

A B S T R A C TSOLID STATE POLYMERIZATION PROCESS
FOR FOAMED POLY(ETHYLENE NAPHTHALATE)

This invention includes a process for preparing a solid state polymerized poly(ethylene naphthalate) (PEN) polymer or copolymer thereof comprising: (1) preparing a molten prepolymer with an intrinsic
5 viscosity of from 0.25 dl/g to 0.50 dl/g, (2) dispersing an inert gas into the molten prepolymer to form a foamed PEN prepolymer with a void fraction of from 0.10 to 0.50, (3) forming the foamed PEN prepolymer into granules, (4) devolatilizing the granular PEN
10 prepolymer at a temperature of from 80°C to 140°C, (5) crystallizing the devolatilized PEN prepolymer at a temperature of from about 150°C to 260°C, and (6) solid state polymerizing the crystallized PEN prepolymer at a temperature of from 235°C to about 265°C to form a solid
15 state polymerized PEN polymer or copolymer thereof.