

ABSTRACT**PROCESS FOR THE SIMULTANEOUS PRODUCTION OF MALEIC ANHYDRIDE AND ITS HYDROGENATED DERIVATIVES**

A process is described for the co-production of maleic anhydride and at least one C₄ compound selected from butane-1,4-diol, γ -butyrolactone, and tetrahydrofuran in which maleic anhydride is produced by partial oxidation of a C₄ hydrocarbon feedstock to yield a vaporous reaction effluent stream comprising maleic anhydride, water, unconverted hydrocarbon feedstock, and carbon oxides. A part of the maleic anhydride present in the vaporous reaction effluent stream is condensed to form a crude maleic anhydride stream and leave a residual vaporous stream containing residual amounts of maleic anhydride. Further maleic anhydride is absorbed from the residual vaporous stream by absorption in an organic solvent, water or an aqueous solution. Maleic anhydride is then recovered from the loaded liquid absorption medium. Said at least one C₄ compound is produced by hydrogenation of a C₄₊ hydrogenation feedstock selected from maleic anhydride, maleic acid, dialkyl maleates, and mixtures of two or more thereof. The process is characterised in that the vaporous reaction effluent stream is cooled prior to step (iii), that a guard bed of a phosphorus-absorbing material is placed in the path of the cooled vaporous reaction effluent stream prior to step (iii) thereby to remove phosphorus-containing materials therefrom, and that material of the crude maleic anhydride stream of step (iii) is used as the C₄₊ hydrogenation feedstock of step (viii) or is used to prepare the C₄₊ hydrogenation feedstock of step (viii).

30 Fig. 1

