

Abstract

The invention provides a method for producing terephthalic acid, characterized by including subjecting a p-phenylene compound to liquid-phase oxidation reaction by use of a molecular-oxygen-containing gas in the presence of a catalyst at least containing a heavy metal compound and a bromine compound, and hydrous acetic acid having a water content of 1 to 15 mass%, to thereby yield a slurry; regulating the temperature of the slurry to 35 to 140°C, to thereby cause terephthalic acid to precipitate; removing the terephthalic acid through solid-liquid separation, to thereby recover a mother liquor; and recovering the catalyst from the mother liquor through a series of the following steps (1) to (4) for reusing at least a portion of the catalyst in the liquid-phase oxidation reaction: (1) an adsorption step including regulating the ratio "amount by mole of bromide ions in the mother liquor/total amount by mole of heavy metal ions in the mother liquor" to 0.6 to 3, and then exposing the mother liquor to a pyridine-ring-containing chelate resin which has been heated to 35 to 140°C, so that the resin adsorbs catalyst-derived heavy metal ions and bromide ions, and also adsorbs a carboxylic acid mixture which has been by-produced through the liquid-phase oxidation reaction, (2) an elution step (A) of exposing hydrous acetic acid having a water content of 1 to 15 mass% to the pyridine-ring-containing chelate resin which has undergone the adsorption step, thereby yielding an eluate containing the by-produced

carboxylic acid mixture, (3) an elution step (B) of exposing water or hydrous acetic acid having a water content of 20 mass% or more to the pyridine-ring-containing chelate resin which has undergone the elution step (A), thereby yielding an eluate containing catalyst-derived heavy metal ions and bromide ions, and (4) a displacement step of exposing hydrous acetic acid having a water content of 1 to 15 mass% to the pyridine-ring-containing chelate resin which has undergone the elution step (B), serving as a displacement liquid, thereby regenerating the resin.