

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YUICHIRO MURAYAMA, MASAKI SATAKE,
HIROSHI HASHIMOTO and TSUTOMU OKITA

Appeal No. 1999-0097
Application No. 08/532,976

HEARD: May 23, 2001

Before KIMLIN, GARRIS and JEFFREY T. SMITH, Administrative Patent Judges.

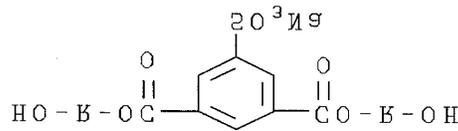
KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1, 2, 7, 8, 13 and 14. Claims 4, 6, 11, 12 and 17-20, the other claims remaining in the present application, have been objected to by the examiner as being based upon a rejected base claim. Claim 1 is illustrative:

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1. A magnetic recording medium, comprising a magnetic layer containing ferromagnetic powder dispersed by a binder, the magnetic layer being located on a non-magnetic support member, wherein said binder comprises a polyurethane resin prepared by reacting a long chain diol having a weight average



molecular weight of 800 to 5,000, a short chain diol having a weight average molecular weight of 50 to 500, and an organic diisocyanate, wherein said long chain diol is present in said polyurethane resin in an

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amount of 1 to 5 mol% and is represented by the following formula (1):

where R represents a polyalkyleneglycol residual group.

The examiner relies upon the following references as evidence of obviousness:

Kolycheck et al. (Kolycheck)	4,643,949	Feb. 17, 1987
Ohkubo et al. (Ohkubo)	5,071,578	Dec. 10, 1991

Appellants' claimed invention is directed to a magnetic recording medium comprising a magnetic layer which contains a

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ferromagnetic powder dispersed in a binder. The binder is a polyurethane resin prepared by reacting a long chain diol, a short chain diol and an organic diisocyanate. The long chain diol is present in an amount of 1 to 5 mol% and is defined by the recited formula.

Appellants submit at page 3 of the principal brief that "[c]laims 1, 2, 7, 8, 13 and 14 stand or fall together." Accordingly, all the appealed claims stand or fall together with claim 1.

Appealed claims 1, 2, 7, 8, 13 and 14 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kolycheck and Ohkubo.

We have thoroughly reviewed each of appellants' arguments for patentability, as well as the specification data relied upon in support thereof. However, we are in full agreement with the examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we will sustain the examiner's rejection for essentially those reasons expressed in the Answer, and we add the following primarily for emphasis.

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Appellants do not dispute that Kolycheck, the primary reference, discloses, like appellants, a magnetic recording medium comprising a magnetic layer on a non-magnetic support wherein the magnetic layer contains ferromagnetic powder dispersed in a polyurethane resin binder. Also, appellants do not dispute the examiner's finding that the polyurethane resin binder of Kolycheck is prepared by reacting long chain and short chain diols within the claimed molecular weight ranges and an organic diisocyanate. Kolycheck does not teach that the long chain diol is the sulfonated one of the claimed formula, and the reference also does not teach that the long chain diol is present in the claimed amount of 1 to 5 mol%. To make up for these deficiencies in Kolycheck, the examiner cites Ohkubo for its teaching of a magnetic recording medium comprising a magnetic layer containing a ferromagnetic powder dispersed in a polyurethane binder wherein the polyurethane binder is prepared with appellants' long chain sulfonated diol. In addition, Ohkubo exemplifies amounts for the long chain diol that fall within the claimed range. Again, appellants do not dispute that Ohkubo employs a sulfonated

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long chain diol that is encompassed by the claimed formula, and which is used in the claimed amount.

Based on the collective teachings of Kolycheck and Ohkubo, we agree with the examiner that it would have been obvious for one of ordinary skill in the art to select the sulfonated long chain diol of Ohkubo for the long chain diol component of Kolycheck for the purpose of improving the dispersion of the magnetic pigment. In addition, we agree with the examiner that Ohkubo would have suggested utilizing an amount of the sulfonated long chain diol that falls within the claimed range.

Appellants, while conceding that Kolycheck does not define the amount of long chain polyol present in the composition, points to EXAMPLE 1 of the reference which uses 14.66 mol% of the long chain diol. However, as noted by the examiner, the reference is not limited to its specific examples, and Kolycheck provides no teaching that the long chain diol must be used in an amount greater than 1-5 mol%. Furthermore, whereas EXAMPLE 1 of Kolycheck uses a 2.4/1 ratio of short chain diol to long chain diol, claim 2 of Kolycheck recites that the ratio of short chain diol to long chain diol

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is as high as 10:1. Moreover, as explained by the examiner and acknowledged by appellants at page 7 of the principal brief, Ohkubo exemplifies a polyurethane resin binder prepared with 2.25 mol% of a sulfonated long chain diol in accordance with the claimed formula. Accordingly, we find that it would have been obvious for one of ordinary skill in the art to use the presently claimed amount of long chain sulfonated diol in preparing the polyurethane resin of Kolycheck. While appellants contend that Example 4 of Ohkubo uses a second long chain diol that results in the use of 8.27 mol% of long chain diol components, the examiner properly points out that Ohkubo teaches that it is the presence of the sulfonate groups which improve the dispersion of the magnetic powder and, therefore, significance attaches to the amount of sulfonated diol that is used to prepare the polyurethane binder. The long chain diol cited by appellants in Ohkubo's Example 4, Tone TM 0210, is described by Ohkubo as a precursor to a sulfonated diol (column 9, lines 65-68). In addition, we find claim 1 to be sufficiently broad to embrace polyurethane resins prepared by reacting a long chain diol of the type disclosed by Ohkubo in addition to the three components recited in appealed claim 1.

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Appellants cite Comparative Examples 3 and 4 of the present specification, which contain amounts of long chain diol greater than the claimed upper limit. According to appellants, the specimens "are significantly inferior in terms of still durability and storage adhesion than those having a lower content of polyol in accordance with the present claimed invention" (page 7 of principal brief). However, we agree with the examiner that the specification data is not commensurate in scope with the degree of protection sought by the appealed claims. In re Grasselli, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983); In re Clemens, 622 F.2d 1029, 1035, 206 USPQ 289, 296 (CCPA 1980). The examiner correctly notes that appealed claim 1 embraces the use of all short chain diols having the recited molecular weight, whereas the specification data is limited to a specific short chain diol, i.e., one containing a cyclohexane ring. In addition, the appealed claims are not limited to the specific long chain diol used in the specification examples. While appellants maintain at page 2 of the Reply Brief that "the Examiner has not set forth any reason why similar results would not be obtained with a short chain diol other than diols containing a

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cyclohexane ring," it is well settled that the burden of demonstrating unexpected results rests upon the party asserting them. In re Klosak, 455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972). Furthermore, appellants have not established on this record that the specification results would be considered truly unexpected by one of ordinary skill in the art. In re Merck & Co., 800 F.2d 1091, 1099, 231 USPQ 375, 381 (Fed. Cir. 1986).

In conclusion, based on the foregoing, the examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

EDWARD C. KIMLIN)	
Administrative Patent Judge)	
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BRADLEY R. GARRIS)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
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JEFFREY T. SMITH)
Administrative Patent Judge)

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