

**Title: Copolyester Composition.**

**Background:** This invention relates to polyester compositions. In one aspect, the invention relates to cyclobutanediol copolyesters having superior impact resistance and transparency.

**Invention Description:** According to the invention, an amorphous copolyester is prepared by contacting, under polymerization conditions an aromatic dicarboxylic acid or ester or anhydride thereof, a 2,2,4,4-tetraalkyl-1,3-cyclobutanediol and 1,3-propanediol or 1,4-butanediol. The resulting copolyester exhibits superior thermal and impact properties.

**Benefits:**

A benefit of the cyclobutanediol copolyesters containing 1,3-propanediol or 1,4-butanediol monomers is relatively low color, as compared with ethylene glycol-containing cyclobutanediol copolyesters, which tend to test high on the yellowness index (ASTM D-1925) as measured on 1/8" disks (see Table 2 of Example 3). The invention copolymers preferably exhibit yellowness indexes less than about 50, most preferably less than about 20. The preferred copolyesters have high molecular weights, most preferably reflected in an intrinsic viscosity (IV) (in hexafluoroisopropanol at room temperature) of at least about 0.5 preferably about 0.6 to about 1.0. Preferred copolyesters have notched izod impacts (1/8" thickness) of greater than about 2, most preferably greater than about 3 ft-lb/in, and glass transition temperatures greater than about 80.degree. C., most preferably greater than about 100.degree. C.

The copolyesters of the invention can be used in applications in which clarity, low shrinkage during molding, weatherability and toughness are desired in the preparation of molded articles such as lenses, glazing, packaging and compact disks. The invention copolyesters can also be blended with other polymers such as ABS, polycarbonates, poly(ethylene terephthalate) and poly(trimethylene terephthalate).

**Market Potential/Applications:**

**IP Status:** U.S. Patent donated to Texas State by Shell Oil Co. **5,705,575 (January 6, 1998)**

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