GYPSUM PLANT FROM BY-PRODUCT OF PHOSPORIC
ACID PLANT WITH GRANULATION PROCESS

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Abstract

Gypsum plant (CaSO$_4$·2H$_2$O) of phosphogypsum with granulation process has the capacity 59160 kg/day. Gypsum is used widely in the industry of building materials, plaster, cement and fertilizer. Location of the plant at Paciran, East Java is selected basis of raw materials oriented. Gypsum plant will operator continuously for 24 hour/day and 330 days/year.

At the gypsum production process firstly the phosphogypsum as raw material is purified to remove the impurities at agitator tank with the additional of water process. The solid of purified phosphogypsum is dried at 800°C in the flash dryer and then calcinated to find the hemihydrate gypsum. The hemihydrate gypsum is mixed with water process and the entrance to the granulator to produce the gypsum dihydrate as a main product.

To achieve the gypsum production capacity needs 86,568 kg/day of the phosphogypsum. The plant utilities consumption including water sanitation, water process and the boiler feed water are 13,16 m$^3$/day, 16,90 m$^3$/day and 1,76 m$^3$/day respectively.

Keywords: Gypsum, Granulation Process, Calcium sulfate