Abstract

An organic compound having at least one C-C double bond is epoxidized by means of hydrogen peroxide in the presence of at least one catalytically active compound and at least one solvent, wherein a product mixture comprising α-hydroperoxyalcohols is reduced using at least one reducing agent. The process advantageously comprises at least the following steps:

(i) reacting an organic compound having at least one C-C double bond with hydrogen peroxide in the presence of at least one catalytically active compound and at least one solvent to give a product mixture P1 comprising α-hydroperoxyalcohols;

(ii) separating an epoxide formed in the reaction in step (i) and the unreacted organic compound having at least one C-C double bond from P1 or P1' to give a product mixture P2 or P2', where P2 comprises the α-hydroperoxyalcohols formed as by-product in the reaction in step (i) and P2' is largely free of α-hydroperoxyalcohols;

(iii) treating P1 and/or P2 with at least one reducing agent so that the α-hydroperoxyalcohols are converted into corresponding glycols to give a product mixture P1' or P3.



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