CLAIMS

What is claimed is:

1. A package for orienting and cooling a polyester during a polyester sterilization process, the package comprising:

a plurality of packets each containing polyester granules; and

a housing defining a receptacle for receiving the plurality of packets and further defining a top region disposed above the receptacle, a bottom region disposed below the receptacle generally opposite the top region, and a plurality of sides disposed around the receptacle between the top region and the bottom region, the housing including

at least one divider disposed between adjacent packets for separating the packets, and

a compartment disposed in at least one of the plurality of sides, the compartment receiving a coolant, wherein the coolant is not disposed directly above the receptacle and is not disposed directly below the receptacle such that the receptacle can be irradiated from top to bottom or bottom to top without radiation passing through the coolant.

2. The package of claim 1, wherein the housing further includes a plurality of vents in fluid communication with the compartment for venting the coolant.

3. The package of claim 1, wherein the packets are substantially free of oxygen.

4. The package of claim 1, wherein the at least one divider includes a plurality of generally planar dividers arranged in parallel, one packet being disposed between adjacent dividers.

5. The package of claim 4, wherein the dividers and the packets are arranged face-to-face in a row extending in a direction from one of the plurality of sides to another of the plurality of sides.

6. A method of sterilizing a polyester, the method comprising:

- irradiating a polyester having a glass transition temperature (T_g) with an electron beam, wherein the polyester is maintained at a temperature below its T_g by a coolant, wherein the electron beam does not pass though the coolant, and

wherein the method further comprises adding the polyester to a package prior to irradiating, the package comprising:

a housing defining a receptacle for receiving a plurality of packets comprising the polyester and further defining a top region disposed above the receptacle, a bottom region disposed below the receptacle generally opposite the top region, and a plurality of sides disposed around the receptacle between the top region and the bottom region, the housing including

at least one divider disposed between adjacent packets for separating the packets, and

a compartment disposed in at least one of the plurality of sides, the compartment receiving the coolant, wherein the coolant is not disposed directly above the receptacle and is not disposed directly below the receptacle such that the receptacle can be irradiated from top to bottom or bottom to top without radiation passing through the coolant.

7. The method of claim 6, wherein the polyester is selected from the group consisting of polylactic acid, polyglycolic acid, polycaprolactone, copolymers of polylactic acid, polyglycolic acid and/or polycaprolactone, copolymers of poly(lactic-co-glycolic acid) (PLGA) and polyethylene glycol (PEG), copolymers of PLGA and poly(dioxanone), copolymers of PLGA and poly(trimethylene carbonate) and combinations thereof.

8. The method of claim 6 or 7, wherein the coolant is dry ice, gel ice packs, ice blankets, or combinations thereof.

9. The method of any of claims 6-8, wherein the polyester is irradiated at about 10 kGy to about 300 kGy.

10. The method of any of claims 6-9, wherein the polyester is in the form of granules powder, pellets, bulk or combinations thereof.

11. The method of any of claims 6-10, wherein the polyester is packaged in a packet substantially free of oxygen.

12. The method of claim 11, wherein the packet is vacuum sealed or vacuum sealed and then purged with nitrogen.

13. The method of claim 11 or 12, wherein the packet comprises an inner pouch and an outer pouch.

14. The method of claim 13, wherein the inner pouch comprises polyethylene, nylon or a combination thereof, and the outer pouch comprises foil.