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Yang et al.

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(54) **METHOD FOR MANUFACTURING HEAT SEALABLE POLYESTER FILM**

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This patent is subject to a terminal disclaimer.

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(58) **Field of Classification Search**

CPC ... B29B 17/0042; B29C 48/022; B29C 48/08; B29C 48/21; B29K 2067/003;

(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

2004/0130059 A1 * 7/2004 Kern C08J 5/18
264/235.8

2006/0008638 A1 1/2006 Kiehne et al.
(Continued)

FOREIGN PATENT DOCUMENTS

AU 655531 B2 12/1994
CN 1753930 A 3/2006
(Continued)

OTHER PUBLICATIONS

Machine translation of JP 2007-169424, Taneda, Jul. 5, 2007 (Year: 2007).*

(Continued)

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(57) **ABSTRACT**

A method for manufacturing a heat sealable polyester film is provided. A part of a recycled polyester material is physically reproduced to obtain physically regenerated polyester chips. Another part of a recycled polyester material is chemically reproduced to obtain chemically regenerated polyester chips. Modified polyester chips, the physically regenerated polyester chips and the chemically regenerated polyester chips are mixed to form a raw material mixture, and the modified polyester chips are formed from the recycled polyester material. The raw material mixture is used to form a heat sealable layer. A base layer is disposed onto the heat sealable layer so as to obtain the heat sealable

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