

Synthesis and evaluation of thermo-stable organic solderability preservatives for mobile electronics

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The OSPs based on 4-vinylpyridine compound is suitable for all general solderability purposes and is used particularly with lead-free solders due to very high melting temperatures of these lead free solders. Poly(4-vinyl pyridine)(PVP) and its copolymers, poly(4-vinyl pyridine-co-methyl methacrylate)(PVP-MMA) and poly(4-vinyl pyridine-co-ethyl 2-cyanoacrylate)(PVP-ECA), were synthesized and evaluated for application to organic solderability preservatives. Various kinds of polymers with different chemical composition were synthesized by changing feed ratio of monomer. The molecular weight of copolymers was controlled by adding 2-mercapthoethanol as chain transfer agent during copolymerization process. The copolymer composition could be determined by ¹H-NMR spectrum or titration method.