MATERIAL SAFETY DATA SHEET

A32/ABC
Product Code: 32.000Z.0000.00

Issue / Date: November 2012 Rev. 1

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier:
This is a result set of blend several substances.
Name **A32/ABC**

1.2. Relevant identifier uses of the substance or mixture and not recommended uses:
The product for use in fire extinguishing of class A, B and C. The formulation acts as an inhibitor of fires burning solid, liquid and / or gaseous. Recommended use in special containers for specific discharge.

1.3. Details of the supplier of the safety data sheet:

Company:	ANAF S.P.A.
Street:	Via del Commercio, 4
Town:	IT-27020 Torre d'Isola
Contact Person:	Ing. Danilo Romano
Tel.	0039 (0)382 45 33
Fax:	0039 (0)382 92 02 79
e-mail:	info@anaf.eu
Internet:	www.anaf.eu

1.4. Emergency telephone number: 02-66101029 Ospedale Niguarda (MI)

2. HAZARDS IDENTIFICATION

2.1. Classifications of the mixture:
All the components of this mixture are not classified as dangerous according to European Union legislation:
- Classification according to Regulation (EC) No. 1272/2008 (CLP): NOT CLASSIFIED
- Classification according to Directive 67/548/EEC or 1999/45/EC: NOT CLASSIFIED

2.2. Label elements:
- Labelling according to Regulation (EC) No. 1272/2008 (CLP): NOT CLASSIFIED
- Labelling according to Directive 67/548/EEC or 1999/45/EC: The product does not be labelled in accordance with ECC directives.

2.3. Other hazards

This mixture presents like a very fine powder. It forms easily dust with air action and can form aerosols. A long exposure to any kind of dust is potentially harmful.
There is no history of oral toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture of substances:

Component	REACH No.	CAS No.	Content (%w/w)	Classification according to:
Monoammonium phosphate	01-2119488166-29-xxxx	7722-7**6**-1	20,5 %	Directive 67/548/EEC: not classified Regulation (EC) Nº 1272/2008 (CLP): Not classified
Ammonium sulphate	Not applicable	7783-20-2	74,5 %	Directive 67/548/EEC: not classified Regulation (EC) Nº 1272/2008 (CLP): Not classified

4. FIRST AID MEASURES

4.1. Description of first aid measures

- **Inhalation**: Remove to fresh air. If powder ejected could appear itch eyes, discomfort with coughing and sneezing.
- **Eye contact:** Flush eyes with plenty of water. If trouble persist, get medical attention.
- **Skin contact:** Flush skin with plenty of water and soap.
- **Ingestion:** Never induce vomiting. Rinse the mouth with water. If necessary, get medical attention.

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

Some lung effects may be delayed.

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

Inhalation of gas from a fire or thermal decomposition, containing ammonia, can cause lung edema. Symptoms may appear later.

5. FIRE-FIGHTING MEASURES

This product is a fire extinguishing agent for class A, B and C fires.

5.1. Extinguishing media

- **Suitable fire extinguishing media**: Any extinguishing media (see Chapter 10).
- **Extinguishing media which shall not be used for safety reasons**: Not applicable

5.2. Special hazards arising from the substance or mixture

- Special hazards: Heating to decomposition releases toxic. If accidentally mixed with oxidants (chlorate, potassium nitrate or nitrite) risk of explosion when burning.

- Hazardous combustion products: nitrogen oxides, ammonia, may release phosphorus oxides and may sulphur dioxide and trioxide release.

5.3. Special protective equipment for fire-fighters:

- Specific methods of fire fighting: open doors and windows of the enclosure to provide maximum ventilation. Avoid breathing the fumes (toxic). Getting downwind on fire. Apply cooling water to the containers exposed to flames until the fire is out.

- Special protection for fire fighting: wear self-contained breathing apparatus in case of existence of smoke. Dispose of fire remains and contaminated fire fighting water in accordance with official regulations.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures:

Adequate ventilation is required. Avoid creating dusty conditions and prevent their dispersal by wind. Avoid walking through spilled product and dust exposure.

6.2. Environmental precautions:

Prevent entry into sewers, drains or confined areas. Keep away of drainage and groundwater (harmful to aquatic organisms). Inform the relevant authorities in case of accidental contamination of watercourses.

6.3. Methods and materials for containment and cleaning up:

Any spills should be cleaned up promptly, swept and put in a clean mouth open for safe disposal labelling avoiding dust formation. Clean the affected area with dust exhausting and removing the parts with hot water and soap.

6.4. Reference to other sections

See Section 1 for contact details, section 8 for appropriate personal protective equipment and section n. 13 for waste disposal.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling:

- Avoid excessive generation of dust.
- Avoid contamination by combustible material (eg oil, grease, etc..) and incompatible material.
- Avoid unnecessary exposure to the atmosphere to prevent moisture absorption.
- When handling the product over long periods use appropriate personal protective equipment, eg. gloves.
- Carefully clean the facility before performing maintenance or repairs.
- Prevent entry into drains, basements or confined areas.

7.2. Conditions for safe storage, including any incompatibilities

- Keep closed in the original and closed container
- Keep dry at ambient temperature
- Keep apart of alkalis
- Observe all local warnings and precautions for storage.

7.3. Specific uses:

Dry chemical powder for class A, B and C fire extinguishers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values:

Exposure limit values		Component		No. CAS				
		Monoammonium phosphate		7722-76-1				
ISQ	DNEL		Systemic	Workers				Consumers
				Industrial		Professional		
		Oral	Short term Long Term	Not Applicable		Not Applicable		Not available 2,1 mg/bw Kg/day
		Inhalation	Short term Long Term	Not Available 6,1 mg/m^3		Not Available 6,1 mg/m^3		Not available 1,8 mg/bw Kg/day
		Dermal	Short term Long Term	Not Available 34,7 mg/bw kg/day		Not Available 34,7 mg/bw kg/day		Not available 20,8 mg/bw Kg/day
	PNEC	Water		Air	Soil	Micro-biologic	Sediment	Oral
		Fresh water: 1,7mg/L Sea water: 0,17mg/L Intermittent emissions: 17mg/L		Not Available	Not Available	10mg/L	Not Available	Not Available

Exposure limit values		Component		No. CAS				
		Ammonium Sulphate		7783-20-2				
ISQ	DNEL		Systemic	Workers				Consumers
				Industrial		Professional		
		Oral	Long Term	Not Applicable		Not Applicable		6,4 mg/bw Kg/day
		Inhalation	Long Term	11,17 mg/m^3		11,17 mg/m^3		1,67 mg/ m^3
		Dermal	Long Term	42,67 mg/bw kg/day		42,67 mg/bw kg/day		12,8 mg/bw Kg/day
	PNEC	Water		Air	Soil	Micro-biologic	Sediment	Oral
		Fresh water: 0,312mg/L Sea water: 0,0312mg/L Intermittent emissions: 0,53mg/L		Not Available	62,6mg/kg dry soil	16,18mg/L	0,063mg/Kg Dry sediment	Low potential to bioaccumulate

8.2. Exposure controls:

- **Hygiene measures:** Avoid high dust concentration and provide ventilation where necessary. When handling do not eat, drink or smoke. Wash hands after handling and before eating, drinking or smoking. Use the lavatory at the end of the workday.

- **Individual protection measures:**

Eyes	Safety glasses with side shields (EN 166) to prevent eye irritation. If dust goggle use.
Skin and body	Work wear
Respiratory	If dust concentration is high and / or insufficient ventilation, wear a mask or dust respirator with appropriate filter.
Thermal	

Environmental exposure controls: see section 6.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on fundamental chemical and physical properties:

Appearance:	free flow powder
Odour*:*	odourless
pH:	(0,1% aqueous) 4,5-6,0
Boiling point*:*	decomposes above 190ºC
Vapor pressure*:*	Not applicable
Relative density*:*	1.65-1.85
Water Solubility*:*	partially soluble
Repartition coefficient *n-octanol/water*:*	Not applicable
Flash point:	Not applicable
Flammability*:*	Not applicable
Explosives properties*:*	Not applicable
Oxidizing properties*:*	Not applicable
Viscosity*:*	Not applicable
Vapour density*:*	Not applicable
Melting point*:*	above 190ºC
Change in physical state*:*	-60/+85ºC
Apparent density*:*	*0.82-0.96 g/cm3*

9.2. Other information:
Not applicable

10. STABILITY AND REACTIVITY

10.1. Reactivity:
Stable under normal conditions of storage, handling and use (see sec. 7).

10.2. Chemical stability:
Stable under normal conditions of storage, handling and use (see sec. 7).

10.3. Possibility of hazardous reactions:
When heated above 190 ° C decomposes releasing ammonia.
Contamination with incompatible materials (see section 10.5).

10.4. Conditions to avoid:

Proximity to sources of heat or fire.
Contamination by incompatible materials (see section 10.5).
Heating above 190ºC (release gases)
Heating under confinement.
Welding works or thermal equipment or plants that may contain product residues.

10.5. Materials to avoid:

Alkalis, strong acids, copper and its alloys.
Strong oxidizers (chlorates, nitrates and nitrites) and bases.

10.6. Hazardous decomposition products:

In case of fire see section 5.
When react with strong bases releases ammonia . See Sections 2 and 9.
When heated strongly decomposes, releasing toxic gases (eg NOx, ammonia, SO2 and SO3). When in contact with alkaline materials such as lime or caustic soda, can release ammonia gas.

11. TOXICOLOGICAL INFORMATION

MONOAMMONIUM PHOSPHATE

Acute toxicity

Component	CAS No	Method	Species	Via	Result
MAP	7722-76-1	OECD 425 --- OECD 402	Rat	Oral	LD50: >2000mg/bw. Kg LC50 (4h): >5mg/L LD50: 5000mg/bw. Kg

Sensitizer: no known significant effects or critical hazards.

Repeated dose toxicity: (OCDE 422, rat, via oral)
NOAEL = 250mg/bw. Kg /day

Carcinogenicity: no known significant effects or critical hazards.

Mutagenicity: no known significant effects or critical hazards.
Ames Test negative (OECD 471).
Mammalian chromosome aberration Test negative (OECD 473)

Teratogenicity: (OCDE 422, rat, via oral)
NOAEL ≥1500mg/bw. Kg /día

AMMONIUM SULFATE:

Acute toxicity					
Component	CAS No	Method	Species	Via	Result
MAP	7783-20-2	LD50	Rat	Oral	2000-4250mg/Kg >1000mg/m3 (8h) >2000mg/Kg
Irritation/ corrosion: Non irritating					
Sensitizer: Not sensitizing.					
Repeated dose toxicity: no known significant effects or critical hazards.					
Carcinogecity: no known significant effects or critical hazards. NOAEL = 284mg/bw. Kg /day					
Mutagenicity: no known significant effects or critical hazards.					
Reproductive Toxicity: (OCDE 422, rat, via oral) NOAEL =1500mg/bw. Kg /day					
Notes	***General for ammonium salts:***				
	Ingestion Nausea, vomiting and / or diarrhea.				
	Systemic effects After ingestion of large amounts: decreased blood pressure, collapse, disorder in the central nervous system, respiratory paralysis, narcosis, haemolysis.				

12. ECOLOGICAL INFORMATION

12.1. Toxicity:

Fish Toxicity:

Component	**CAS No**	**Term**	**Fish (Oncorhynchus mykkis)**	**Crustaceans (Daphnia carinata)**	**Algae (Selenastrum capricornutum)**
MAP	7722-76-1	Short term	LC50(96h) >85,9mg/L	LC50(72h) 1970-1825mg/L	NOEC(72h) >97,1mg/L

Ecotoxicity:

Component	CAS No	Term	Fish (Oncorhynchus mykkis)	Crustaceans (Daphnia carinata)	Algae (Selenastrum capricornutum)
Ammonium sulfate	7783-20-2	CE50	Invertebrate Daphnia magna	96h	168,8mg/L
		CE50	Algae: Chlorellla vulgaris	18d	2700mg/L
		LC50	Oncorphynchus mykkis	96h	53mg/L

12.2. Persistence and degradability

Component	CAS No	Aquatic half-life	Photo dissociation	Biodegradability
MAP	7722-76-1	Not available	Not available	Easily
Ammonium sulfate	7783-20-2	Not available	No evidence of photo degradation	Not necessary. Inorganic substance

12.3. Bio accumulative potential:

Component	CAS No	Partition coefficient octanol-water (Kow) Partition coefficient octanol-water (Kow)	BCF	Potential of bioaccumulation
MAP	7722-76-1	Not available	---	Not available
Ammonium sulfate	7783-20-2	Not available	---	---

12.4. Mobility in soil:

Component	CAS No	Result	
MAP	7722-76-1	Soluble in water and citrate. Are rapidly transformed by soil microorganisms	
Ammonium sulphate	7783-20-2	**Adsorption**	Not available
		Volatilization	Not available

12.5. Results of PBT and mPmB assessment:

Component	CAS No	Result
MAP	7722-76-1	Not available
Ammonium sulfate	7783-20-2	According to Annex XIII of Regulation (EC) No 1907/2006, not being PBT or vPvB because is an inorganic substance.

12.6. Other adverse effects:

Soil bacteria convert ammonia to nitrate, which can be absorbed by plants or microorganisms denitrified by nitrogen and nitrous oxide.
In water, ammonium ions and phosphate can cause eutrophication, resulting in an increase in the growth of algae. The decomposition of the algae can reduce dissolved oxygen, if significant, may cause suffocation of aquatic organisms.

13. DISPOSAL CONSIDERATIONS

Depending on the degree of contamination removed at a licensed waste facility. Apply local or national regulations for disposal.
Do not empty into drains.
Dispose of waste material and its container in a safe way. Dispose in accordance with all local and national regulations. Empty containers shaking to remove as much about your content. In case of approval by local authorities, empty containers may be disposed of as non-hazardous material or returned for recycling. The controlled biodegradation of wastewater treatment is possible.

14. TRANSPORT INFORMATION

14.1. UN number: Not applicable
14.2. UN proper shipping name: Not applicable
14.3. Transport hazard class(es) of: Not applicable
14.4. Packing group: 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 73/78 and the IBC Code: Not applicable

15. REGULATORY INFORMATION

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

Regulation 1907/2006 (REACH)
Regulation 1272/2008 (CLP)
Directives 67/548/EEC and 1999/45/EC (dangerous substances and preparations).
In Spain:
R.D. 363/95 and RD. 255/03: (Dangerous Substances and Preparations)
R.D. 374/2001 (chemical agents).

15.2. Chemical Safety Assessment:
Carried out for substances components monoammonium phosphate and ammonium sulphate.

16. OTHER INFORMATION

Risk Phrases: Not applicable
Hazard Phrases: Not applicable
Precautionary: Not applicable
References and data sources:

- Chemical Safety Assessment of MAP. Guidance Documents. EFMA / FERTILIZER EUROPE; Facts HPV TFI; NOTOX.

- Chemical Safety Assessment of ammonium sulphate; Guidance Documents. EFMA / FERTILIZER EUROPE; Facts HPV TFI; NOTOX.

Abbreviations and acronyms

- MAP: monoammonium phosphate
- NOAEL: No Observed Adverse Effect Dose
- LD50: Lethal Dose 50%
- LC50: Lethal Concentration 50%
- DNEL: derived No Effect concentration
- PNEC: predicted no-effect concentration
- LOEC: lowest concentration effects observed
- NOEC: no observed effect concentration
- NOAEC: no observed adverse effects concentration
- Adequate training for employees mandatory training on occupational safety.

Changes in this version are due to update this SDS under COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

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