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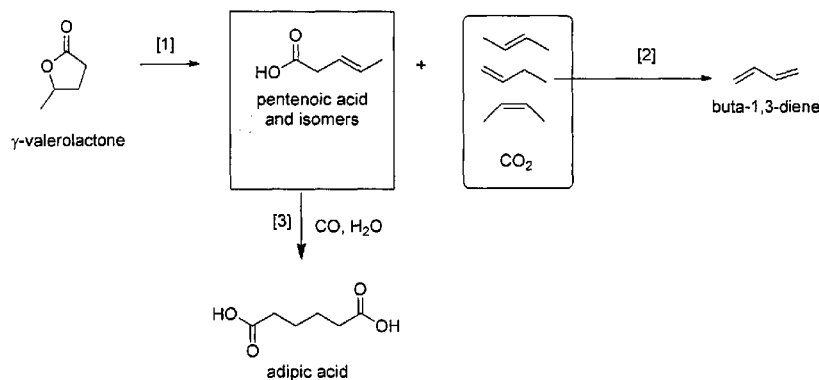


Fig. 1

(57) Abstract: The invention relates to a process for the production of a diene. In the process, a lactone is heated in the presence of a first catalyst system to produce an alkene and carbon dioxide and the alkene is contacted with a second catalyst system to produce an alkyl diene. The invention further relates to a process of converting the side-product alkenoic acid through reaction with carbon monoxide, water and a third catalyst system to a dicarboxylic acid.