Claims

1. Process for preparing methylmercaptopropionaldehyde from gaseous acrolein and methyl mercaptan, characterized in that, in one process step, simultaneously,

   (a) gaseous acrolein is absorbed from a mixture at least comprising one compound from the group consisting of the hemithioacetal of methylmercaptopropionaldehyde, methylmercaptopropionaldehyde and methyl mercaptan,

   (b) in this mixture, acrolein is reacted with methyl mercaptan and/or the hemithioacetal of methylmercaptopropionaldehyde in a liquid phase to give methylmercaptopropionaldehyde and

   (c) impurities and by-products are removed from this mixture~~,~~.

~~2. Process according to Claim 1, characterized in that the process step is performed in a reactive absorber.~~ wherein the process step is performed in a reactive absorber.

2. Process according to ~~at least one of~~ Claim~~s~~ 1 ~~and 2~~, characterized in that the mixture comprises the hemithioacetal of methylmercaptopropionaldehyde, formed by addition of methyl mercaptan onto methylmercaptopropionaldehyde in a concentration between 0.1 and 10% by weight~~, preferably between 1 and 10% by weight~~.

3. Process according to claim 2 characterized in that the mixture comprises the hemithioacetal of methylmercaptopropionaldehyde in a concentration between 1 and 10% by weight.

4. Process according to at least one of Claims 1 to 3, characterized in that the impurities and by-products are removed from the mixture by stripping at 0.3 to 5 bara, preferably at 1 to 2 bara, and at 5 to 70°C, preferably at 5 to 20°C.

5. Process according to at least one of Claims 1 to 4, characterized in that the impurities removed comprise at least one compound from the group consisting of dimethyl sulphide, acetaldehyde, water, dimethyl disulphide, methanol, carbon dioxide, propane, propene, hydrogen sulphide and dimethyl ether.

6. Process according to at least one of Claims 1 to 5, characterized in that methyl mercaptan is supplied to the mixture continuously in liquid and/or gaseous form.