Process for preparing neopentyl glycol

Abstract

The present invention relates to a process for preparing neopentyl glycol (NPG) by continuously hydrogenating hydroxypivalaldehyde (HPA) with hydrogen, in the liquid phase, in the presence of a hydrogenation catalyst, in a hydrogenation reactor (5), by combining an HPA-comprising stream (1) with an NPG-comprising stream (2) to give a hydrogenation feed (4) and introducing the hydrogenation feed (4) into the hydrogenation reactor (5) and additionally supplying at least one pH regulator (3) selected from the group consisting of tertiary amine, an inorganic base, an inorganic acid and an organic acid to the HPA-comprising stream (1) or the NPG-comprising stream (2) or the hydrogenation feed (4), in order to establish a pH of 7.0 to 9.0 at the outlet of the hydrogenation reactor, wherein the weight ratio of HPA to NPG in the hydrogenation feed (4) is in the range from 1:100 to 50:100 and the proportion of HPA and NPG in the hydrogenation feed (4) is at least 50% by weight, based on the hydrogenation feed, and, in the case that the pH regulator (3) is supplied to the HPA-comprising stream (1), the HPA-comprising stream (1) comprises less than 50% by weight of HPA or the residence time between the supply of the pH regulator (3) and the combining of the NPG-comprising stream (2) with the HPA-comprising stream (1) is less than 5 minutes or the temperature of the HPA-comprising stream (1) is less than 75°C.

Figure 1