DYHIDRAT OXALIC ACID PLANT FROM ECENG GONDOK WITH FUSSION OF ALKALI PROCESS

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Abstract

Oxalic acid is a chemical used as an ingredient pale maker leather in industrial tanning, metal cleaning agents, bleaching for textile and pulp industry. Characteristic physic of it is unsmell, hygroscopis, its form crystal and the solubility (30°C) 10,217 Kg oxalic acid/100 Kg solvent. Oxalic Acid Plant is contructed by fussion of alkali process with capacity of production are 1363,63 kg/day.

Oxalic acid is a product made from Eichhornia crassipes with the following process: Preparation of oxalic acid by using of raw materials is done with the fussion of alkali process. Raw materials is fussioned by using 50% NaOH solution at a temperature of 200 °C. Of the fussion process is formed 50% of the salt form of oxalic acid like acetate salt and formic salt and then the rest as a carbonate salt. Purification of this result is washed with hot water then cooled and concentrated solution that would eventually form sodium oxalate. By reacting Ca (OH)$_2$ with sodium oxalate is obtained calcium oxalate and sodium hydroxide. Calcium oxalate formed is reacted with sulfuric acid to obtain oxalic acid and calcium sulfate.

Oxalic acid plant is planned to operate continuously for 24 hours / day and 330 operating days / year The raw material Eichhornia crassipes is needed 4547.086 kg / day. Utility demand for make up water are 479,767 m$^3$/day.

Keyword : Oxalic Acid, Eichhornia crassipes, fussion of alkali process