

Method for producing formic acid by reacting carbon dioxide with hydrogen

Abstract

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The present invention relates to a process for preparing formic acid by reacting carbon dioxide (1) with hydrogen (2) in a hydrogenation reactor (I) in the presence of

- a catalyst comprising an element of group 8, 9 or 10 of the Periodic Table,
- 10 - a tertiary amine comprising at least 12 carbon atoms per molecule and
- a polar solvent comprising one or more monoalcohols selected from among methanol, ethanol, propanols and butanols,

15 to form formic acid/amine adducts as intermediates which are subsequently thermally dissociated,

where a tertiary amine having a boiling point which is at least 5°C higher than that of formic acid is used and

a reaction mixture comprising the polar solvent, the formic acid/amine adducts, the tertiary amine and the catalyst is formed in the reaction in the hydrogenation reactor (I)
20 and is discharged from the reactor as output (3).

(Figure 1)