

Abstract

A process for continuously preparing the tert-butyl ester of an ethylenically unsaturated carboxylic acid, by a) reacting an ethylenically unsaturated carboxylic acid with isobutene in the presence of an acidic catalyst to give an esterification mixture; b) removing the acidic catalyst; c) removing low-boiling components; and d) supplying a tert-butyl ester-comprising liquid to a distillation apparatus and subjecting it to purifying distillation in the distillation apparatus, where d1) in the distillation apparatus the tert-butyl ester-comprising liquid is separated into a tert-butyl ester-comprising gaseous top product and a carboxylic acid-comprising liquid bottom product; d2) the tert-butyl ester-comprising gaseous top product is at least partly condensed and the condensate is recycled partly as reflux to the distillation apparatus; d3) the carboxylic acid-comprising liquid bottom product is recycled at least partly to step a); d4) carboxylic acid-comprising liquid bottom product is drawn off and passed to a heater; a superheated, liquid recycle stream is taken from the heater; and the superheated recycle stream is let down into the distillation apparatus; and d5) at least in the top region of the distillation apparatus, the distillation apparatus walls in contact with the vapor, at least in subregions, are heated and/or thermally insulated. In the course of the process, the separation of the tert-butyl ester from unreacted carboxylic acid is carried on with a particularly low level of accompanying polymerization both of the tert-butyl ester and of the carboxylic acid.