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(54) Title: PROCESS FOR PREPARATION OF METHACRYLIC ACID AND METHACRYLIC ACID ESTER

(57) Abstract: The invention relates to a process for preparation of at least one of methacrylic acid and a methacrylic acid ester, and a process for treatment of an aqueous phase comprising at least one organic compound comprising process steps: a1) gas phase oxidation of at least one C 4 compound to obtain a reaction phase comprising methacrylic acid; a2) quenching of the reaction phase to obtain a crude aqueous phase comprising methacrylic acid; a3) extraction of at least a part of the methacrylic acid from the crude aqueous phase comprising methacrylic acid into an organic solvent to obtain a crude organic phase comprising methacrylic acid and a first aqueous phase, wherein the first aqueous phase comprises components i. at least 65 wt.%, preferably in the range of from 65 wt.% to 99.9 wt.%, more preferably in the range of from 70 wt.% to 99.8 wt.% water, yet more preferably in the range of from 75 wt.% to 99 wt.%, more preferably in the range of from 76 wt.% to 98.5 wt.%, more preferably in the range of from 77 wt.% to 98 wt.%, even more preferably in the range of from 78 wt.% to 97.5 wt.%, even more preferably in the range of from 79 wt.% to 95 wt.%, yet more preferably in the range of from 80 wt.% to 90 wt.% water, based on the total weight of the first aqueous phase, and ii. not more than 35 wt.%, preferably in the range of from 0.1 wt.% to 35 wt.%, preferably in the range of from 0.2 wt.% to 30 wt.%, more preferably in the range of from 1 wt.% to 25 wt.%, yet more preferably in the range of from 1.5 wt.% to 24 wt.%, more preferably in the range of from 2 wt.% to 23 wt.%, even more preferably in the range of from 2.5 wt.% to 22 wt.%, even more preferably in the range of from 5 wt.% to 21 wt.%, yet more preferably in the range of from 10 wt.% to 20 wt.% of at least one organic compound other than the organic solvent used as extraction agent, based on the total weight of the first aqueous phase, wherein the sum of the weight amounts of i. and ii. is 100 wt.%; 200700659 4 a4) separation and optionally purification of at least a part of the methacrylic acid from the crude organic phase comprising methacrylic acid; a5) optionally, esterification of at least a part of the methacrylic acid obtained in step a4); b) crystallisation of at least a part of the water from at least a part of the first aqueous phase obtained in process step a3) to form a crystallised aqueous phase as second aqueous phase and a mother liquor, wherein the mother liquor comprises at least one component ii.; c) at least partial separation of the crystallised aqueous phase from the mother liquor.

WO 2013/037131 A1