

Preparation of hexanediol

Abstract

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A process for preparing 1,6-hexanediol from a carboxylic acid mixture comprising adipic acid, 6-hydroxycaproic acid and small amounts of 1,4-cyclohexanediols which is obtained as by-product in the oxidation of cyclohexane to cyclohexanone/cyclohexanol

10 after water extraction of the reaction mixture followed by extraction with aqueous sodium hydroxide solution, by esterification of the acids and hydrogenation comprises

- 15 a) liberating the carboxylic acids from the alkaline extract by addition of a mineral acid,
- b) fractionating the organic phase comprising carboxylic acids to give a distillate comprising the low molecular weight monocarboxylic acids and a residue comprising adipic acid and 20 6-hydroxycaproic acid,
- c) reacting the monocarboxylic and dicarboxylic acids present in the aqueous dicarboxylic acid mixture with a low molecular weight alcohol to give the corresponding carboxylic esters, 25
- d) freeing the esterification mixture obtained of excess alcohol and low boilers in a first distillation step,
- e) fractionating the bottom product in a second distillation 30 step to give an ester fraction essentially free of 1,4-cyclohexanediols and a fraction comprising at least the major part of the 1,4-cyclohexanediols,
- f) catalytically hydrogenating the ester fraction which is 35 essentially free of 1,4-cyclohexanediols and
- g) isolating 1,6-hexanediol from the hydrogenation product in a manner known per se in a final distillation step.

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