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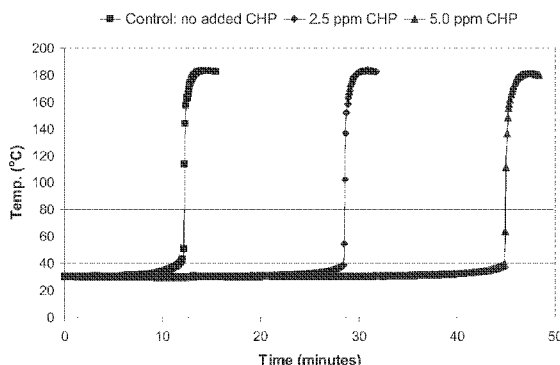
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(54) Title: ADHESION PROMOTERS AND GEL-MODIFIERS FOR OLEFIN METATHESIS COMPOSITIONS

FIG. 1 Effect of Cetyl Hydroperoxide (CHP) on Exotherm Time



(57) Abstract: This invention relates to compositions and methods for improving the adhesion of resin compositions to substrate materials, pre-treating substrate materials to improve the adhesion of resin compositions to the substrate materials, and/or controlling gel formation of resin compositions. More particularly, the invention relates to compositions and methods for improving the adhesion of ring opening metathesis polymerization (ROMP) compositions to substrate materials using adhesion promoters containing isocyanate groups in a resin composition. The invention also relates to methods for improving the adhesion of resin compositions to substrate materials by pre-treating substrate materials with adhesion promoters containing isocyanate groups. The invention further relates to a method of providing a gel-modified ROMP composition, in which a hydroperoxide is added to a ROMP polymerizable resin composition in order to control gel formation of the polymerizing resin. An improved ROMP composition is further disclosed, comprising a cyclic olefin, a ROMP metathesis catalyst, an adhesion promoter, and an added hydroperoxide gel modifier. The polymer products produced via ROMP reactions of the invention may be utilized for a wide range of materials and composite applications. The invention has utility in the fields of catalysis, organic synthesis, and polymer and materials chemistry and manufacture.





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