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(54) **Title:** THERMOPLASTIC ELASTOMERS VIA REVERSIBLE ADDITION-FRAGMENTATION CHAIN TRANSFER POLYMERIZATION OF TRIGLYCERIDES

(57) **Abstract:** The present invention relates to a thermoplastic block copolymer comprising at least one PA block and at least one PB block. The PA block represents a polymer block comprising one or more units of monomer A, and the PB block represents a polymer block comprising one or more units of monomer B. Monomer A is a vinyl, acrylic, diolefin, nitrile, dinitrile, acrylonitrile monomer, a monomer with reactive functionality, or a crosslinking monomer. Monomer B is a radically polymerizable triglyceride or mixtures thereof, typically in the form of a plant or animal oil. The present invention also relates to a method of preparing a thermoplastic block copolymer or novel thermoplastic statistical copolymers by polymerizing a radically polymerizable monomer with a radically polymerizable triglyceride or mixtures thereof via reversible addition-fragmentation chain-transfer polymerization (RAFT), in the presence of an free radical initiator and a chain transfer agent.

