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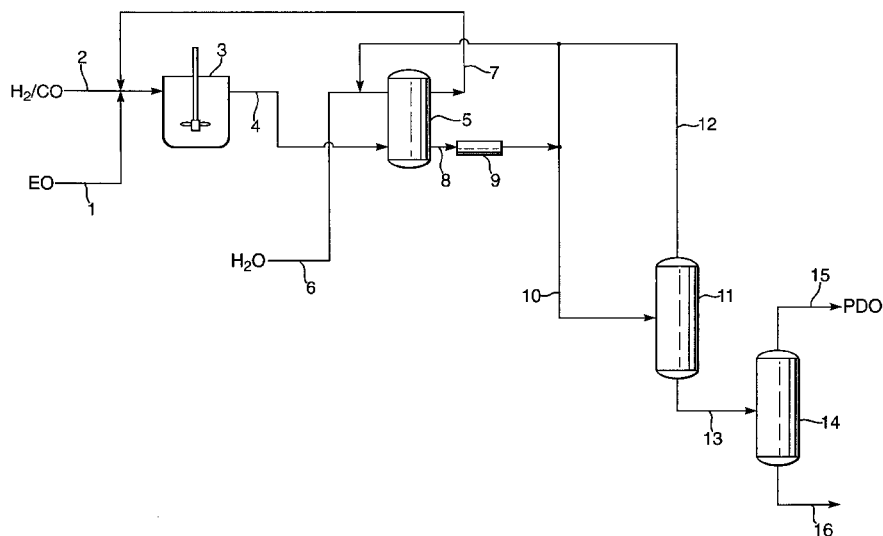
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(54) Title: SYNTHESIS OF ALIPHATIC 1,3-DIOLS UTILIZING REDUCED LIGAND CONCENTRATION AND WATER EXTRACTION



(57) Abstract: A process for synthesizing aliphatic 1,3-diols in one step by hydroformylation and hydrogenation of oxirane, carbon monoxide, and hydrogen employing a catalyst comprising a cobalt carbonyl compound and a cocatalyst metal compound ligated with a ligand in a ligand to cocatalyst metal atom molar ratio in the range of 0.2:1.0 to 0.6:1.0, optionally in the presence of a promoter, where recovery of product is preferably accomplished via water extraction of a diol rich phase from the bulk reaction mixture. The process modifications can, particularly in combination, be beneficial with respect to product recovery, catalyst recycle, and overall economics of a one-step process for producing aliphatic 1,3-diols.



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