

ABSTRACT

BLENDED FLUOROPOLYMER COMPOSITIONS

Blended fluoropolymer compositions are provided. In one embodiment, a liquid dispersion of a first fluoropolymer is blended with a liquid dispersion of a second fluoropolymer. The first fluoropolymer may be polytetrafluoroethylene (PTFE), such as a low molecular weight PTFE (LPTFE) that has been polymerized via a dispersion or emulsion polymerization process, and which has not been agglomerated, irradiated, or thermally degraded. The LPTFE may be in the form of an aqueous dispersion, having a mean particle size of less than 1.0 microns (μm), with the LPTFE having a first melt temperature (T_m) of 332° C or less. The second fluoropolymer may be a melt processible fluoropolymer (MPF), such as perfluoromethylvinyl ether (MFA), fluorinated ethylene propylene (FEP), or perfluoropropylvinyl ether (PFA), for example, in the form of an aqueous dispersion, and having a mean particle size of less than 1.0 microns (μm). Blending of the dispersions facilitates interaction of the LPTFE and MPF on a submicron level to facilitate intimate blending such that, when the blended fluoropolymer composition is dried, a crystal structure representing a true alloy of the fluoropolymers is formed, having melt characteristics that differ from those of the individual fluoropolymers. The blended fluoropolymer composition may be used to provide a coating having improved impermeability, stain resistance, abrasion resistance, smoothness, and higher contact angles.

No Suitable Figure