

ABSTRACT

PROCESS FOR THE PRODUCTION OF 1,4-CYCLOHEXANEDIMETHANOL

A continuous process is described for the production of 1,4-cyclohexanedimethanol having a desired or predetermined trans:-cis- isomer ratio by catalytic hydrogenation of a dialkyl 1,4-cyclohexanedicarboxylate in the presence of an ester hydrogenation catalyst, which process is capable of being operated for an extended period of time during which the hydrogenation catalyst declines in catalytic activity, said process comprising:

- (a) providing a hydrogenation zone containing a charge of a granular hydrogenation catalyst capable of catalysing the hydrogenation of esters;
- (b) determining a Reference Activity (RA) of the granular hydrogenation catalyst by measuring the extent of conversion of the dialkyl 1,4-cyclohexanedicarboxylate to 1,4-cyclohexanedimethanol in passage of a reaction mixture comprising the dialkyl 1,4-cyclohexanedicarboxylate and a hydrogen-containing gas through the granular hydrogenation catalyst at a preselected feed temperature, feed pressure, dialkyl 1,4-cyclohexanedicarboxylate feed rate, and hydrogen-containing gas:dialkyl 1,4-cyclohexanedicarboxylate molar ratio;
- (c) determining an Effective Residence Time (ERT) for contact of the reaction mixture at the preselected feed temperature and feed pressure with the granular hydrogenation catalyst at the reference activity thereof which produces 1,4-cyclohexanedimethanol having the desired trans:-cis- isomer ratio;