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(71) Applicant: **EASTMAN CHEMICAL COMPANY**
[US/US]; 100 North Eastman Road, Kingsport, TN 37660
(US).

(72) Inventors: **WEINHOLD, Stephen**; 3272 Ridgeview
Street, Kingsport, TN 37664 (US). **DONELSON,**
Michael, Eugene; 307 Cedar Valley Boulevard, Gray,
TN 37615 (US). **SHELBY, Marcus, David**; 299 Pactolus
Road, Kingsport, TN 37663 (US).

(74) Agent: **CARMEN, Dennis, V.**; P.O. Box 511, Kingsport,
TN 37662-5075 (US).

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(54) Title: COMPRESSION-INDUCED CRYSTALLIZATION OF CRYSTALLIZABLE POLYMERS

(57) Abstract: A crystallization process comprising passing a mass of amorphous crystallizable polymer having a first thickness (ft) through the nip gap of counter-rotating rolls having a nip gap (ng) at an ft:ng ratio of at least 1.2 to crystallize the polymer to a degree of crystallinity of at least 15% and thereby produce a semi-crystalline polymer, and particulating the semi-crystalline polymer. Strain crystallizing a sheet or fiber by using a drafting step to elongate the sheet or fiber is no longer needed. A high degree of crystallinity is imparted almost instantaneously, even in slow to crystallize copolyesters. The process allows one to extrude a thinner crystallizable sheet, substantially retains the dimensiona) width of the sheet as it is passed through the compression rolls, and produces substantially optically clear sheet and pellets. Suitable polymers include polyethylene terephthalate or naphthalate homopolymers or copolymers.



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