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(54) Title: PROCESS FOR METHYL METHACRYLATE PRODUCTION

(57) Abstract: Process for producing methyl methacrylate is disclosed, the method comprising: a) producing propionaldehyde from ethylene; b) reacting the propionaldehyde with formaldehyde to produce methacrolein; and c) reacting the methacrolein in an oxidative esterification reaction to produce methyl methacrylate. Step b) is performed at a pressure above 1 bar. Step c) is a liquid phase reaction and is carried in a reactor system comprising one or more reactors and is performed in the presence of a heterogeneous noble metal-containing catalyst. An average ratio of methanol to methacrolein in the reactor system is less than 20:1 based on average amount of methanol and methacrolein entering and exiting the system. An average concentration of methacrolein in the reactor system is less than 40 wt% based on the total weight of the methanol and methacrolein in the reactor system, where the average concentration of methacrolein in the reactor system is the average of the concentration of methacrolein entering and exiting the reactor system. Oxygen is maintained in a vapor space in the reactor system in a concentration ranging from 2.5 mol% to 7.5 mol% relative to the total amount of the vapor phase.



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