

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(2) is not binding precedent of the Board.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. 28

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JAN GROSSMAN, JOHN A. QUINN,
DAVID W. SWATTON, JOSE A. BRIONES,
and PAUL T. SHEA

Appeal No. 1997-0227
Application No. 08/113,147

ON BRIEF

Before WILLIAM F. SMITH, GARRIS, HANLON, Administrative Patent
Judges.

HANLON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final
rejection of claims 1-14. Claims 15-21 are also pending but
have been withdrawn from consideration. The claims on appeal

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are directed to a photosensitive element which includes a photosensitive layer comprising an elastomeric microgel binder, at least one ethylenically unsaturated monomer or oligomer and a photoinitiator system. Claim 1 is representative and reads as follows:

1. A photosensitive element comprising a support and a photosensitive layer, said photosensitive layer comprising:

(a) an elastomeric microgel binder having a core comprising a homopolymer or copolymer of an elastomeric monomer and a shell comprising a copolymer of the elastomeric monomer and a monomer having acidic functionality, wherein the shell copolymer is formed by polymerizing the monomer having acidic functionality with unpolymerized elastomeric monomer from the core;

(b) at least one ethylenically unsaturated monomer or oligomer; and

(c) a photoinitiator system.

The references relied upon by the examiner are:

Feinberg et al. (Feinberg)	4,894,315	Jan. 16, 1990
Fryd et al. (Fryd '192)	5,075,192	Dec. 24, 1991
Fryd et al. (Fryd '175)	5,077,175	Dec. 31, 1991
Mirle et al. (Mirle)	5,143,819	Sep. 1, 1992

The following rejections are at issue in this appeal:

(1) Claims 1, 6, 8-11 and 13 are rejected under 35 U.S.C. § 102(b) as being anticipated by Fryd '192.

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(2) Claims 12 and 14 are rejected under 35 U.S.C. § 103 as being unpatentable over Fryd '192 in view of Fryd '175.

(3) Claims 2-5 and 7 are rejected under 35 U.S.C. § 103 as being unpatentable over Fryd '192 in view Mirle.

(4) Claims 1-11 and 13 are rejected under 35 U.S.C. § 103 as being unpatentable over Feinberg in view of Fryd '192.

Claim interpretation

The claims on appeal are directed to a photosensitive element having a photosensitive layer comprising:

[A]n elastomeric microgel binder having a core comprising a homopolymer or copolymer of an elastomeric monomer and a shell comprising a copolymer of the elastomeric monomer and a monomer having acidic functionality, wherein the shell copolymer is formed by polymerizing the monomer having acidic functionality with unpolymerized elastomeric monomer from the core

Central to this appeal is the meaning of the phrase "unpolymerized elastomeric monomer from the core" recited in claim 1.

According to the specification, the claimed microgels are formed by the following process (pp. 8-10):

To prepare the core shell microgel, the core butadiene homopolymer or copolymer, is first formed as a latex dispersion by emulsion polymerization. Emulsion polymerization generally refers to polymerization in an aqueous system in which a

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monomer such as butadiene or a mixture of butadiene and a core comonomer, is present in a dispersed second phase, resulting in polymer as a dispersed solid phase. . . .

For the microgel binders used in practicing the invention, the butadiene is only partially polymerized at this point. It is preferred that less than about 95% by weight of the butadiene monomer is polymerized, more preferably 60 to 90% is polymerized. At this point, a monomer having acid functionality is added to the reacting mixture. This monomer polymerizes with the remaining butadiene monomer to form a thin shell on the polybutadiene core.

A microgel produced by this process is also described in Example 1. See Specification, p. 25 (polymerization of core was allowed to proceed until approximately 85% of the butadiene had polymerized; thereafter, methacrylic acid was added to produce a shell of poly(butadiene/methacrylic acid)); see also Specification, p. 30.

Therefore, in view of the specification, we interpret "unpolymerized elastomeric monomer from the core" to mean that monomer present during polymerization of the core but which remains unreacted after polymerization of the core has ceased. See In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969) (claims cannot be read in a vacuum but instead must be read in the light of the specification).

Discussion

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Having interpreted the phase at issue, we now turn to the teachings of Fryd '192 to determine whether it is reasonable to conclude that the microgel disclosed in Fryd '192 is identical or substantially identical to the claimed microgel, and therefore, shift the burden to appellants to establish otherwise. See In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977) (where the claimed and prior art products are identical or substantially identical, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of the claimed product).

The disclosure of Fryd '192 is directed to photosensitive compositions containing core shell microgel binders.

According to Fryd '192 (col. 3, lines 25-31):

[T]he core shell microgel binder has two domains, a core having less than 10% crosslinking and an aqueous processible non-crosslinked outer shell consisting of an acid-modified copolymer, and further wherein the monomer partitions in the shell of the microgel and the shell is grafted to the core using at least 0.1% of a grafting agent.

The grafting agent is said to polymerize "with both the core and shell monomers, thus, forming a chemical bond between the core and the shell" (col. 5, lines 64-66).

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Fryd '192 discloses two classes of grafting agents (col. 6, lines 1-26):

One class of grafting agents which can be used to practice the invention includes compounds having at least one acrylate or methacrylate group and at least one additional moiety which is capable of undergoing free radical polymerization at a rate substantially slower than the polymerization of the acrylate or methacrylate group.

The term "substantially slower" means that the polymerization rate of the additional moiety is so slow that it remains substantially unreacted after polymerization of the microgel core has been completed. Thus, the additional moiety provides pendant sites for free radical attack during polymerization of the shell. . . .

A second class of grafting agents which can be used to practice the invention includes compounds which contain residual unsaturation after polymerization. Examples of such compounds include conjugated dienes, such as butadiene.

At best, the grafting agents of Fryd '192 are viewed as a bridge, chemically bonding the core and the shell through unreacted moieties. In contrast, the core and shell in the claimed microgel are not chemically linked but rather are substantially distinct from one another.

Nevertheless, the examiner argues that (Answer, p. 12):

It is reasonable to presume that there . . . is at least one unreacted butadiene monomer remaining in the core, since polymerizations rarely go to completion. The instant claims are not limited by the amount of unreacted elastomeric monomer that

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	Bradley R. Garris)	BOARD OF
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	Administrative Patent Judge)	APPEALS AND
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	Adriene Lepiane Hanlon))
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