

# ALIEN PROPERTY CUSTODIAN

## PROCESS FOR THE PRODUCTION OF SUBSTANTIALLY ANHYDROUS CALCIUMNITRATE

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Anhydrous calciumnitrate or calciumnitrate of poor water content has, as known, attractive properties as fertilizer. It has a high nitrogen content and can take up much moisture before deliquescing.

Nevertheless this product is only produced at industrial scale in small quantities since the preparation from its solutions gives rise to great difficulties. If namely the water content of those solutions has decreased to approximately 24% during concentrating a further evaporation in the usual apparatus is impossible due to the high viscosity of the liquid.

The invention provides a process in which these difficulties are overcome.

According to the invention at first calciumnitrate containing less than approximately 10% of water is prepared by stirring together in a mixing apparatus calciumnitrate having a higher water content than 10% and solid calciumnitrate already anhydrous or of poor water content after which the mixture is dried.

It has appeared from many experiments that if one only succeeds in decreasing the water content of a calcium-nitrate solution or melt or of solid water containing calciumnitrate to below approximately 10% in the abovementioned mixing, the further dehydration of the calciumnitrate can easily take place.

Though in this method either already during the mixing or during the subsequent drying a product is formed in which the water comes into the interior of the granules formed this product surprisingly loses this water easily during the drying process whereas the granule form remains intact.

If the limit of approximately 10% of water should be insufficiently observed and a mixture of a higher water-content should be prepared the cumbersome consequences thereof would make themselves felt during the drying following the mixing. In that case namely the mixture deliquesces in the drying apparatus to a pasty mass adhering to the walls and the devices (stirring arms, partitions, etc.) and preventing a good functioning.

If by evaporating a calciumnitrate solution a solution having a water content of e. g. 24% has been obtained it is unnecessary that this solution is solidified at first or that the solution is cooled down but this solution can be directly allowed to flow into a mixing-apparatus to which also solid already anhydrous or water-poor calciumnitrate is added.

For elucidating the invention a continuous process for the production of calciumnitrate having a water content of 1.8% is described by way of example.

A calciumnitrate solution containing 44.5% of water is evaporated till the water content amounts to 24.0%. The solution obtained having a temperature of 148° C is brought at this temperature and in a quantity of 100 kg per hour into a trough with a mixing-screw to which also 280 kg per hour of solid calciumnitrate having a water content of 1.8% are added. By the action of the mixing-screw the mixture is transformed into granules consisting of particles of solid water-poor calciumnitrate cemented by the concentrated calciumnitrate solution. These granules have a water content of 7.6%. After leaving the mixing-screw they are transported to a rotating drying-drum in which they are dehydrated by contact with hot gases of a temperature of about 230° C. The product is sieved and the fraction of 2-4 mm is removed as final product. This final product consists of hard round globules with a nitrogencontent of 16.8% and a water content of 1.8%. The fraction which is too coarse is broken and returned to the mixing-screw together with the fraction which is too fine.

Various changes may be made in the details disclosed in the foregoing specification without departing from the invention or sacrificing the advantages thereof.

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