of the product to prevent moisture absorption. Thoroughly clean systems before maintenance or repair work. Keep the product from entering the sewer system. Do not eat, drink or smoke during handling. After handling, wash hands with soap and water. Contaminated work clothes must not be taken away from the workplace. For exposure control and personal protection measures, see section 8.

7.2 – Conditions for safe storage, including any incompatibilities	Store in the original, tightly closed container. Do not store in open or unlabelled containers. Keep containers upright and secure, avoiding the possibility of falls or impacts. Store in a cool place, away from heat sources and direct sunlight. Storage temperature: -30°C – +60°C. Do not store if partially used.
7.3 – Specific end use(s)	Multipurpose extinguishing powder approved for extinguishing Class A, B and C fires.

SECTION 8 – Exposure controls/personal protection

The information refers to the extinguishing agent.

8.1 – Control parameters

ammonium sulphate (CAS 7783-20-2)

TLV-TWA (inhalable fraction, OEL(IT))	10 mg/m^3
TLV-TWA (respirable fraction, PEL (IT))	3 mg/m^3
DNEL (systemic effects, long term, workers, inhalation)	11,2 mg/m^3
DNEL (systemic effects, long term, workers, dermal)	42,67 mg/kg bw/day
DNEL (systemic effects, long term, population, inhalation)	1,7 mg/m^3
DNEL (systemic effects, long term, population, dermal)	12,8 mg/kg bw/day
DNEL (systemic effects, long term, population, oral)	6,4 mg/kg bw/day
PNEC (STP)	16,2 mg/L
PNEC (fresh water)	0,312 mg/L
PNEC (sea water)	0,031 mg/L
PNEC (sediments fresh water)	0,063 mg/kg
PNEC (soil)	62,6 mg/kg soil dw

ammonium dihydrogenortophosphate (CAS 7722-76-1)

DNEL (systemic effects, long term, workers, inhalation)	6,1 mg/m^3
DNEL (systemic effects, long term, workers, dermal)	34,7 mg/kg bw/day
DNEL (systemic effects, long term, population, inhalation)	1,8 mg/m^3
DNEL (systemic effects, long term, population, dermal)	20,8 mg/kg bw/day
DNEL (systemic effects, long term, population, oral)	2,1 mg/kg bw/day
PNEC (fresh water)	1,7 mg/L
PNEC (sea water)	0,17 mg/L
PNEC (intermittent emissions)	17 mg/L

8.2 – Exposure controls

8.2.1 Appropriate technical controls

Hygiene controls: avoid high dust concentrations and adjust ventilation where necessary. Do not eat, drink or smoke during handling. Wash hands after handling the product and before eating, drinking or smoking. Observe the usual safety measures for handling chemicals.

Pressurised systems must be periodically checked for leaks.

8.2.2. Individual protection

Eye/face protection: wear goggles with side shields (powdery material).

Hand protection: not required for normal use.

Other: wear normal work clothes.

Respiratory protection: not required for normal use.

Thermal hazards: no hazards to report.

Environmental exposure controls: use according to good working practices, avoiding dispersal of the product in the environment.

SECTION 9 – Physical and chemical properties

9.1 – Information on basic physical and chemical properties	*a. physical state*	pressure vessel (fire extinguisher)
	b. colour	not applicable

	c. odour	not applicable
	d. melting point/freezing point	ammonium sulphate: > 280 °C ammonium dihydrogenortophosphate: > 190 °C
	e. boiling point or initial boiling point and boiling range	ammonium dihydrogenortophosphate: decomposition from 190 °C
	f. flammability	not flammable
	g. lower and upper explosion limit	not relevant
	h. flash point	not relevant
	i. auto-ignition temperature	not relevant
	j. decomposition temperature	ammonium dihydrogenortophosphate: 190 °C
	k. pH	4,5-6,0 (0,1% in acqua).
	l. kinematic viscosity	not relevant
	m. solubility	ammonium sulphate: 754-767 g/L a 20 °C (in acqua) ammonium dihydrogenortophosphate: 368 g/L a 20 °C (in acqua)
	n. partition coefficient n-octanol/water (log value)	data not available for the mixture ammonium sulphate: -5,1 a 25 °C
	o. vapour pressure	not relevant
	p. density and/or relative density	Extinguishing agent: 1,65-1,85 g/cm^3 (apparent density: 0,82-0,96 g/cm^3)
	q. relative vapour density	not relevant
	r. particle characteristics	not relevant
9.2 – Other information	*Information relating to physical hazard classes:* Content of COV: 0% Asphyxiant gas under pressure.	

SECTION 10 – Stability and reactivity

The information refers to the extinguishing agent.

10.1 – Reactivity	No risk of reactivity.
10.2 – Chemical stability	No hazardous reactions if handled or stored in accordance with regulations.
10.3 – Possibility of hazardous reactions	Decomposes at temperatures above 190°C, releasing ammonia. Contamination with incompatible materials.
10.4 – Conditions to avoid	Proximity to heat sources or fire. Contamination with incompatible materials. Limited heating. Decomposes at temperatures above 190°C, releasing gas. Welding or hot work on equipment or installations that may contain residue of the product.
10.5 – Incompatible materials	Alkalis, strong acids. Strong oxidants (chlorates, nitrates and nitrites), bases.
10.6 – Hazardous decomposition products	Releases ammonia when reacting with strong bases. Decomposes when heated to high temperatures, releasing toxic gases (e.g. NOx, ammonia, SO_3 and SO_2, phosphorous oxides). May produce ammonia gas when in contact with alkalis such as lime or caustic soda.

SECTION 11 – Toxicological information

The information refers to the extinguishing agent.
ATE(mix) oral = ∞
ATE(mix) dermal = ∞

ATE(mix) inhal = ∞

11.1 – Information on hazard classes as defined in Regulation (EC) No 1272/2008	a. **acute toxicity**: Based on the available data, the classification criteria are not met. ammonium sulphate: DL50 (dermal, rat/mouse): > 2000 mg/kg bw CL50 (inhal, guineapig, 8h): 1000 – 1200 mg/m^3
	b. **skin corrosion/irritation**: Based on the available data, the classification criteria are not met.
	c. **serious eye damage/irritation:** Based on the available data, the classification criteria are not met. ammonium sulphate: Slight eye irritation.
	d. **respiratory or skin sensitisation:** Based on the available data, the classification criteria are not met.
	e. **germ cell mutagenicity:** based on available data, the classification criteria are not met.
	f. **carcinogenicity:** ammonium sulphate: NOAEL = 284 mg/kg bw/day
	g. **reproductive toxicity:** ammonium sulphate: NOAEL = 1500 mg/kg bw/day ammonium dihydrogenortophosphate: NOAEL ≥ 1500 mg/kg bw/day
	h. **STOT-single exposure:** based on available data, the classification criteria are not met.
	i. **STOT-repeated exposure:** based on available data, the classification criteria are not met.
	j. **aspiration hazard:** based on available data, the classification criteria are not met.
11.2 – Information on other hazards	a. **endocrine disrupting properties**: The mixture does not contain any endocrine-disrupting substances.
	b. **other information:** no data available.

SECTION 12 – Ecological information

The information refers to the extinguishing agent..

12.1 – Toxicity	ammonium sulphate: CL50 (fish, *Oncorphynchus mykkis*, 96h): 53 mg/L CE50 (invertebrate, *Daphnia magna*, 48h): 129 mg/L CE50 (algae, *Chlorella vulgaris*, 18d): 2700 mg/L CE50 (microorganism, 0,5h): 1618 mg/L ammonium dihydrogenortophosphate: CL50 (fish, *Pimaphales promelas*, 96h): 155 mg/L
12.2 – Persistence and degradability	Not applicable, because the components are inorganic
12.3 – Bioaccumulative potential	Ammonium dihydrogen phosphate: no bioaccumulation.
12.4 – Mobility in soil	No data available.
12.5 – Results of PBT and vPvB assessment	Not applicable, because the components are inorganic.
12.6 – Endocrine disrupting properties	No data available.
12.7 – Other adverse effects	Bacteria in the soil convert the ammonia into nitrate, which can be absorbed by

plants or denitrified by microorganisms into nitrogen and nitrous oxide. In water, ammonium and phosphate ions can cause eutrophication, and therefore an increase in algae growth. The decomposition of algae can reduce oxygen which, if significant, could asphyxiate other aquatic organisms.

SECTION 13 – Disposal considerations

13.1 – Waste treatment methods

Residues must be disposed of in accordance with current regulations by delivering empty containers to an authorised disposal company equipped to safely handle pressurised containers containing residues of flammable liquids and gases.
Empty containers heated above 50°C may burst.
Recover if possible. Follow current local or national regulations. For handling and measures in the event waste is accidentally spilled, the indications given in sections 6 and 7 generally apply; however, specific precautions and actions must be evaluated in relation to the composition of the waste.
Dispose of the waste after assessing possibilities for its reuse in the same or another production cycle, or for recovery at companies authorised under current legislation.
Disposal via discharge into the sewer is not permitted..

SECTION 14 – Transport information

14.1 – UN number or ID number

Regulations	UN number
ADR/RID/ADN	UN 1044
IMDG Code	
ICAO-TI/IATA-DGR	

14.2 – UN proper shipping name

Regulations	Proper shipping number
ADR/RID/ADN	FIRE EXTINGUISHERS with compressed or liquefied gas
IMDG Code	FIRE EXTINGUISHERS with compressed or liquefied gas
ICAO-TI/IATA-DGR	FIRE EXTINGUISHERS with compressed or liquefied gas

14.3 – Transport hazard class(es)

Regulations	Transport hazard class(es)
ADR/RID/ADN	Class 2 Label 2.2 Classification code 6A
IMDG Code	Division 2.2
ICAO-TI/IATA-DGR	Division 2.2

14.4 – Packing group

Regulations	Packing group
ADR/RID/ADN	not applicable
IMDG Code	
ICAO-TI/IATA-DGR	

14.5 – Environmental hazards

Regulations	Environmental hazards
ADR/RID/ADN	not applicable
IMDG Code	
ICAO-TI/IATA-DGR	

14.6 – Special precautions for user	All phases of preparation, handling and transport of dangerous goods, including packaging, documentation, marking and labelling, loading and unloading activities, must be carried out by personnel who have received the necessary training required by the modal regulations. **Specific provisions for ADR/RID/ADN** The fire extinguisher is manufactured, tested, approved and labelled in accordance with the provisions applied in the country of manufacture (as per Special Provision 225). This article is manufactured and filled in accordance with the provisions applicable in the country of manufacture and is equipped with protection against accidental discharge. If packed according to the provisions described in Special Provision 594, it is not subject to the provisions of ADR/RID/ADN. **Specific provisions for the IMDG-Code:** The fire extinguisher is manufactured, tested, approved and labelled in accordance with the provisions applied in the country of manufacture (as per Special Provision 225). **Specific provisions for ICAO-TI/IATA-DGR:** The fire extinguisher is manufactured, tested, approved and labelled in accordance with the provisions applied in the country of manufacture (as per Special Provision A19).
14.7 – Maritime transport in bulk according to IMO instruments	Not applicable.

SECTION 15 – Regulatory information

15.1 – Safety, health and environmental regulations/legislation specific for the substance or mixture	Reg. (EC) n. 1907/2006 (REACH) The mixture contains substances subject to restriction, included in Annex XVII of the REACH Reg. However, these restrictions do not apply to this type of product. Italian Home Office Decree 07 January 2005 WGK – German Water Hazard Class ammonium sulphate Substance n. 296 WGK 1 – Low risk for water. ammonium dihydrogenortophosphate Substance n. 2309 WGK 1 – Low risk for water. nitrogen Substance n. 1351 Not hazardous for water.
15.2 – Chemical safety assessment	The supplier has not carried out a chemical safety assessment.

SECTION 16 – Other information

Document information

The product does not fall under the obligation to draw up and supply a Safety Data Sheet, as it meets the definition of "article". However, the product supplier has drawn up this document, on a voluntary basis, according to the standard required for SDSs, as governed by Annex II of Reg. (EC) 1907/2006 as amended by Reg. (EU) 2020/878.

Notice to users

This document is intended to provide guidance: 1) for appropriate and careful handling of the product by qualified personnel or personnel who work under the supervision of personnel skilled in the handling of chemical substances; 2) for emergency management; 3) for the assessment and management of risks deriving from the use, handling, transport and storage of the product. The product must not be used for purposes other than those indicated in section 1. The information contained in this SDS is based on the knowledge available at the date of compilation relating to the requirements for safety, health, environmental protection and correct use of the product.

The person responsible for this document cannot provide warnings about all the dangers deriving from the use or interaction with other chemicals or materials. The user is responsible for the safe use of the product, the adequacy of the product for the use for which it is applied and its correct disposal.

The information provided is not to be considered a declaration or guarantee, either expressed or implied, of merchantability, fitness for a particular purpose, quality, or of any nature.

The user must bear in mind the possible risks associated with a use other than that for which the product is supplied.

This SDS does not in any case dispense the user from knowledge and from the application of the set of regulations pertinent to his activity.

This SDS does not exempt the user from ensuring that he does not have obligations other than those mentioned and regulating the possession and use of the product for which he is solely responsible.

Change list

Rev. 0 – First emission

Changes since the previous revision

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Abbreviations and acronyms

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS [Number]: Chemical American Society [Number]
CE50: Median effective concentration
CL50: Average lethal concentration
DL50: Average lethal dose.
DNEL: Derived No Effect Level.
IARC: International Agency for Research on Cancer
ICAO-TI: International Civil Aviation Organization – Technical Instruction
IMDG-Code: International Maritime Dangerous Goods Code
LEL: Lower Explosion Level

N/A: Non applicabile
n.d.: non disponibile
PBT: Persistent, Bioaccumulative, Toxic
RID: European Agreement concerning the International Carriage of Dangerous Goods by Railroad
STOT: Specific Target Organ Toxicity
UEL: Upper Explosion Level
vPvB: very persistent, very bioaccumulative.

Hazard statements mentioned in the safety data sheet:
H280 *(Press. Gas (Comp.))* Contains gas under pressure: may explode if heated.

Bibliography:
SDS of similar extinguishing mixtures
ECHA website
IFA-Gestis website