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Purification of waste carbon dioxide from ethylene glycol plants and its commercial application

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Abstract

Reduction of waste and convert them to the valuable product is the key challenge in today's competitive petrochemical business. Large amount of the carbon dioxide is treated as waste and vented to atmosphere from ethylene glycol plant. Carbon dioxide (CO2) is one of the byproducts produced during the manufacturing process of ethylene glycol. Instead, it may be used as one of the raw material in urea & methanol process, soda ash, baking powder etc. Moreover, it can be liquefy up to food grade or can be utilized for dry Ice, cold drink, beverage preparation, even as preservative etc. These studies will emphasis on opportunity to reduce carbon dioxide emission to atmosphere and utilization in ecofriendly manner by conversion into competitive petrochemical products. This paper will also describes technology in detail, how to recover & purified the waste carbon dioxide to meet the specification of commercial & food grade as a raw material. The purification of waste CO2 will provide two fold benefit. First, there will be reduction in the large CO2 venting & subsequent reduction of pollution & global warming. Secondly, availability of raw materials from waste stream, which will reducing the production cost.

Biography

M.Tech. (Chemical) from L.I.T Nagpur, India and having more than 24 years of industrial experience in Process Engineering of olefin crackers, Methyl Tertiary butyl ether (MTBE), Ethylene Glycol & Linear Alpha olefin (LAO) processes of Petrochemical and Chemical industry. Presently working with UNITED (SABIC), Al-Jubail KSA, as Staff Process Engineer.