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(54) Title: INTEGRATED HYDRO-OXIDATION PROCESS WITH SEPARATION OF AN OLEFIN OXIDE PRODUCT STREAM

(57) Abstract: An integrated process providing for a gas phase hydro-oxidation of an olefin, preferably, propylene, with oxygen in the presence of hydrogen and a catalyst under reaction conditions such as to form a gaseous hydro-oxidation effluent stream containing an olefin oxide product, preferably, propylene oxide, water, unconverted olefin, oxygen, and hydrogen; and further providing for separation and recovery of the olefin oxide product from the effluent stream. The separation involves feeding the hydro-oxidation effluent stream into a first distillation column employing a liquid reflux rectification agent to obtain a first overhead stream containing unconverted olefin, oxygen, and hydrogen, which is recycled to the hydro-oxidation reactor, and a first bottoms stream containing water and the olefin oxide, from which upon further separation a purified olefin oxide product is recovered.



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