

CLAIMS:

1. A method for preparing methyl methacrylate from methacrolein and methanol; said method comprising contacting a mixture comprising methacrolein, methanol and oxygen with a heterogeneous catalyst comprising a support and a noble metal, wherein said support comprises silicon, and wherein said catalyst comprises from 0.1 to 40 mol% titanium and from 0.1 to 10 mol% of at least one noble metal, wherein mole percentages are based on total moles of silicon atoms and metal atoms.
2. The method of claim 1 in which the noble metal is selected from the group consisting of gold, palladium and combinations thereof.
3. The method of claim 2 in which the catalyst has an average diameter from 60 microns to 10 mm.
4. The method of claim 3 in which the catalyst comprises 0.1 to 8 mol% of at least one noble metal, 60 to 95 mol% silicon, 0.1 to 20 mol% titanium and 0.1 to 20 mol% alkali metal or alkaline earth metal.
5. The method of claim 4 in which at least 90 wt% of the noble metal is in the outer 60% of catalyst volume.
6. The method of claim 5 in which the support is silica.
7. The method of claim 6 in which the noble metal is gold.
8. The method of claim 7 in which the catalyst is contained in a catalyst bed.
9. The method of claim 8 in which methanol and methacrolein are fed to a reactor containing the catalyst bed in a molar ratio from 1:1 to 10:1, respectively.
10. The method of claim 9 in which the reactor is a tubular continuous reactor.