

Integrated method for producing acrolein and 3-methylmercaptopropionaldehyde

Abstract

Process for preparing MMP from acrolein and methyl mercaptan, in which the following steps are performed successively:

- 5 A) gas phase oxidation of propylene with the aid of air over a heterogeneous catalyst in the presence of a diluent gas
- B) collecting the acrolein-containing gas stream from A) in a quench stage for removal of by-products
- 10 C) recovering the residual acrolein fractions from the liquid present in the lower part of the quench stage B) by stripping
- D) collecting a first portion of the acrolein-containing gas stream from the quench stage B) in an absorption stage in the presence of water to obtain an aqueous acrolein solution
- 15 D1) at least partly recycling the uncondensable gas from D) as diluent gas into reaction stage A)
- E) distillatively removing the acrolein from the aqueous acrolein solution from D) in a distillation stage
- E1) condensing the acrolein-containing distillate from E) and supplying the distillate to a reaction stage
- 20 F) and feeding a further portion of the acrolein-containing gas stream from the quench stage B) directly into the reaction stage F) for reaction with methyl mercaptan in the presence of MMP and/or MMP/MC hemithioacetal.
- 25 (No suitable figure)