METHOD FOR PRODUCING A POLYMERIC COMPOSITION THUS PRODUCED AS WELL AS APPLICATIONS THEREOF, ESPECIALLY AS OR INPRESSURE-SENSITIVE ADHESIVE

The invention refers to the technical field of polymeric compositions, especially polymeric compositions to be used in or as adhesives

TYPE OF DEVELOPMENT

Watter-based creating method.

DESCRIPTION

The 21st century's challenge is to reduce human residue production, which can be achieved through recycling paper, plastic, and glass. However, removing labels and stickers from glass bottles is a major challenge due to the adhesives that cannot be removed during washing steps. Current methods involve exposure to hot heat, jetted hot gas, sprayed hot liquid, or amidine solvents like 1,8-diazobicyclo[5.4.0]undec-7-ene (or DBU) or fatty N,N-dialkylamides. These methods are either energy-intensive or require toxic solvents. The invention aims to achieve degradability of waterborne polymeric adhesive dispersions by introducing ester groups into polymer particles using oligoester crosslinkers, resulting in waterborne particles with degradable crosslinking.

INDICATION

The waterborne degradable PSAs synthesized in this work can be use for attaching labels to glass bottles, one example being wine bottles as potential candidates. The degradable PSA will enable an easy removal during the recycling procedure of the bottles.

NOVELTY/ADVANTAGE

The study demonstrates the degradability of waterborne particles obtained through homopolymerization of macromonomers, with particles completely degrading within 6-9 months. However, the degradation of polymer sidechains did not affect PSA properties. The invention uses one pot ROP for crosslinkers and seeded semibatch emulsion polymerization to synthesize waterborne PSAs with high solids content and molar masses, demonstrating good adhesive properties and fast degradability.

Reference: Degradable Waterbone PSA

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COOPERATION GOAL

License agreement.