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(54) Title: FABRIC CARE PRODUCTS

(57) Abstract: Laundry care products comprising a plastic container containing a laundry care composition, wherein the container comprises a self venting tap functionally attached to the container, provides for a product that is free of a venting chimney and/or the container's fill volume to be maximized.



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FABRIC CARE PRODUCTS

FIELD OF THE INVENTION

The present invention relates to fabric care products having a self-venting press tap.

BACKGROUND OF THE INVENTION

Laundry care products having press taps are well known. These products are typically characterized by larger sizes, i.e., about four liters or greater. These products typically have plastic containers that may have venting chimneys to allow air to enter into the container to release a vacuum that may be created when the composition is dispensed from the container via the dispensing tap. Venting chimneys may require a significant amount of plastic when containers are blow-molded (e.g., 6-11% by weight of the blow molded plastic container). Venting chimneys may also require manufactures not to fill container completely full. Consumer may find it undesirable to releasably open a venting chimney and to have fabric care composition come out through the opened venting chimney.

There is a need to provide a laundry care product that is free of venting chimneys and allows manufacturing to completely fill container with fabric care product, and yet still provide the convenience of a dispensing tap for larger sizes of fabric care products.

See e.g., WO 2007/108025; US 6,631,744; US 6,029,858; US D429,643.

SUMMARY OF THE INVENTION

The present invention attempts to address these and other needs by providing, in a first aspect of the invention, a laundry care product comprising: a plastic container containing a laundry care composition, wherein the container comprises a self venting tap functionally attached to the container that is capable of dispensing the contained laundry care composition from the container, and wherein the container is free of a venting chimney.

Another aspect of the invention provides a laundry care product comprising a plastic container containing a contained volume, wherein the contained volume is: (i) a void volume and; (ii) a fluid volume of a liquid laundry care composition; wherein the void volume comprises about 8% or less by volume of the contained volume and wherein the fluid volume comprises about 92% or more by volume of the contained volume; and wherein the plastic container is free

of a venting chimney; and wherein the container further comprises a self venting tap functionally attached to the container that is capable of dispensing the laundry care composition contained by the container.

Another aspect of the invention provides a method of manufacturing a laundry care product comprising the steps: (i) providing a plastic container containing a contained volume and single opening accessing the contained volume; (ii) filling the plastic container with a liquid laundry care composition through the single opening until the composition occupies at least 92% of the contained volume; (iii) functionally attaching a self venting tap to the single opening of the container.

DETAILED DESCRIPTION OF THE INVENTION

One aspect of the invention provides a laundry care product that comprises a self venting tap functionally attached to the container of the product. “Self venting tap” means a tap suitable for dispensing liquids, preferably of varying viscosities, wherein the tap itself capable of venting, i.e., allowing air to pass from the outside of the container to inside the container to release a vacuum that is produced from when the liquid laundry care composition is dispensed from the container. In a preferred embodiment, the self venting tap is a self venting press tap. A non-limiting example of a self venting press tap includes one from Vitop Moulding S.R.I, Italy. Such a self-venting tap is described in WO 2007/108025 and the Canadian equivalent CA 2,646,575. The U.S patent publication or patent grant equivalent thereof is hereby incorporated by reference when it becomes available.

One aspect of the invention provides a laundry care product that is free of a venting chimney. The term “venting chimney” means an opening in the container, typically releasably sealed with a venting closure, for the purposes of filling the container with a laundry composition and/or venting the container (i.e., introducing air into the container to release the vacuum that is otherwise created from dispensing the composition contained in the container). The venting chimney typically has an inner diameter from about 2 cm to about 3 cm. The venting chimney may be integral to the container (e.g., formed as part of blow molding process). The venting closure is typically functionally attached to the venting chimney. Non-limiting

examples of venting closures includes a screw cap, snap cap, pull cap, venting cap, or any sealing mechanism known in the art for removably sealing a venting chimney.

There are typically instructions, on containers that have a venting chimney, that state, “Twist cap for quicker flow,” or “Twist cap to vent” with an arrow directed the consumer which direction (e.g., counterclockwise). A non-limiting example of a venting chimney and venting closure includes one described in US 6,631,744, so called “vent 56” and “venting cap 58,” respectively. In one embodiment, the product of the present invention is free of any venting closure (i.e., independent from the self venting tap). In another embodiment, the product is free of any other venting mechanism other than what is integral to the self-venting tap, such as, but not limited to, venting membranes or the like.

Another aspect of the invention is directed to maximizing the fill volume of the container with fabric care composition. The container of the fabric care product of the present invention contains fabric care composition. The volume (irrespective of what occupies the volume) that is contained by the container may be described by a contained volume. In turn, the contained volume may have a fluid volume of laundry care composition occupying the fill volume of the container (i.e., contained by the container) with the remainder as a void volume. Void volume is the volume (of the overall fill volume of the container) not occupied by the laundry care composition, e.g., air. In one embodiment, the fluid volume is about 92%, or more than about 92%, by volume of the contained volume; alternatively 93%, 94%, 95%, 96%, 97%, 98%, 99%, or more than 99% by volume of the contained volume. The void volume is about 5%, or less than about 3%, by volume of the contained volume; alternatively 7%, 6%, 5%, 4%, 3%, 2%, 1%, or less than about 1% of volume of the contained volume.

Without wishing to be bound by theory, the absence of a venting chimney allows the contained volume to be maximized with laundry care composition. In one embodiment, the volume of the fabric care composition contained in the container is from about 2 liters to about 8 liters, alternatively 3 liters to about 7 liters, alternatively from about 4 liters to about 6 liters, alternatively combinations thereof.

The containers of this invention can be made of plastic, preferably of a rigid plastic. Non-limiting examples of plastic includes thermoform plastics and thermoset plastics, such as high density polyethylene, polymethylmethacrylate, polycarbonate, diethyleneglycol bisarylcarbonate, polyethylene terephthalate, polyethylene naphthalate, polyvinyl chloride,

polyurethane, epoxy resin, polyamide-based resins, low density polyethylene, styrene butadiene copolymers, acrylonitrile, acrylonitrile-butadiene copolymer, cellulose acetate butyrate and mixtures thereof. The container may also comprise a handle, suitable for grasping by a consumer (*see e.g.*, US 6,631,744 so called “handle 46”). The container may also comprise a measuring cup (*see e.g.*, US 6,631,744 so called “closure/measuring cup 44”). The container may be made by blow-molding the plastic.

The fabric care composition of the present invention are preferably liquid, preferably water comprising compositions. In one embodiment, the fabric care composition comprises a liquid laundry detergent; preferably comprising deterative levels of anionic surfactant, ionic surfactant, or combinations thereof; preferably comprising a basic pH. A non-limiting example of a laundry detergent composition is described in U.S. Pat. Nos. 4,515,705; 4,537,706; 4,537,707; 4,550,862; 4,561,998; 4,597,898; 4,968,451; 5,565,145; 5,929,022; 6,294,514; and 6,376,445. In one embodiment the fabric care composition is a liquid fabric softening composition; preferably comprising a cationic fabric softening agent; preferably comprising an acid pH. A non-limiting example of a fabric softening composition is described in US 6,797,688.

Methods of using the products of the presenting invention include dosing a fabric care composition from the products of the present invention to an automatic laundry washing machine.

While particular embodiments of the present invention have been illustrated and described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the spirit and scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of this invention.

All documents cited are, in relevant part, incorporated herein by reference; the citation of any document is not to be construed as an admission that it is prior art with respect to the present invention.

What is claimed is:

1. A laundry care product comprising: a plastic container containing a laundry care composition, wherein the container comprises a self venting press tap functionally attached to the container that is capable of dispensing the contained laundry care composition from the container, and wherein the container is free of a venting chimney.
2. The product of claim 1, where the product is free of a venting closure releasably attached to the venting chimney.
3. The product of claim 1 or 2, wherein the laundry care composition comprises a volume of from about 4 liters to about 6 liters.
4. The product of claim 3, wherein the composition is a laundry detergent composition.
5. The product of claim 3, wherein the composition is a fabric softening composition.
6. A laundry care product comprising a plastic container containing a contained volume, wherein the contained volume is: (i) a void volume and; (ii) a fluid volume of a liquid laundry care composition; wherein the void volume comprises about 8% or less by volume of the contained volume and wherein the fluid volume comprises about 92% or more by volume of the contained volume; and wherein the plastic container is free of a venting chimney; and wherein the container further comprises a self venting press tap functionally attached to the container which is capable of dispensing the laundry care composition contained by the container.
7. The product of claim 6, wherein the container is free of a venting chimney and free of a venting closure releasably attached to the venting chimney.
8. The product of claim 6 or 7, wherein the liquid laundry care composition is a liquid laundry detergent composition.
9. A method of manufacturing a laundry care product comprising the steps:

- (i) providing a plastic container containing a contained volume and single opening accessing the contained volume
- (ii) filling the plastic container with a liquid laundry care composition through the single opening until the composition occupies at least 92% of the contained volume;
- (iii) functionally attaching a self venting press tap to the single opening of the container;

10. The method of claim 9, further comprising the step of functionally attaching a measuring cup to the self venting press tap.

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2010/027371

A. CLASSIFICATION OF SUBJECT MATTER

INV. B67D3/04

ADD.

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)

B67D B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2005/124204 A2 (HENKEL KGAA [DE]; GEBERZAHN RAINER [DE]; KITTSCHER PETER [DE]; MUEHLHA) 29 December 2005 (2005-12-29)	1,2,4
Y	figures 1, 2	3,5
Y	WO 2008/117250 A2 (PROCTER & GAMBLE [US]; LESTER JOSEPH CRAIG [US]; CORONEL JULIUS AUSTRI) 2 October 2008 (2008-10-02) page 12, paragraph 4; figure 1	3,5-10
Y	US 3 405 848 A (DAMREL ROBERT L) 15 October 1968 (1968-10-15) column 4, line 68 - column 5, line 10; figure 1	6-10



Further documents are listed in the continuation of Box C.



See patent family annex.

* 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 document 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

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2010/027371

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2005124204 A2	29-12-2005	DE 102004029488 B3 EP 1756453 A2 JP 2008502852 T US 2008257884 A1	19-01-2006 28-02-2007 31-01-2008 23-10-2008
WO 2008117250 A2	02-10-2008	AR 067266 A1 CA 2679323 A1 EP 2125550 A2	07-10-2009 02-10-2008 02-12-2009
US 3405848 A	15-10-1968	NONE	