



Knowledge grows

BOLIFOR[®] MAP

Mono-Ammonium Phosphate - Feed Grade Aqua

BOLIFOR[®] mono-ammonium phosphate (MAP) is a purified unique feed grade combination of phosphorus and nitrogen produced at precise conditions by reacting phosphoric acid and an ammonia source in a granulator. Yara's P source is apatite, of volcanic origin, which makes the phosphoric acid virtually free from impurities. The purity of the raw materials and Yara's integrated production process, according to GMP+ standard, ensure an excellent product consistency and a level of undesirable substances well below that stipulated by EU feed legislation.

BOLIFOR[®] MAP appears as off-white granules. BOLIFOR[®] MAP is odorless and has a neutral taste.

Identification

Chemical formula: $\text{NH}_4\text{H}_2\text{PO}_4$
CAS No.: 7722-76-1

Inorganic feed material according to Regulation (EC) No 767/2009 of the European Parliament and of the Council and Commission Regulation (EU) No 68/2013.

Recommended use / Applications

The excellent quality makes BOLIFOR[®] MAP a preferred source of phosphorus in concentrates, complete feed, mineral supplements and other mineral feed applications.

Sales specification

Product Properties	
Phosphorus (P)	26%
Relative solubility of phosphorus in	
- 2% citric acid	99%
- alkaline ammonium citrate	98%
- water	95%
Nitrogen (N)	10.5%
pH	4 - 4.5
Ash insoluble in HCl 3N	4.5%
Moisture	< 3%

Physical Properties	
Appearance	Fine granules >95% within 0.2 - 1.5 mm, guaranteed when delivered from factory
Bulk density kg/m^3	850 - 1100
Water activity, a_w	< 0.70



Special Advantages

BOLIFOR® MAP is free-flowing and blends easily with other feed material. BOLIFOR® MAP has proven high in vitro phosphorus solubility in acidic and neutral conditions. Phosphorus digestibility of BOLIFOR® MAP has been assessed, in vivo, in different aquatic species, with outstanding results. Due to its high phosphorus digestibility, BOLIFOR® MAP:

- Maximizes phosphorus absorption and retention;
- Minimizes phosphorus discharge into the water, minimizing the risk of water eutrophication. Preservation of water quality means ensuring aquaculture sustainability.
- BOLIFOR® MAP requires lower inclusion rates than other inorganic feed phosphates, maximizing feed cost-efficiency and minimizing logistical handling

Quality check references

Total phosphorus (P) extraction	Comparable with Regulation (EC) No 2003/2003 method 3.1.1
- in 2% citric acid	Regulation (EC) No 2003/2003 method 3.1.3.
- in alkaline ammonium citrate 98%	Regulation (EC) No 2003/2003 method 3.1.5.1
- water 75%	Regulation (EC) No 2003/2003 method 3.1.6
Phosphorus Determination	Comparable with Regulation (EC) No 2003/2003 method 3.2
pH	1% solution, in water
Ash insoluble in 3N HCl	Directive 71/250/EEC method 6
Moisture (mechanical free water)	Acetone wash, ambient temperature

Undesirable substances	Standard specification	BOLIFOR® MAP	Method of analysis
Fluorine (F)	Max. 2 g/kg	< 2 g/kg	ISE
Arsenic (As)	Max. 10 mg/kg	< 6 mg/kg	HG-AAS
Cadmium (Cd)	Max. 10 mg/kg	< 0.7 mg/kg	GF-AAS
Lead (Pb)	Max. 15 mg/kg	< 3 mg/kg	GF-AAS
Mercury (Hg)	Max. 0.1 mg/kg	< 0.05 mg/kg	AFS
Dioxins (PCDD/F(BEQ))	Max. 0.75 ng/kg	< 0.2 ng/kg	DR CALUX
Dioxins + dioxin-like PCBs (PCDD/F and dl PCBs (BEQ))	Max. 1.0 ng/kg	< 0.3 ng/kg	DR CALUX

*Method of Test: Method 3.2 – EC Regulation No: 2003/2003/EC.

Classification, labelling and packaging

The product is not classified as hazardous according to EU regulations. Labelling conforms to Regulation (EC) No 767/2009 of the European Parliament and of the Council and to Commission Regulation (EU) No 242/2010. Packaging available in 1000, 1150 and 1200 kg and bulk.

Handling and storage

BOLIFOR® MAP should be stored indoors in a dry and cool place in properly sealed packaging.

When handled and stored according to instructions the shelf life is three years.

Transport and transport regulation

Transported on road, rail and by sea. Not classified as dangerous goods.

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Yara, Animal Nutrition is part of the Cefic Sector Group
 Inorganic Feed Phosphates

The information above is intended to serve as guidelines and does Not constitute a guarantee. We reserve the right to make changes. Valid from 2014-05-01.

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