



Knowledge grows

BOLIFOR® MAP

Mono-ammonium phosphate - Feed grade - Ruminants

BOLIFOR® mono-ammonium phosphate (MAP) is a unique, purified feed grade combination of phosphorus and nitrogen. BOLIFOR® MAP is produced by reacting phosphoric acid and an ammonia source in a granulator, under precise conditions. Yara's phosphorus source is apatite, of volcanic origin, which makes the phosphoric acid virtually free from impurities. The purity of the raw materials as well as Yara's integrated production process, according to GMP+ standards, ensures 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, 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 of BOLIFOR® MAP makes it a preferred source of phosphorus and nitrogen in concentrates, complete feeds, mineral supplements and other mineral feed applications for ruminants. It is a superior dietary source of phosphorus and non-protein nitrogen which are vital to optimize nutrition in ruminants.

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, aw | < 0.70 |

Special Advantages

- High relative water solubility of phosphorus
- Superior chemical solubility gives BOLIFOR® MAP an excellent biological availability for phosphorus
- Minimum level of undesirable substances
- Consistent quality



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.

Yara Animal Nutrition
www.yara.com/animal-nutrition
animal.nutrition@yara.com



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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