PRE DESIGN OF GLYCEROL MONOOLEATE PLANT FROM GLYCEROL AND OLEIC ACID WITH ESTERIFICATION PROCESS

Student Name : Ahmad Ilham Arwani. (2307 030 005) 
Budhi Waluyo. (2307 030 011)
Departement : D III Chemical Engineering, FTI – ITS
Supervisor : Ir. Elly Agustiani M.Eng.

Abstract

Establishment of the Glycerol Monooleate plant has a main reason to meet the consumption needs of surfactants, especially in domestic demand is increasing. It can be seen from the data import growth in Indonesia from year to year against Glycerol Monooleate is big enough, is an average 4% per year. Surfactant is a versatile product, which can be utilized in the detergent industry, pharmaceutical, food, and others.

Making this Glycerol Monooleate using esterification process. Phase in the manufacture of the first Glycerol Monooleate is oleic acid purification process using nanofiltration membranes I and II, the second is the process of esterification of glycerol and oleic acid reacting with the aid of Na-Y zeolite catalyst to accelerate the reaction, the third is the process of separation of the filtrate (product) and cake (Na-Y zeolite catalyst) using a filter press, and the fourth is a product of impuritiesnya separation process using nanofiltration membranes III and V.

This factory is intended to operate in the year 2014 with operating conditions during the 330 days / year and 24 hours / day. The capacity of this Glycerol Monooleate plant amounted to 2590 tons / year of raw materials with glycerol and oleic acid for 458 kg/hour.

Keyword : Glycerol Monooleate, Glycerol and Oleic acid, Esterification.