

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* MARIUS HERT and PATRICE PERRET

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Appeal No. 1997-1299  
Application 08/393,746

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HEARD: March 23, 2000

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Before KIMLIN, JOHN D. SMITH and OWENS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

*DECISION ON APPEAL*

This is an appeal from the examiner's refusal to allow claims 2, 3 and 9-13 as amended after final rejection. Claims 4-7 stand objected to as being dependent from a rejected claim. Claims 1 and 8, which are the only other claims in the application, have been canceled.

*THE INVENTION*

Appellants' claimed invention is directed toward a process for preparing a multiphase thermoplastic composition which comprises a matrix including at least one thermoplastic polyamide or polyester resin and, dispersed therein, at least one ethylene polymer which has units derived from unsaturated epoxy monomers or from unsaturated acid anhydride monomers and which partially encapsulates at least one thermoplastic polyamide resin. Claim 12 is illustrative and reads as follows:

12. A process for preparing a multiphase thermoplastic composition comprising a mixture (I) that includes at least one ethylene polymer (A) which has units derived from unsaturated epoxy monomers or from unsaturated acid anhydride monomers, and at least one thermoplastic polyamide resin (B) which is partially encapsulated by the said ethylene polymer (A), the said mixture (I) being dispersed in a matrix that includes at least one thermoplastic polyamide or polyester resin (C), wherein the respective melting temperatures of said thermoplastic resins (B) and (C) are such that thermoplastic resin (B) remains partially encapsulated by ethylene polymer (A) during the manufacture or use of the said composition, which process comprises the steps:  
producing a mixture (I) in at least the first zone of a kneading tool provided with at least two feed zones, moving said mixture (I) upstream from said first zone, and subsequently introducing the thermoplastic resin (C) into a zone situated upstream of the zone for mixing the constituents (A) and (B) of the mixture (I), and dispersing the said mixture (I) in the said thermoplastic

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resin (C).<sup>[1]</sup>

*THE REFERENCES*

Epstein (Epstein '859) 1979	4,172,859	Oct. 30,
Epstein (Epstein '358) 1979	4,174,358	Nov. 13,
Hironari et al. (EP '280) 1988 (European patent application)	0 268 280	May 25,

*THE REJECTION*

Claims 2, 3 and 9-13 stand rejected under 35 U.S.C. § 103 as being unpatentable over EP '280 in view of Epstein '859 and Epstein '358.

*OPINION*

We have carefully considered all of the arguments advanced by appellants and the examiner and agree with appellants that the aforementioned rejection is not well founded. Accordingly, we reverse this rejection.

Claim 12, which is the only independent claim, requires that at least one thermoplastic polyamide resin is partially

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<sup>1</sup>In this claim, it appears that "upstream" should read "downstream".

encapsulated by at least one ethylene polymer having units derived from unsaturated epoxy monomers or from unsaturated acid anhydride monomers.

EP '280 discloses a rubber-like polymer dispersed in an amorphous polymer such that at least part of the rubber-like polymer is in the form of a stringy structure or a two-dimensional or three-dimensional network structure (page 5, lines 36-37; page 6, lines 1-2 and 9-10). The rubber-like polymer can be any rubber-like polymer having a storage shear modulus at room temperature of  $5 \times 10^8$  dyne/cm<sup>2</sup> or less (page 5, lines 17-19). The exemplified rubber-like polymers include olefin rubber-like copolymers such as ethylene-propylene rubber, ethylene-butene rubber and ethylene-propylene-butene rubber (page 5, lines 20-24).

The Epstein references are relied upon by the examiner for a suggestion to use in the EP '280 process an ethylene polymer having units derived from unsaturated epoxy monomers or from unsaturated acid anhydride monomers (answer, page 3).

The examiner argues that figures 3 and 4 of EP '280 show a rubber-like polymer in the form of a network structure in an

amorphous polymer such that the rubber-like polymer partially encapsulates the amorphous polymer (answer, page 4). The partial encapsulation referred to by the examiner appears to be the regions in figures 3 and 4 where the rubber-like polymer, which is the dark portion in each figure, surrounds the amorphous polymer, which is the light portion. Even if this argument is correct, for the following reason it is not persuasive.

As pointed out by appellants (brief, page 12), in both figures 3 and 4 of EP '280, the rubber-type polymer is a styrene-butadiene rubber and the amorphous polymer is a polyphenylene ether (page 2, lines 15-16 and 25; page 10, lines 9-15). The examiner has not provided evidence or technical reasoning which shows that if, instead of being a styrene-butadiene rubber, the rubber-like polymer were an ethylene polymer, particularly one having units derived from unsaturated epoxy monomers or from unsaturated acid anhydride monomers, and if this polymer formed a network structure in a

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thermoplastic polyamide rather than in a polyphenylene ether, the network structure would be comparable to the network structures shown in figures 3 and 4 of EP '280 and, therefore, would provide the partial encapsulation relied upon by the examiner.

Accordingly, we conclude that the examiner has not carried the burden of establishing a *prima facie* case of obviousness of the invention recited in any of appellants' claims.

*DECISION*

The rejection of claims 2, 3 and 9-13 under 35 U.S.C. § 103 over EP '280 in view of Epstein '859 and Epstein '358 is reversed.

*REVERSED*

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EDWARD C. KIMLIN	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
JOHN D. SMITH	)	
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
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TERRY J. OWENS	)	)
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