Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARK A. SMERZNAK,
WALTER A.M. BROECKX,
IWEIN J.M.J. GODERIS,
ROGER J. JONES,
DIANE PARRY,
JAY I. KAHN,
and
JEAN WEVERS

Appeal No. 2000-1877
Application No. 08/881,457

ON BRIEF

Before HANLON, OWENS, and DELMENDO, Administrative Patent Judges.

HANLON, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the final rejection of claims 1-17, all the claims pending in the application. The claims on appeal are directed to a non-aqueous liquid detergent. Claim 1 is representative and reads as follows:

1. A non-aqueous, liquid, heavy-duty detergent in the form of a suspension of solid, substantially insoluble particulate material dispersed throughout a structured, surfactant-containing liquid phase, wherein:

A) said composition comprises from about 45% to 95% by weight of the composition of a structured, surfactant-containing liquid phase formed by combining:

i) from about 50% to 80% by weight of said liquid phase of one or more non-aqueous organic diluents; and

ii) from about 20% to 50% by weight of said liquid phase of an anionic surfactant-containing powder which is formed by co-drying:

a) one or more alkali metal salts of C_{10-16} linear alkyl benzene sulfonic acids; and

b) a non-surfactant salt selected from the group consisting of alkali metal salts of sulfates, citrates, sulfo-succinates and mixtures thereof;

to produce a powder which contains from about 80% to 94% by weight of said powder of said alkyl benzene sulfonic acid salts, from about 2% to 15% by weight of said powder of said non-surfactant salts and from about 0.5% to 4% by weight of said powder of residual water; and which contains from about 10% to 25% by weight of said powder of a solid phase which is insoluble in said non-aqueous organic diluents; and

B) said composition also comprises from about 5% to 55% by weight of the composition of additional particulate material which ranges in size from about 0.1 to 1500 microns, which is substantially insoluble in said liquid phase and which is selected from peroxygen bleaching agents, bleach

activators, ancillary anionic surfactants, organic detergent builders and inorganic alkalinity sources and combinations of said particulate material types.

The examiner relies on the following references:

Houghton et al. (Houghton) EP 0 510 762 A2 Oct. 28, 1992
(published European Patent Application)

Kong-Chan et al. (Kong-Chan) WO 96/10072 Apr. 4, 1996
(published World Intell. Prop. Org. Application)

The following rejections are at issue in this appeal:

(1) Claims 1-17 are rejected under 35 U.S.C. § 103 as unpatentable over Houghton.

(2) Claims 1-17 are rejected under 35 U.S.C. § 103 as unpatentable over Kong-Chan.

Discussion

Claim 1 is directed to a non-aqueous liquid detergent composition in the form of a suspension of solid, substantially insoluble particulate material dispersed throughout a structured, surfactant-containing liquid phase. The structured, surfactant-containing liquid phase is formed by combining one or more non-aqueous organic diluents and an anionic surfactant-containing powder. The powder is formed by co-drying (a) one or more alkali metal salts of C_{10}-C_{16} linear alkyl benzene sulfonic acids and (b)

a non-surfactant salt selected from the group consisting of alkali metal salts of sulfates, citrates, sulfo-succinates and mixtures thereof.

According to appellants' specification, the powder comprises two distinct phases (Specification, p. 9, lines 18-24):

> One of these phases is insoluble in the non-aqueous organic liquid diluents; the other phase is soluble in the non-aqueous organic liquids. It is the insoluble phase of this anionic surfactant-containing powder which is dispersed in the non-aqueous liquid phase of the compositions herein and forms a network of aggregated small particles that allows the final product to stably suspend other additional solid particulate materials in the composition.

The preparation of a powder within the scope of claim 1 is described in Example I as follows (Specification, p. 24, line 26-p. 25, line 12):

EXAMPLE I
Preparation of LAS Powder

> Sodium C_{12} linear alkyl benzene sulfonate (NaLAS) is processed into a powder containing two phases. One of these phases is soluble in the non-aqueous liquid detergent compositions herein and the other phase is insoluble. It is the insoluble fraction which serves to add structure and particle suspending capability to the non-aqueous phase of the compositions herein.
>
> NaLAS powder is produced by taking a slurry of NaLAS in water (approximately 40-50% active) combined with dissolved sodium sulfate (3-15%) and a hydrotrope, sodium sulfosuccinate (1-3%). The hydrotrope and sulfate are used to improve the characteristics of the dry powder. A drum dryer is used to dry the slurry

into a flake. When the NaLAS is dried with the sodium sulfate, two distinct phases are created within the flake. The insoluble phase creates a network structure of aggregate small particles (0.4-2 um) which allows the finished non-aqueous detergent product to stably suspend solids.

The NaLAS powder prepared according to this example has the following makeup shown in Table I.

TABLE I
LAS Powder

Component	Wt. %
NaLAS	85%
Sulfate	11%
Sulfosuccinate	2%
Water	2.5%
Unreacted, etc.	balance to 100%
% insoluble LAS	17%
# of phase (via X-ray diffraction)	2

Thus, a portion of the C_{12} linear alkyl benzene sulfonate remains insoluble in the non-aqueous organic diluent.

Reading the claims in light of the specification, the powder produced by the process of claim 1 comprises a soluble phase and an insoluble phase. Moreover, the insoluble phase of the powder includes a C_{10}-C_{16} linear alkyl benzene sulfonate. See In re Prater, 415 F.2d 1393, 1404, 162 USPQ 541, 550 (CCPA 1969) (claims are not read in a vacuum but rather must be read in the light of the specification).

1) Rejection based on Houghton

The examiner relies on Houghton as teaching a nonaqueous liquid detergent in the form of a suspension of solid, substantially insoluble particulate material dispersed throughout a surfactant-containing liquid phase. Answer, p. 3. Houghton discloses that surfactants include anionic surfactants, such as the alkali metal salts of alkylbenzene sulfonic acid having from 10 to 18 carbon atoms in the alkyl group, and particulate material including detergency builders, such as alkali metal citrates. See p. 5, lines 28-29; p. 7, lines 20-22 and p. 4, lines 32-34.

Appellants argue that (Brief, p. 6):

> Houghton does not teach or suggest a composition that is structured with a powder produced from co-drying an alkali metal salt of alkyl benzene sulfonic acid with a non-surfactant salt selected from the group consisting of alkali metal salts of sulfates, citrates, sulfo-succinates and mixtures thereof.

In response, the examiner points out that in a product-by-process claim patentability is based on the product and not on the process used to produce the product. In re Thorpe, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985). Apparently, the examiner is of the opinion that the claimed detergent composition

is the same as or is rendered obvious by the detergent composition disclosed in Houghton. See Answer, p. 4, lines 10-12; p. 6.

To the extent that alkali metal citrates are dispersed in the surfactant-containing liquid phase of the detergent composition disclosed in Houghton, the examiner has failed to establish that the alkali metal citrates are associated with the alkylbenzene sulfonates as required by appellants' claim 1. For this reason, the rejection of claim 1 under 35 U.S.C. § 103 as unpatentable over Houghton is reversed. Since claims 2-17 are dependent on claim 1, the rejection of claims 2-17 under 35 U.S.C. § 103 as unpatentable over Houghton is also reversed.

2) Rejection based on Kong-Chan

Kong-Chan discloses a non-aqueous liquid detergent composition containing particles of peroxygen bleaching agents suspended therein. The examiner maintains that Kong-Chan teaches the claimed detergent composition. See Answer, pp. 4-5.

According to the examiner, Kong-Chan discloses a powder "containing one or more alkali metal salts falling within the C10-C16 linear alkyl benzene sulfonic acid presented claimed." The examiner relies on page 8, line 1 through page 9, line 4 of Kong-Chan for support. See Answer, p. 4.

Kong-Chan does not disclose "one or more alkali metal salts of C_{10-16} linear alkyl benzene sulfonic acids" on the pages relied upon by the examiner. In fact, Kong-Chan discloses (p. 13):

> One common type of anionic surfactant which is preferably not utilized in the preparation of the compositions herein comprises the sulfonated anionics which are alkyl benzene sulfonates. Such non-bleach activating sulfonated anionic surfactants, like linear alkylbenzene sulfonate (LAS), tend not to provide acceptable phase properties for the nonaqueous liquid detergent compositions prepared according to this invention. Accordingly, such compositions as prepared herein will preferably be substantially free of alkyl benzene sulfonate anionic surfactant materials.

Thus, Kong-Chan fails to suggest the claimed detergent composition.

For the reasons set forth above, the rejection of claim 1 under 35 U.S.C. § 103 as unpatentable over Kong-Chan is reversed. Since claims 2-17 are dependent on claim 1, the rejection of claims 2-17 under 35 U.S.C. § 103 as unpatentable over Kong-Chan is also reversed.

Conclusion

The rejection of claims 1-17 under 35 U.S.C. § 103 as unpatentable over Houghton is reversed. The rejection of claims 1-17 under 35 U.S.C. § 103 as unpatentable over Kong-Chan is reversed.

REVERSED

ADRIENE LEPIANE HANLON Administrative Patent Judge	)	
TERRY J. OWENS Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
ROMULO H. DELMENDO Administrative Patent Judge	)	

ALH:hh

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