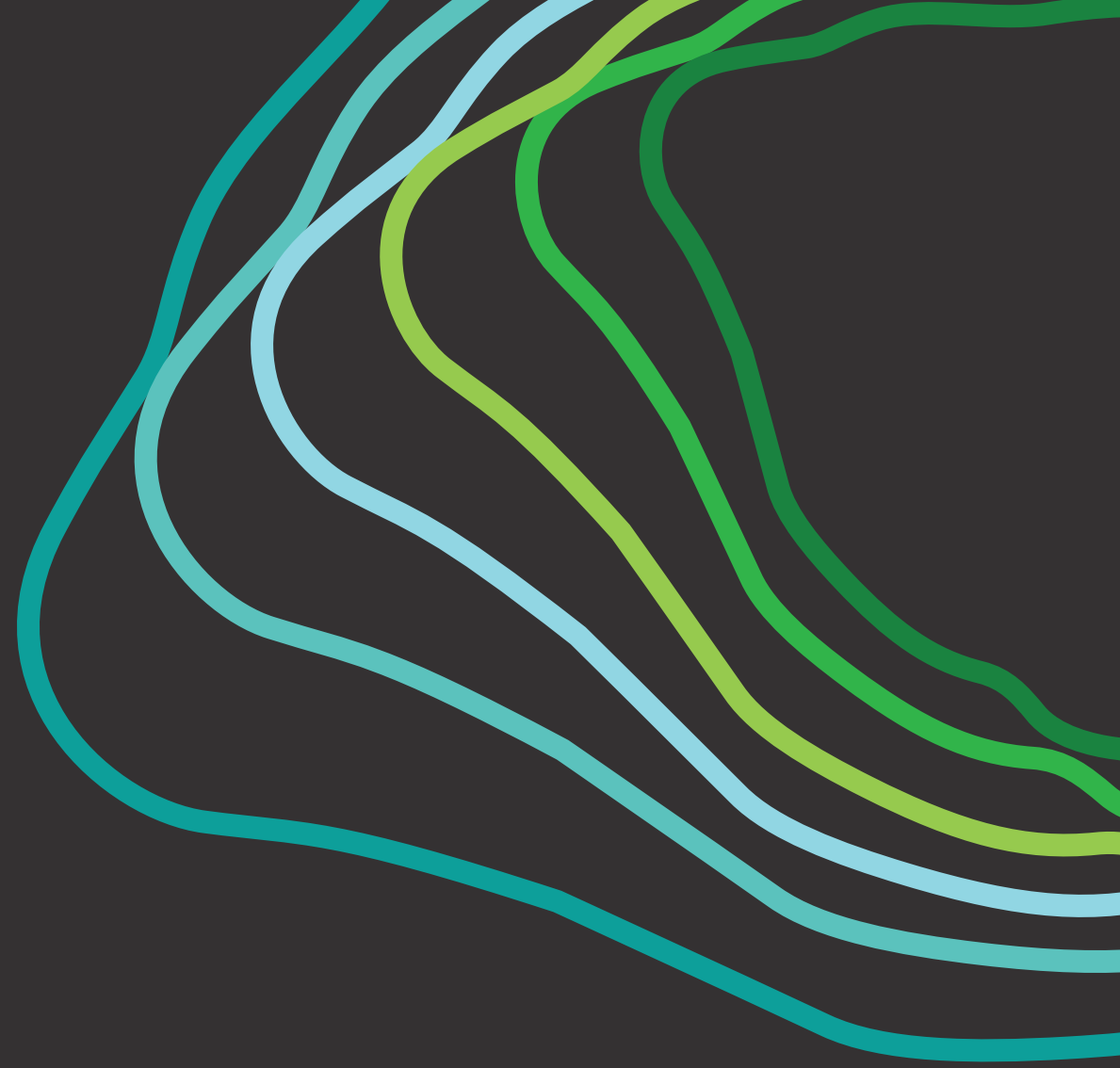




AgroMag

By Brucite⁺



Recommendations

AgroMag[®] as a source of magnesium in the production of complex fertilizers

Description and application

AgroMag® is a milled ground brucite mineral with the highest magnesium content compared to other minerals and therefore is widely used in the production of complex fertilizers like NPK.

The product not only increases the content of magnesium which is important for the plants and neutralizes the excess acidity during the production process, but also reduces the caking and porosity of fertilizers, and also significantly increases the strength of granules and does optimize the granulometric composition of fertilizers.



How does AgroMag[®] work?

AgroMag[®] is fed in the extraction phosphoric acid (EPA) and then EPA is pumped into the mixer of acids along with ammonia and sulfuric acid.

An increase in the magnesium content in the initial EPA increases the strength of the granules, reduces the caking and compensates the negative effect of fluorine compounds, which decrease the physical properties of ammonium phosphates (MAP, DAP, SAP).

Application

There are several ways to introduce AgroMag® in the process:

- Into EPA, followed by mixing with sulfuric acid before neutralization with ammonia.
- Into sulfuric acid and subsequent mixing with EPA and neutralization with ammonia.
- Into a mixture of acids before ammonization — for sulfoammophos (SAP), diammonium phosphate (DAP) and monoammonium phosphate (MAP).

It is most efficient to introduce AgroMag® through EPA.

The optimal concentration of the additive is 0.4–0.5% by mass.

The recommended consumption of AgroMag® is 4–5 kg/t of fertilizer.



The residence time of AgroMag® in EPA with a concentration of 49–52% P_2O_5 is from 25 to 40 minutes. The content of SO_4^{2-} is about 2%, fluorine — from 0.3 to 0.5%, calculated on pure fluorine.

The production process of complex fertilizers using AgroMag® product is as follows: AgroMag® enters the storage silo (Scheme 1).

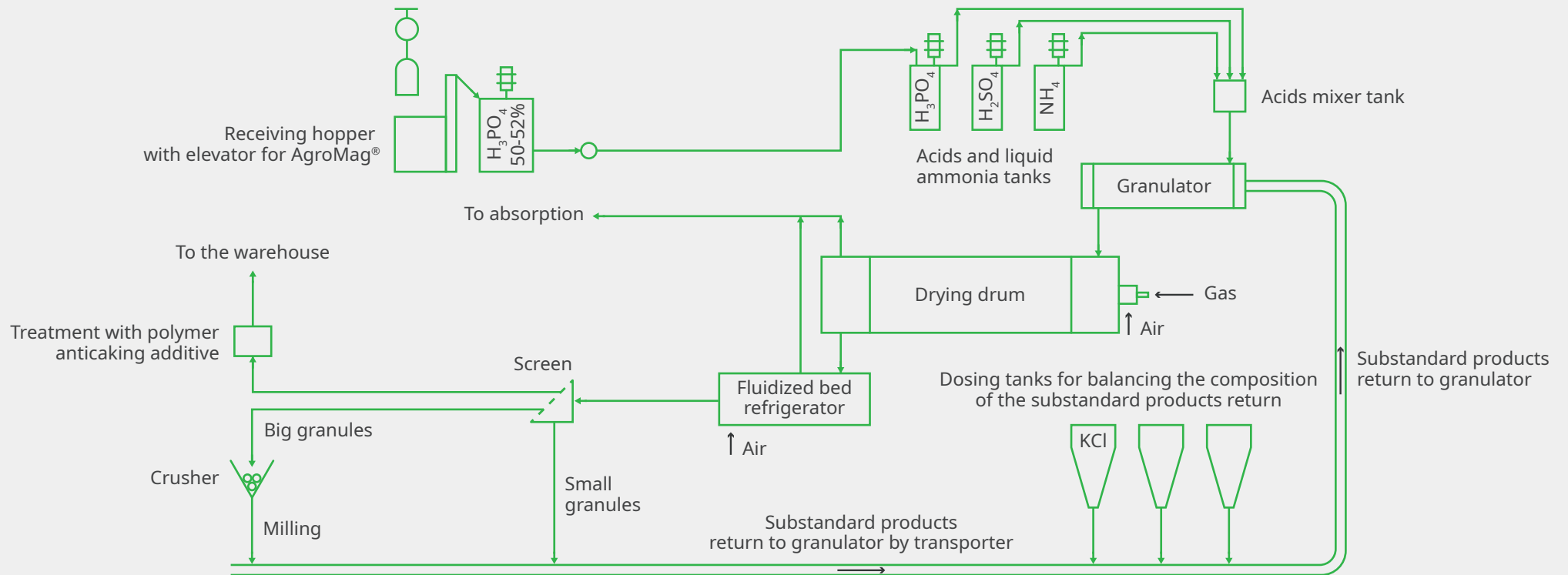
From the silo, the product is fed into the mixer tank with 42–45% EPA. Here AgroMag® is mixed with EPA and pumped into a dosing tank. From the dosing acid tank and liquid ammonia tank the contents are pumped into a mixer of acids, from where the mixture is then fed to a granulator.

Application

Application

For the entire and correct use of AgroMag® product and the intensification of the process in the reactors, intensive mixing is required. Effective mixing of AgroMag® with acids is the most important factor in the process.

Scheme 1. Manufacturing of complex fertilizers with AgroMag®



AgroMag[®] advantages

In the production of DAP:

- Increase in strength of granules by 40–60%.
- Reduced caking by 3.5–4 times.
- Decrease in porosity of granules in 2 times.

In the production of MAP:

- Decrease in the fluorine content from 7–11.6% to 2–5% and in silicon from 1–1.5% to 0.19% on the surface of MAP granules.
- Reduced caking by 3–4 times and increase in the strength of MAP granules by 1.4 times.
- Increase in the efficiency of surface treatment of fertilizer with conditioning mixtures by reducing porosity, as a result expensive conditioning additives are less absorbed into the granules

By choosing AgroMag® products you ensure best technical support for application of product and receive a possibility to develop a custom solution with individual properties.

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