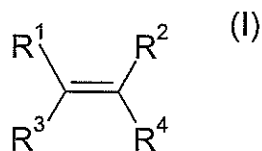
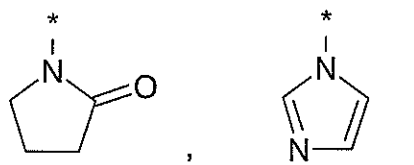


Abstract

Process for preparing polymers by controlled free-radical polymerization, wherein the polymerization of one or more free-radically polymerizable monomers of the general formula (I)



where R^1 , R^2 , R^3 are each H, C_1 - C_4 -alkyl, R^4 is $\text{C}(=\text{O})\text{OR}^5$, $\text{C}(=\text{O})\text{NHR}^{15}$, $\text{C}(=\text{O})\text{NR}^5\text{R}^6$, $\text{OC}(=\text{O})\text{CH}_3$, $\text{C}(=\text{O})\text{OH}$, CN , aryl, hetaryl, $\text{C}(=\text{O})\text{OR}^5\text{OH}$, $\text{C}(=\text{O})\text{OR}^5\text{Si}(\text{OR}^5)_3$, halogen, $\text{NHC}(\text{O})\text{H}$, $\text{P}(=\text{O})(\text{OR}^7)_2$,



R^5 is C_1 - C_{20} -alkyl, R^{15} is C_1 - C_{20} -alkyl, R^6 is C_1 - C_{20} -alkyl, R^7 is H, C_1 - C_{20} -alkyl, in the presence of
 a. one or more catalysts comprising Cu in the form of $\text{Cu}(0)$, $\text{Cu}(\text{I})$, $\text{Cu}(\text{II})$ or mixtures thereof, b.
 one or more initiators selected from the group consisting of organic halides or pseudohalides, c.
 one or more ligands, d. optionally one or more solvents, e. optionally one or more inorganic
 halide salts, and comprises the steps i) addition of the catalyst a., ii) optionally addition of
 monomers of the general formula (I), iii) optionally addition of solvent d., iv) addition of ligand c.,
 v) addition of initiator b., vi) addition of monomers of the general formula (I), vii) optionally
 addition of inorganic halide salts e., with the proviso that the addition of at least part of the
 monomers of the general formula (I) is carried out immediately before or shortly after the last of
 the steps i), iv) and v).