US 20080041751A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2008/0041751 A1**

Catalfamo (43) **Pub. Date: Feb. 21, 2008**

(54) **ARTICLE COMPRISING AN INDICATOR**

(75) Inventor: **Vincenzo Catalfamo**, Cincinnati, OH (US)

Correspondence Address:
THE PROCTER & GAMBLE COMPANY
INTELLECTUAL PROPERTY DIVISION - WEST BLDG.
WINTON HILL BUSINESS CENTER - BOX 412,
6250 CENTER HILL AVENUE
CINCINNATI, OH 45224

(73) Assignee: **The Proctor & Gamble Company**

(21) Appl. No.: **11/824,735**

(22) Filed: **Jul. 2, 2007**

Related U.S. Application Data

(60) Provisional application No. 60/818,692, filed on Jul. 5, 2006.

Publication Classification

(51) **Int. Cl.**
B65D 85/00 (2006.01)

(52) **U.S. Cl.** **206/459.1**; 428/34.1

(57) **ABSTRACT**

An article comprising a composition and a container containing said composition. The container comprises a water-soluble portion having a coating applied thereto. The water-soluble portion comprises at least one indicator selected from the group consisting of a visual indicator, a tactile indicator, a sound indicator, or combinations thereof.

ARTICLE COMPRISING AN INDICATOR

CROSS REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Application Ser. No. 60/818,692, filed Jul. 5, 2006, the disclosure of which is incorporated by reference.

FIELD OF THE INVENTION

[0002] This invention relates to an article comprising a product composition and a container having a water-soluble portion and an indicator. The invention also relates to packages comprising the article.

BACKGROUND OF THE INVENTION

[0003] Water-soluble substrates are gaining wider acceptance for use as packaging materials such as containers. These containers comprise a product composition which is to be released when the container is immersed in an aqueous solution. Examples of such containers are sachets and pouches, and often, they comprise a unit-dose of a product composition.

[0004] The most common consumer complaint for water-soluble pouches is linked to unwanted pouch dissolution when accidentally exposed to small amounts of water, such as when water gets inside the outer packaging in which the pouches are sold and stored after purchase, from wet hands, high humidity, leaking sinks or pipes during storage. This may cause the water-soluble pouches to leak prior to use and/or stick together. The second most frequent complaint is that of the water-soluble pouch failing to fully dissolve upon use.

[0005] Often, water-soluble pouches are also aesthetically unappealing. One attempt has been made to make water-soluble pouches aesthetically more pleasing. The water-soluble pouches sold under the Method brand name, and comprising a unit-dose of an automatic dish washing composition, have been printed with a logo.

[0006] Also, still many consumers are reluctant to use these new types of products over their conventional products, or do not know exactly how these products are to be correctly used.

[0007] Thus, there remains an unmet need for water-soluble substrates and articles made therefrom, which have improved resistance to dissolution against exposure to small amounts of water, while also being aesthetically appealing and/or aid a user in correctly using such articles.

[0008] It is thus the objective of the present invention to overcome all of the foregoing problems, and to provide an article comprising a water-soluble portion, which has improved resistance to dissolution yet is aesthetically appealing and/or informs a user how the article is to be correctly used.

SUMMARY OF THE INVENTION

[0009] The present invention relates to an article comprising a composition and a container containing said composition. The container comprises a water-soluble portion having a coating applied thereto. The water-soluble portion comprises at least one indicator selected from the group consisting of a visual indicator, a tactile indicator, a sound indicator, or combinations thereof.

[0010] The present invention also relates to packages comprising one or more of these articles.

DETAILED DESCRIPTION OF THE INVENTION

[0011] The present invention relates to an article comprising a container and a composition. The container can be in the form of for example a pouch, a sachet, a capsule, a bag, etc. to hold a product composition. The container comprises a water-soluble portion. The water-soluble portion has a coating applied thereto, and comprises at least one indicator selected from the group consisting of a visual indicator, a tactile indicator, a sound indicator, or combinations thereof. Preferably, the container comprises a unit dose of a composition.

Water-Soluble Portion

[0012] The water-soluble portion may represent as little as 5%, preferably at least 10%, more preferably at least 20%, even more preferably at least 30%, and most preferably at least 40% of the total outer surface area of container. Highly preferred containers comprise a water-soluble portion representing a surface area which is from 50% to 100% of the total outer surface area of the container.

[0013] The water-soluble portion is a substrate made of polymeric materials and has a water-solubility of at least 50 weight %, as measured by the method set out here after using a glass-filter with a maximum pore size of 20 microns. Preferably, the substrate has a water-solubility of at least 75 weight % or even more preferably at least 95 weight %,

[0014] 50 grams±0.1 gram of substrate material is added in a pre-weighed 400 ml beaker and 245 ml±1 ml of 25° C. distilled water is added. This is stirred vigorously on a magnetic stirrer set at 600 rpm, for 30 minutes. Then, the mixture is filtered through a folded qualitative sintered-glass filter with a pore size as defined above (max. 20 micron). The water is dried off from the collected filtrate by any conventional method, and the weight of the remaining material is determined (which is the dissolved fraction). Then, the % solubility can be calculated.

[0015] Preferred polymers, copolymers or derivatives thereof suitable for use as substrate material are selected from polyvinyl alcohol (PVA), polyvinyl pyrrolidone, polyalkylene oxides, acrylamide, acrylic acid, cellulose, cellulose ethers, cellulose esters, cellulose amides, polyvinyl acetates, polycarboxylic acids and salts, polyaminoacids or peptides, polyamides, polyacrylamide, copolymers of maleic/acrylic acids, polysaccharides including starch and gelatine, natural gums such as xanthum and carragum, polyacrylates and water-soluble acrylate copolymers, methylcellulose, carboxymethylcellulose sodium, dextrin, ethylcellulose, hydroxyethyl cellulose, hydroxypropyl methylcellulose, maltodextrin, polymethacrylates, polyvinyl alcohol copolymers, hydroxypropyl methyl cellulose (HPMC), and mixtures thereof. The most preferred polymer is polyvinyl alcohol. Preferably, the level of polymer in the substrate is at least 60%.

[0016] An example of commercially available water-soluble films are PVA films known under the trade reference Monosol M8630, as sold by Chris-Craft Industrial Products of Gary, Ind., US, and PVA films of corresponding solubility and deformability characteristics. Other films suitable for

use herein include films known under the trade reference PT film or the K-series of films supplied by Aicello, or VF-HP film supplied by Kuraray.

Coating

[0017] The water-soluble portion has a coating applied thereto. The coating can be water soluble. However it is not as water soluble as the water-soluble portion. Preferably, the coating is water-insoluble. With "water-insoluble", it is meant that the solubility is less than 50 weight % as measured according to the previously described method. Preferably the coating has a water-solubility of less than 40 weight %, more preferably less than 30 weight %, and most preferably less than 10 weight %. The water-insoluble material may be a water-insoluble inorganic material or a water-insoluble organic material. The water-insoluble material may also be a synthetic polymer. Examples of such materials are described in co-pending U.S. Patent Application No. 60/856,581 (P&G Case CM3111P2). The coating provides the water-soluble substrate with improved resistance to accidental water-contact to avoid that the container would prematurely dissolve and that the product composition would leak out of the container.

[0018] Suitable coatings can be in the form of a homogenous layer (e.g. in the form of a substantially continuous film), as described in co-pending U.S. Patent Application No. 60/856,581 (P&G Case CM311P2), which is incorporated herein by reference.

[0019] The coating can also be in the form of particles, as described in co-pending U.S. Patent Application No. 60/818,693 (P&G Case CM3112FP), which is incorporated herein by reference. The particles preferably have an average diameter of 500 micrometers or less, more preferably 300 micrometers or less, even more preferably from 0.01 to 300 micrometers. Most preferably, the particles are in the nano-size-range, with average particle diameters of from 0.01 to 1 micrometer. Coating the water-soluble substrate 10 with nano-sized particles further provides the benefit that the coating becomes transparent, which is aesthetically preferred.

[0020] The coating can also be in the form of a pH-sensitive coating such as described in co-pending U.S. Patent Application No. 60/856,578 (P&G Case CM3113P2), which is incorporated herein by reference.

[0021] The coating can also be applied in discrete zones or coatings such as described in co-pending U.S. Patent Application No. 60/856,468 (P&G Case CM3114P2), which is incorporated herein by reference. As such, visually appealing patterns can be created.

[0022] The coating can also be in the form of a flexible coating such a described in co-pending U.S. Patent Application No. 60/818,689 (P&G Case CM3115FP), which is incorporated herein by reference, or in the form of a multi-layer coating such as described in co-pending U.S. Patent application No. 60/856,580 (P&G Case No. CM3116P2), which is incorporated herein by reference.

[0023] The coating can also be in the form of glass beads such as described in co-pending U.S. Patent Application No. 60/818,691 (P&G Case CM3117FP), which is incorporated herein by reference.

[0024] The water-soluble portion has an inner surface and an opposite outer surface, and a thickness inbetween the inner surface and the outer surface. The inner surface is the surface of the water-soluble portion which faces inwards into the container, while the outer surface forms the outside surface of the container. The coating can be applied to the inner surface, to the outer surface, or to both surfaces.

Indicator

[0025] The water-soluble portion comprises at least one indicator. The indicator is selected from the group consisting of a visual indicator, a tactile indicator, a sound indicator, or combinations thereof. The indicator can provide an aesthetic effect, provide a signal to a user, communicate a message to a user, elicit a certain emotional experience (e.g. fun), or any combination thereof. The indicator can be two-dimensional or three-dimensional. In a preferred embodiment, the indicator connotes the properties or the use of the article and/or product composition.

[0026] Visual indicators are experienced by the human eye, including a single color, a combination of different colors, shades of colors, textual information such as a word, combination of words, or any graphical representation such as illustrations, photographs, or drawings, and combinations thereof. Visual indicators on the water-soluble portion can be made using inks, dyes, or pigment containing compositions. The inks, dyes or pigment containing compositions can be applied on the water-soluble portion by means of any coating process, including spray, knife, rod, kiss, slot, painting, printing and mixtures thereof. Printing is preferred for use herein. They can also be made by applying particles which create some three-dimensional effect which can be distinguished by the human eye from a distance of about 30 cm. The particles can be applied in the form of a powder using a jet, or electro-statically. Alternatively, a binder may be used. The particles can also be applied in the form of a solution by means of any coating process, including spray, knife, rod, kiss, slot, painting, printing and mixtures thereof. Printing is preferred for use herein. Non-limiting examples of a visual indicator include: a single color or a combination of colors contrasting with the color(s) of the product composition inside the container; a single color or a combination of colors similar (e.g. a slightly different tone or shade) or equal to the color(s) of the product composition inside the container; a single color or a combination of colors creating a visual effect through color interference with other colors of the product composition or other portions of the article (e.g. an air bubble inside the container); graphic elements such as stripes, circles, dots; a single color, a combination of colors, a graphical or a textual representation connoting the properties of the product composition such as for example cleaning power (e.g. bubbles), softness, aroma, freshness, taste or scent; an instruction or a set of instructions e.g. of how to use the article via text, a single graphic or an array of graphics; a logo; the manufacturer's name; the name of a particular ingredient, e.g. bleach; a character, for example a cartoon character depicting how to use the article; a three-dimensional surface may connote the deep cleaning properties of the product composition; or combinations thereof.

[0027] In a highly preferred embodiment, the indicator is an active graphic. By the term "active graphic" it is meant a graphic which is disappearing, fading, appearing, reappearing or otherwise changing depending on changing environmental conditions, including in use. Examples of triggers for activating the indicator include temperature, pH, natural light, ultraviolet light, touch, water, or combinations thereof. Examples of active visual indicators are water-soluble inks, heat-sensitive inks, pH-sensitive inks, and mixtures thereof.

[0028] Tactile indicators are experienced by touch. Non-limiting examples of a tactile indicator include a rough surface to connote for example the scrubbing power or the soil removal properties of the product composition; a soft surface to connote for example that the product composition is gentle to the skin, does not comprise aggressive ingredients, or is protective for fabrics or hard surfaces. Tactile indicators on the water-soluble portion can be made by applying particles, or by applying a coating composition that provides the desired feel when it has been dried. The particles or composition may be applied according to the methods previously described. Examples of inks which can be used to create tactile indicators are AquaRuff and AquaPuff water based inks from Polytex Environmental Inks (New York, U.S.A.).

[0029] Sound indicators are experienced by the human ear. One examples of a sound indicator is an indicator which generates a scratching sound when the article is handled or touched, for example to indicate the scrubbing power of the product composition. This can be achieved by applying for example rough particles. Another example of a sound indicator is an indicator generating a fizzing noise when contacting water (for example to indicate that the product composition is active). Chemicals which provide such an effect are well known in the art.

[0030] The water-soluble portion comprises at least one indicator selected from a visual, a tactile or a sound indicator, but preferably comprises a combination of indicators selected from one category (i.e. only visual, only tactile, only sound) or selected from at least 2 of these categories.

[0031] The indicators can be formed or applied in various ways.

[0032] In a first embodiment, the indicator can be printed or applied to the coating of the water-soluble portion. Alternatively, the indicator can be printed or applied to the opposite surface of the water-soluble portion having the coating applied thereto. The indicator may be present at the outer surface of the container, or it may be present at the inner surface of the container. In the latter, a transparent or translucent coating is preferred such that the indicator is visible through the coated water-soluble portion.

[0033] In a second embodiment, the indicator can be integrated into, or form part of the coating. For example, a coating of glass beads filled with a coloured composition may be used to create aesthetic effects. Another example is using a multi-layer coating. Here, a first coating layer is applied to the water-soluble substrate. One or more graphics are then applied to the first coating layer. A second, transparent, coating layer is then applied on top of the printed first coating layer. An advantage of indicator being integrated into the coating is that the indicator itself is resistant to dissolution. This is especially of interest where the indicator is a graphic made of water-soluble dyes.

Methods of Making a Water-Soluble Substrate

[0034] There are numerous non-limiting embodiments of the method of making the water-soluble substrate described herein.

[0035] In one embodiment, the method comprises providing a previously formed water-soluble substrate and applying a coating to at least one of the surfaces of the previously formed water-soluble substrate.

[0036] The coating can be applied to the previously formed water-soluble substrate in a number of different manners. In one non-limiting embodiment, the coating is applied to at least one of the surfaces of the previously formed water-soluble substrate in the form of particles or a powder. Preferably, the particles or the powder are applied to the water-soluble substrate via a jet, or electro-statically. Due to the high speed of the jet, some of the particles or powder is embedded into the substrate, thereby reducing, or even eliminating the need for using a binder. Also when the particles or powder are applied electrostatically, a binder is generally not needed. Nevertheless, a binder may be used. The binder may first be applied to the water-soluble substrate, before the particles or powder is applied. Or, alternatively, the binder may be mixed with the particles or powder, and then the mixture is added to the water-soluble substrate.

[0037] In another non-limiting embodiment of the method, the coating is provided in the form of a solution that is applied onto at least one of the surfaces of the water-soluble substrate, and is allowed to dry, or undergoes a drying process. The solution can be applied on the film by means of any coating process, including spray, knife, rod, kiss, slot, painting, printing and mixtures thereof. Printing is preferred for use herein. Printing is a well established and economic process. Printing is usually done with inks and dyes and used to impart patterns and colours to substrates but in the case of the invention, printing is used to deposit the less water-soluble material onto a water-soluble substrate. Any kind of printing method can be used, including rotogravure, lithography, flexography, porous and screen printing, inkjet printing, letterpress, tampography and combinations thereof.

[0038] These embodiments may also comprise a step of wetting at least a portion of at least one of the surfaces of the water-soluble substrate prior to applying the coating to the previously formed water-soluble substrate. The wetting of at least one of the surfaces of the water-soluble substrate may be used to at least partially dissolve or solubilize an outer portion of the surface of the substrate (that is, part of the way into the thickness of the substrate). The water-soluble substrate may be at least partially solubilized to any suitable depth in order to partially embed the coating into the substrate. Suitable depths include, but are not limited to: from about 1% to about 40% or about 45%, from about 1% to about 30%, from about 1% to about 20%, from about 1% to about 15%, and alternatively, from about 1% to about 10% of the overall substrate thickness. The coating is then applied to the partially dissolved portion of at least one of the surfaces of the substrate. This allows the coating to be embedded into an outer portion of the surface of the substrate, and to become a more permanent part of the substrate. The wetted surface of the substrate with the coating embedded into the same is then permitted to dry. Such an embodiment of the method may also comprise a step of removing at least some of any loose or excess coating remaining on the surface of the water-soluble substrate after it has dried, such as by wiping or dusting the surface of the substrate.

[0039] In another embodiment, the coating can be added to the water-soluble substrate after the substrate is made into a product. For example, if the water-soluble substrate is used to form a water-soluble pouch that contains a composition, the coating can be added to the substrate on at least a portion of the surface of the water-soluble pouch.

[0040] In another non-limiting embodiment of the method, the coating is applied in multiple application steps. A first coating layer is applied to the water-soluble substrate according to any of the above methods, and is optionally allowed to dry. Subsequently, one or more additional coating layers may be added until the desired coating thickness is

obtained, and are optionally allowed to dry. As such, relatively thick coatings can be created on thin water-soluble substrates.

[0041] In another non-limiting embodiment of the method, a coating layer may be formed separately, after which it is applied to a surface of the water-soluble substrate.

Article

[0042] For simplicity, the articles of interest herein will be described in terms of water-soluble pouches (i.e. wherein the entire container is water-soluble), although it should be understood that discussion herein also applies to other types of containers.

[0043] The pouches can be of any form and shape which is suitable to hold the composition contained therein, until it is desired to release the composition from the water-soluble pouch, such as by immersion of the water-soluble pouch in water. The pouches can comprise one compartment, or two or more compartments (that is, the pouches can be multi-compartment pouches). In one embodiment, the water-soluble pouch may have two or more compartments that are in a generally superposed relationship and the pouch comprises upper and lower generally opposing outer walls, skirt-like side walls, forming the sides of the pouch, and one or more internal partitioning walls, separating different compartments from one another. If the composition contained in the pouches comprises different forms or components, the different components of the composition may be contained in different compartments of the water-soluble pouch and may be separated from one another by a barrier of water-soluble material.

[0044] The pouches or other containers contain one or more compositions for use as/in laundry detergent compositions, automatic dishwashing detergent compositions, hard surface cleaners, stain removers, fabric enhancers and/or fabric softeners, food and beverage. The composition in the pouches can be in any suitable form including, but not limited to: liquids, liquigels, gels, pastes, creams, solids, granules, powders, etc. The different compartments of multi-compartment pouches may be used to separate incompatible ingredients. For example, it may be desirable to separate bleaches and enzymes into separate compartments. Other forms of multi-compartment embodiments may include a powder-containing compartment in combination with a liquid-containing compartment. Additional examples of multiple compartment water-soluble pouches are disclosed in U.S. Pat. No. 6,670,314 B2, Smith, et al.

[0045] The water-soluble pouches may be dropped into any suitable aqueous solution (such as hot or cold water), whereupon water-soluble substrate forming the water-soluble pouches dissolves to release the contents of the pouches.

[0046] There are a number of processes for making water-soluble pouches. These include, but are not limited to processes known in the art as: vertical form-fill-sealing processes, horizontal form-fill sealing processes, and formation of the pouches in molds on the surface of a circular drum. In vertical form-fill-sealing processes, a vertical tube is formed by folding a substrate. The bottom end of the tube is sealed to form an open pouch. This pouch is partially filled allowing a head space. The top part of the open pouch is then subsequently sealed together to close the pouch, and to form the next open pouch. The first pouch is subsequently cut and the process is repeated. The pouches formed in such a way usually have pillow shape. Horizontal form-fill sealing processes use a die having a series of molds therein. In horizontal form-fill sealing processes, a substrate is placed in the die and open pouches are formed in these molds, which can then be filled, covered with another layer of substrate, and sealed. In the third process (formation of pouches in molds on the surface of a circular drum), a substrate is circulated over the drum and pockets are formed, which pass under a filling machine to fill the open pockets. The filling and sealing takes place at the highest point (top) of the circle described by the drum, e.g. typically, filling is done just before the rotating drum starts the downwards circular motion, and sealing just after the drum starts its downwards motion.

[0047] In any of the processes that involve a step of forming of open pouches, the substrate can initially be molded or formed into the shape of an open pouch using thermoforming, vacuum-forming, or both. Thermoforming involves heating the molds and/or the substrate by applying heat in any known way such as contacting the molds with a heating element, or by blowing hot air or using heating lamps to heat the molds and/or the substrate. In the case of vacuum-forming, vacuum assistance is employed to help drive the substrate into the mold. In other embodiments, the two techniques can be combined to form pouches, for example, the substrate can be formed into open pouches by vacuum-forming, and heat can be provided to facilitate the process. The open pouches are then filled with the composition to be contained therein.

[0048] The filled, open pouches are then closed, which can be done by any known method. In some cases, such as in horizontal pouch-forming processes, the closing is done by continuously feeding a second material or substrate, such as a water-soluble substrate, over and onto the web of open pouches and then sealing the first substrate and second substrate together. The second material or substrate can comprise the water-soluble substrate 10 described herein. It may be desirable for the surface of the second substrate onto which the coating is applied, to be oriented so that it forms an outer surface of the pouch.

[0049] In such a process, the first and second substrates are typically sealed in the area between the molds, and, thus, between the pouches that are being formed in adjacent molds. The sealing can be done by any method. Methods of sealing include heat sealing, solvent welding, and solvent or wet sealing. The sealed webs of pouches can then be cut by a cutting device, which cuts the pouches in the web from one another, into separate pouches. Processes of forming water-soluble pouches are further described in U.S. patent application Ser. No. 09/994,533, Publication No. US 2002/0169092 A1, published in the name of Catlin, et al.

Package

[0050] According to another aspect, the present invention relates to a package comprising at least one article as described hereinbefore.

[0051] In a first embodiment, at least a portion of the package is transparent, the package comprises an opening allowing to inspect the article(s) contained therein, or combinations thereof.

[0052] In a second embodiment, the package comprises a first article which comprises a first product composition, a second article which comprises a second product composition different from the first product composition. Optionally, the package may comprise further articles comprising further product compositions all of which are different from the other product compositions inside the package. The package may comprise a series of articles wherein the product compositions provide for example different cleaning performance. In another example, the package may comprise a

series of articles for different use purposes (e.g. different type of fabric treatment compositions such as fabric enhancer, fabric softener, bleach containing composition for though cleaning, fabric conditioner, . . .).

[0053] In a third embodiment, the package comprises a first article which comprises a first indicator, a second article which comprises a second indicator different from the first indicator. Optionally, the package may comprise further articles comprising further indicators all of which are different from the other indicators inside the package. For example, the package may comprise a series of articles, each printed with a unique graphic. The combination of unique graphics may provide a message such as user instructions, form a logo or a brand name, or may create a cartoon or fun graphics. In another example, the different articles may comprise different tactile indicators, to connote the different properties of the compositions therein, such as a series of soft-to-abrasive indicators.

[0054] Also, any of the above embodiments may be combined.

EXAMPLES

[0055] A nano-sized (approx. 0.1 micron size) PTFE coating, supplied by Shamrock Technologies (Newark, N.J.) under the tradename NanoFlon W50C, is dispersed in water (15% NanoFlon W50C, 85% water) and printed onto a standard 3 mil polyvinyl alcohol-based water-soluble substrate supplied by Monosol. The nano-particles are small enough to not refract the incident light, hence the coated water-soluble substrate has the same appearance than the uncoated water-soluble substrate (completely clear, non-hazy).

Droplet Test Method

[0056] To determine if a substrate is resistant to accidental water contact a proplet Test method has been developed. In this test, a pouch (approx. 2"×2") is formed in a cavity and a droplet of 0.2 ml of room temperature water is added to the formed side of the pouch. The formed side is the stressed case for this test since the film is thinned during cavity formation. A stopwatch is started as soon as the water contacts the pouch and the time when significant film deformation in the body of the pouch is observed, is recorded. This time, termed "Time to Deform" is a precursor to film failure.

Results

[0057]

Material	Stretched test Time to Deform
Uncoated M8630 standard film supplied by Monosol	Immediate (1 sec)
NanoFlon W50C coated on standard M8630	No deformation

[0058] Importantly, the hydrophobic nano-sized material is coated at extremely low levels (0.2 grams/m^2) and it does not affect the overall film solubility (full bath test). Even if at very low levels, due to the nano-sized nature, the exposed surface area is very high.

Full Solubility (full bath).

[0059] Film is immersed in an agitated 23° C. water bath and the time to completely (visually) dissolve the film is recorded.

Results

[0060]

Material	Film Solubility (full bath)
Uncoated M8630 film by Monosol, 3 mil thickness	49 seconds
NanoFlon W50C coated on standard M8630	52 seconds

[0061] A pouch can be made using the above coated substrate, and can then be printed with dyes in order to create visual effects.

[0062] The dimensions and values disclosed herein are not to be understood as being strictly limited to the exact numerical values recited. Instead, unless otherwise specified, each such dimension is intended to mean both the recited value and a functionally equivalent range surrounding that value. For example, a dimension disclosed as "40 mm" is intended to mean "about 40 mm."

[0063] All documents cited in the Detailed Description of the Invention 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. To the extent that any meaning or definition of a term in this document conflicts with any meaning or definition of the same term in a document incorporated by reference, the meaning or definition assigned to that term in this document shall govern.

[0064] 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.

What is claimed is:

1. An article comprising:

a. a composition

b. a container containing said composition, said container comprising a water-soluble portion having a coating applied thereto;

wherein said water-soluble portion comprises at least one indicator selected from the group consisting of a visual indicator, a tactile indicator, a sound indicator, or combinations thereof.

2. An article according to claim **1**, wherein said at least one indicator connotes the properties or with the use of the product composition in said container.

3. An article according to claim **1**, wherein said at least one indicator is two-dimensional.

4. An article according to claim **1**, wherein said at least one indicator is three-dimensional.

5. An article according to claim **1**, wherein said visual indicator is an active graphic.

6. An article according to claim **5**, wherein the active graphic is activated by temperature, pH, natural light, ultraviolet light, touch, water, or combinations thereof.

7. An article according to claim **1**, wherein said water-soluble portion comprises an inner surface and an opposite outer surface, and wherein said coating and said at least one indicator are applied to said inner surface or said outer surface.

8. An article according to claim **1**, wherein said water-soluble portion has an inner surface and an outer surface, and wherein said coating is applied to said inner or said outer surface, and wherein said indicator is applied to the other surface.

9. An article according to claim **1**, wherein said at least one indicator is incorporated into said coating.

10. An article according to claim **1**, wherein said composition is selected from a laundry detergent composition, a fabric care composition, a dishwashing detergent composition, a hard surface cleaning composition, a food composition, or a beverage composition.

11. An article according to claim **1**, wherein said container comprises a unit-dose of said composition.

12. An article comprising:

a. a composition

b. a container containing said composition, said container comprising a water-soluble portion;

wherein said water-soluble portion comprises an active graphic.

13. A package comprising at least one article according to claim **1**, wherein:

a. at least a portion of said package is transparent; or

b. said package comprises an opening allowing to inspect the article contained therein; or

c. a combination thereof.

14. A package comprising:

a. a first article according to claim **1**, said first article comprising a first composition;

b. a second article according to claim **1**, said second article comprising a second composition different from said first composition;

c. optionally one or more further articles according to claim **1**, said one or more further articles each comprising a further composition which is different from said other compositions.

15. A package comprising:

a. a first article according to claim **1**, said first article comprising at least one first indicator;

b. a second article according to claim **1**, said second article comprising at least one second indicator different from said first indicator;

c. optionally one or more further articles according to claim **1**, said one or more further articles each comprising at least one further indicator which is different from said other indicators.

* * * * *