(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
21 August 2008 (21.08.2008)

PCT

(10) International Publication Number
WO 2008/100993 A1

(51) International Patent Classification:
A61L 9/00 (2006.01) *A61L 11/00* (2006.01)

(21) International Application Number:
PCT/US2008/053813

(22) International Filing Date:
13 February 2008 (13.02.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/889,651 13 February 2007 (13.02.2007) US

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:
— *of inventorship (Rule 4.17(iv))*

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(54) Title: DEODORANT COMPOSITIONS FOR BODY WASTE COLLECTORS

(57) Abstract: The invention relates to delivering or applying deodorizing compositions to ostomy and incontinence bags to effectively reduce odor. The composition utilizes a polymer-peroxide complex, and can be delivered in the form of an adhesive, liquid, gel, sachet, tablet, paste, powder, or fabric The compositions include a hydrogen peroxide generating or releasing compound, N-vinyllactam, and oxazolmes.

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DEODORANT COMPOSITIONS FOR BODY WASTE COLLECTORS

BACKGROUND OF THE INVENTION

There are several medical conditions that require attachment of a device to the body to collect body waste. An example of such a condition is an ostomy. An ostomy appliance is typically attached to the body via a pressure sensitive adhesive. An ostomy appliance typically includes a wafer containing a pressure sensitive adhesive and a receiving pouch or bag to collect and contain body waste. When the pouch is removably attached to the wafer via a coupling mechanism, it is typically referred to as a two-piece device. When the wafer and the pouch are permanently attached to each other, the device is typically referred to as a one-piece device.

The malodor from the waste matter collected in the pouch is usually contained to some extent by the film material which forms the pouch. This film acts as an odor barrier. In addition, the ostomy pouch is often fitted with a filter to deodorize the odor and prevent the pouch from ballooning due to excessive gas build-up. The filter's ability to deodorize the air is limited and is potentially affected by factors including rate of air flow and blockage of the filter by waste matter. Another situation where deodorization is desirable occurs when the ostomate is draining the pouch contents in a toilet.

There are several pouch deodorizing products available in the market place for use inside the ostomy bag. Most of these deodorants are based on mild oxidizing agents such as copper or zinc salts. Their efficacy in removing the odor causing compounds is often poor. Consequently, there is a need for a better odor removing deodorizer for application inside the pouch and/or during draining the contents in a toilet.

According to the present invention, it is possible and practical to utilize a polymer-peroxide complex as an odor reducing component in an ostomy pouch. Pursuant to the present invention, the peroxide complex is a polyvinylpyrrolidone (PVP) – hydrogen peroxide complex, which is commercially available as Peroxydone®. This complex has been found to be a surprisingly effective deodorant for body waste. Another suitable polymer peroxide complex suitable for deodorization is a PVP – sodium perborate complex.

The use of hydrogen peroxide as a deodorant is known. The effectiveness of hydrogen peroxide as a deodorant is dependent on its stability in the composition

and the application. Premature reaction of hydrogen peroxide to water and oxygen will render the composition ineffective to function as a deodorant.

The present invention is related to a deodorizing composition comprising a hydrogen peroxide generating compound and a delivery or application means for delivering or applying the composition to an ostomy or incontinence bag, a method of providing and/or attaching such a composition to ostomy and incontinence bags permanently or removably, wherein the composition remains stable and the peroxide is appropriately released in an amount suitable for body waste deodorization when the composition comes in contact with the body waste.

Patent documents related to the use of hydrogen peroxide as a deodorant include the following:

U.S. Patent No. 4,863,445 discloses a body fluid collection reservoir with a tablet having an uncoated surface area that dissolves in body fluid thereby generating hydrogen peroxide to inhibit microbial growth.

U.S. Patent No. 5,904,901 discloses an apparatus for deodorization and disinfection for a room comprising an ozone generator and a device for atomizing hydrogen peroxide solutions.

EP 0970672A2 discloses a collection pouch for collecting body waste matter and a carrier which carries at least one malodor counteractant which is fixedly attached to the pouch wall. The counteractant is an oxidizing agent generator such as hydrogen peroxide, chlorine dioxide or metal perborate.

EP 1013249A1 discloses an ostomy or incontinence pouch containing a capsule, which contains an odor counteracting agent for affecting the pouch contents. The odor counteracting agent includes hydrogen peroxide.

U.S. Patent No. 6,015,536 discloses the removal of odor from the effluent generated by an organic material treatment plant utilizing a deodorizing component based on aqueous peracid and hydrogen peroxide.

U.S. Patent No. 6,656,169B1 discloses an ostomy or incontinence pouch having a capsule containing region inside the pouch. The capsule releases the agent when the region inside the pouch is ruptured. The agent may be a deodorizing agent, a disinfectant, or a preservative. The agent may also include a malodor counteractant, such as hydrogen peroxide.

DETAILED DESCRIPTION OF THE INVENTION

A deodorant composition for application in a body waste collector comprising a polymer-peroxide complex. The composition may be delivered or applied in the form of a liquid, an adhesive, a gel, a sachet, a paste, a film, a tablet, a powder, or a fabric. The polymer is preferably an N-vinyllactam and/or an oxazoline. The N-vinyllactam is selected from the group consisting of N-vinylpyrrolidone, N-vinylpiperidone, N-vinylcaprolactam, N-vinyl-3-morpholinone, N-vinyl-4-oxazolidinone, N-vinylimidazole, or combinations thereof. Alternatively, the polymer may be a copolymer of an N-vinyllactam and a vinyl acetate. The oxazoline is selected from an alkyl oxazoline, an aryl oxazoline, or combinations thereof. The peroxide is selected from a group consisting of hydrogen peroxide, sodium perborate, urea peroxide, dissodium phosphate-hydrogen peroxide adduct, sodium pyrophosphate-hydrogen peroxide adduct, potassium perborate, sodium sulfate-hydrogen peroxide adduct, sodium percarbonate, or combinations thereof.

The following are examples of the present invention.

Example 1. A liquid composition

About 10 grams of Peroxydone® K30 and 5 grams of Peroxydone® K90 were dissolved in 95% ethanol under constant stirring at room temperature. After about 45 minutes, the stirring was stopped. A sprayable liquid composition was obtained. As used herein, Peroxydone® is a registered trademark of International Specialty Products (ISP). Peroxydone®, K3O and K9O are product designations of ISP.

Deodorization Test. To two glass jars marked A and B, a few grams of chopped onion was added and the jars closed with a lid. After about 5 minutes, into Jar A, about three sprays of the Peroxydone® solution in ethanol was sprayed and the lid closed immediately. Jar B was left as a control without any spray. After about 10 minutes, the jars were opened and smelled for onion odor by three different individuals. The consensus was that Jar A had considerably less onion odor than control Jar B.

Example 2. A film composition

Sodium carboxymethyl cellulose, glycerol, Peroxydone® K30, and Peroxydone® K90 are to be dissolved in 95% ethanol at a 20% solids level. The

resulting solution is to be air dried at ambient conditions to form a film. Deodorization testing will be performed on this composition.

Example 3. A Paste composition

Peroxydone® K30 and K90 are to be mixed with petrolatum and zinc oxide at 40°C to form a pasty consistency. Deodorization testing will be performed on this composition.

Example 4. A Sachet composition

Peroxydone® K30 10 parts and Peroxydone® K 90 5 parts are to be dissolved in 85 parts of polyethylene glycol 300. The resulting liquid is to be injected into a sachet made of polyvinyl alcohol film. This film is expected to dissolve in body waste. The liquid will also be injected into low density polyethylene film which is expected to release the contents upon mechanical rupture. Deodorization testing will be performed on this composition.

Example 5. An Adhesive composition

Peroxydone® K30 10 parts, Peroxydone® K 90 5 parts, and Solkafloc® 60 parts are to be mixed with 25 parts polyisobutylene L100 in heptane. The solution will be dried at 40°C to yield an adhesive composition. Deodorization testing will be performed on this composition.

CLAIMS

I claim:

1. A deodorant composition for application in a body waste collector comprising a polymer-peroxide complex.
2. The deodorant composition of claim 1, wherein the composition is in the form of a liquid, an adhesive, a gel, a sachet, a paste, a film, a tablet, a powder, or a fabric.
3. The deodorant composition of claim 1, wherein the polymer includes an N-vinyllactam and/or an oxazoline.
4. The deodorant composition of claim 3, wherein the N-vinyllactam is selected from the group consisting of N-vinylpyrrolidone, N-vinylpiperidone, N-vinylcaprolactam, N-vinyl-3-morpholinone, N-vinyl-4-oxazolidinone, N-vinylimidazole, or combinations thereof.
5. The deodorant composition of claim 1, wherein the polymer is based on a copolymer of an N-vinyllactam and a vinyl acetate.
6. The deodorant composition of claim 3, wherein the oxazoline is an alkyl oxazoline, an aryl oxazoline, or combinations thereof.
7. The deodorant composition of claim 1 wherein the peroxide is selected from a group consisting of hydrogen peroxide, sodium perborate, urea peroxide, dissodium phosphate-hydrogen peroxide adduct, sodium pyrophosphate-hydrogen peroxide adduct, potassium perborate, sodium sulfate-hydrogen peroxide adduct, sodium percarbonate, or combinations thereof.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 08/53813

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - A61L 9/00, A61L 11/00 (2008.04)
USPC - 424/76.5, 424/76.6, 424/76.8
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC - 424/76.5, 424/76.6, 424/76.8
IPC(8) - A61L 9/00, A61L 11/00 (2008.04)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 424/76.5, 424/76.6, 424/76.8; 422/5; 424/76.1; see keywords below.
IPC(8) - A61L 9/00, A61L 11/00 (2008.04)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubWEST (DB=PGPB,USPT,USOC,EPAB,JPAB; PLUR=NO; OP=ADJ): freepatentsonline.com; WIPO; Google Patents; Google;
Keywords: deodorant, N-vinyllactam, oxazoline, waste, body waste collection, vinylpyrrolidone, vinylpiperodone, vinylcaprolactam, morpholinone, oxazolidone, vinylimidazole, acetate, peroxide, ostomy, colostomy, odor

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2004/0062681 A1 (WINSTON) 01 April 2004 (01.04.2004) see entire document, especially para [0005], [0006], [0014], [0016], [0017], [0018], [0024], [0030], [0034].	1-7
Y	US 5,399,630 A (SANCHEZ) 21 March 1995 (21.03.1995) see entire document, especially col 24, ln 61-64, col 28, ln 39-58.	1-7
Y	US 2004/0096409 A1 (LOEFFLER et al) 20 May 2004 (20.05.2004) see entire document, especially para [0022], [0043], [0049], [0051], [0057], [0072], [0105], [0106], [0109], [0113], [0114], [0119].	3-7

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
13 May 2008 (13.05.2008)	27 JUN 2008
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774