Factory Magnesium Oxide (MgO) from Dolomite with Digestion Process

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ABSTRACT
Magnesium oxide is a raw material widely used in industry. However, production of MgO in Indonesia is very low. This is shown by the data from Surabaya Statistic Center (BPS) that the import number is greater than export and the production number. It can be concluded that Indonesia is still not able to meet the domestic needs of MgO. For fulfilling the MgO needs that continually increasing, it has been planned to building a factory that produce MgO with dolomites mineral as an abundant material available in Indonesia.

The processing of MgO from dolomite in the first process is digestion, where dolomite are dissolved in 15% HCl solution. The second process is the deposition, in which the Mg(OH)₂ is resulted then deposited using a gravimetric principle (solids separated from the aqueous suspension). The next process is screening, which precipitated of Mg(OH)₂ was filtered using a Rotary Drum Vacuum Filter to remove the water content in the sediment. And the last process is the thermal decomposition, this process is carried out at a temperature of about 330°C for 1 hour, after that is all the MgO was producted and the purity is up to 91%.

The location of MgO factorys is on Gresik, Manyar districts and the location which providing the raw materials mineral dolomite on the Madura islands. This factory is programmed to work for 300 days in every year with 24h workhour in each day. With the implementation of the plan in 2015, it will be achieving a production capacity of 130430 tons/year.

Keywords: Magnesium Oxide, Dolomite, Digestion Process