

ABSTRACT

LIQUID PHASE OXIDATION OF AROMATIC FEEDSTOCKS WITH MANGANATE RECYCLING TO PRODUCE CARBOXYLIC ACIDS

Systems and methods for liquid-phase oxidation of an aromatic feedstock containing at least one oxidizable aromatic compound may incorporate an oxidation reactor, a separation apparatus in fluidic communication with the oxidation reactor, a solids treatment unit, and a product recovery unit in fluidic communication with the separation apparatus. The oxidation reactor may conduct liquid-phase oxidation of the oxidizable aromatic compound in the aromatic feedstock in the presence of a manganate salt to form a slurry containing liquid product and solid manganese dioxide. The separation apparatus may accept the slurry from the oxidation reactor and separate the liquid component from the solid component. The solids treatment unit accepts the solid component from the separation apparatus, treats the solid component with a basic liquid to oxidize the manganese dioxide in the solid component and form a regenerated manganate salt, which may be recycled back to the oxidation reactor.

FIG. 1