Caribbean Community

EDICT OF GOVERNMENT

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CRS 16 (2010) (English): Botanical Cosmetics

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CARICOM REGIONAL STANDARD

Specification for botanical cosmetics

CRS 16: 2010

Caribbean Community

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Committee representation

This CARICOM Regional Standard was prepared under the supervision of the Regional Technical Committee for Cosmetics (RTC 5) (hosted by the CARICOM Member State, Jamaica), which at the time comprised the following members:

Members	Representing
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Mrs. Bevene Alvaranga	National Association of Hairdressers and Cosmetologists
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Acknowledgment

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Foreword

This CARICOM Regional Standard was designed to outline general requirements for the manufacture or preparation of botanical cosmetics used and traded within the Caribbean Community.

This standard was approved by the Twenty-ninth Council for Trade and Economic Development (COTED) on 8-9 February 2010.

In the development of this standard, assistance was derived from the following:

a) Bureau of Indian Standards Draft Indian Standard, PCD 19 (2157) C, General Guidelines for formulating Cosmetics with Herbs, 2006;

b) Jamaican Standard, JS 170:1989, Specification for Cosmetics Part 1: General requirements;

c) www.aromaticsandmore.com, Specialty Cosmetics Ingredients and Cosmetic Ingredient Information.

1 Scope

This standard specifies the general requirements for the manufacture of botanical cosmetic products and is applicable where the term “Botanical Cosmetics” is declared on the package.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CARICOM Regional Standard for the Labelling of Pre-packaged Goods

3 Terms and definitions

For the purposes of this standard, the following terms and definitions shall apply.

3.1
adulterant
any substance that reduces the purity or effectiveness of a substance including pesticides, noxious chemicals and extraneous matter such as insect parts and debris

3.2
active constituent
chemical constituent in a botanical raw material that is responsible for the intended aesthetic or therapeutic effect

3.3
botanical cosmetic
finished, labelled product that contains plant material as active ingredients and does not contain animal matter nor is toxic to animals

3.4
botanicals
botanical product
finished, labelled product that contains one or more of the following plant extracts:

a) fresh herbs or juices or pastes made from whole or part(s) of plants;

b) dried powdered plants; and or

c) extracts from plants including fixed oils or fats and distillates or essential oils

3.5
botanical ingredient
component of a botanical cosmetic that originates from a plant raw material

3.6
botanical raw material
fresh or processed plant or part of a plant as well as exudates.

EXAMPLE 1 Examples of processing include cleaning, freezing, drying, and slicing

EXAMPLE 2 Examples of parts of the plant include bark, wood, leaves, stems, roots, flowers, fruits, seeds, and berries

3.7
chromatographic fingerprint
chromatographic profile of a botanical raw material that is matched qualitatively and quantitatively against that of a reference sample or standard to ensure the identity and quality of a batch and consistency from batch to batch

3.8
cosmetic
substance intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body or any part thereof for cleansing, beautifying, promoting attractiveness, or enhancing the appearance or an article intended for use as a component of any such article

3.9
foreign matter
any objectionable substance that is not a part of the formulation of the botanical cosmetic

EXAMPLE hair, sand, insect parts etc

3.10
formulation
formula that lists the components or ingredients and composition of the product

NOTE The components and composition of a multi-herb botanical drug substance should be part of the total formulation.

3.11
marker
chemical constituent of a botanical raw material that is used for identification and or quality control purposes, especially when the active constituents are not known or identified

3.12
plant
member of the kingdom *Plantae* comprising multicellular and unicellular organisms that characteristically lack the power of locomotion, produce their own food from inorganic matter by the process of photosynthesis and that have more or less rigid cell walls containing cellulose and secondary metabolites

4 General requirements

4.1 General

4.1.1 Botanical cosmetics shall comply with the definitions of cosmetic as defined in this Standard or any other relevant legislation of Member States.

4.1.2 No cosmetic shall contain any substance that may cause injury to the health of the user when the cosmetic is used:

a) according to the direction on the label accompanying such cosmetic; or

b) for such purpose and by such method of use as are customary or usual.

4.1.3 Products shall not consist in whole or in part of any filthy or decomposed substance or of any foreign matter.

4.1.4 Cosmetics shall not be prepared, manufactured, preserved, packaged, stored or sold in unhygienic or under unsanitary conditions.

4.1.5 No person shall label, package, sell or advertise any substance as a botanical cosmetic unless it conforms to the requirements of this standard.

4.1.6 No animal testing shall be performed or commissioned when the composition of the manufactured substances is not known.

4.2 Preservative

4.2.1 To ensure that products are microbiologically safe, the following nature-identical preservatives are allowed in addition to natural preservatives:

a) benzoic acid, its salts and ethyl ester;

b) salicylic acid and its salts;

c) sorbic acid and its salts; and

d) benzyl alcohol.

4.2.2 When the preservatives in 3.2.1 are used, products shall be labelled “preserved with [name of preservative]”.

5 Raw materials

5.1 All raw materials shall comply with the requirements of this standard and the requirements of the relevant authority in the country in which the product is being manufactured and or sold.

5.2 Ingredients for botanical cosmetics shall not contain any substance that may cause infection or otherwise make the use of the cosmetics a potential health hazard.

5.3 Raw materials obtained from plants shall be used from:

a) controlled biological cultivation, taking quality and availability into account; or

b) controlled biological wild collections.

5.4 Raw materials and primary packaging materials shall be stored and handled in a manner which prevents their mixing, contamination with micro-organisms or other adulterants, or decomposition from exposure to excessive heat, cold, sunlight or moisture, or infestation by rodents and insects.

5.5 Containers of raw materials shall be stored according to best practices such as closed, bagged or boxed. Storage shall be on pallets at least 10 cm off the floor and at least 15 cm away from the walls.

5.6 Containers of raw materials shall be labelled with respect to lot identification and control status.

5.7 Raw materials shall be sampled and tested in accordance with procedures assuring the absence of adulteration of the finished product.

5.8 Raw materials not meeting the specifications of this standard shall be properly identified and controlled to prevent their use in cosmetics.

6 Selection of botanicals ingredients

Manufacturers shall carefully select botanical ingredients based on their known and reported properties (in literature), properties known in cultural heritage or traditional use and usage reported in

traditional literature. Manufacturers shall also apply adequate care in selecting the forms in which the botanicals would be used as an 'ingredient' in the finished products. Manufacturers may use a botanical ingredient for purposes other than those previously known, provided that adequate data is available.

7 Compositional requirements

Manufacturers shall have adequate data justifying the proportion of the botanical or the botanical ingredient used in the product, and for which claims are made. In the absence of scientific data on the quantity of botanicals to be used in a product to provide the intended cosmetic benefits, such data shall be based on known knowledge, published literature, reported knowledge in traditional literature and or scientifically generated data using appropriate in-vitro and or in-vivo (clinical) methods.

8 General claims

8.1 No manufacturer or marketer shall make any cosmetic claim which is false, exaggerated or misleading and which is not delivered by the product.

8.2 The cosmetic benefit claims made for products shall be true, factual and based on the data in possession of the manufacturer. Such data shall be based on known knowledge, published literature, knowledge reported in traditional literature, scientifically generated data using appropriate in-vitro and or in-vivo methods.

9 Quality assurance

9.1 General

9.1.1 Manufacturers shall adopt necessary quality assurance techniques when using botanical ingredients. Adequate raw material quality control shall be adopted each time a botanical ingredient is used.

9.1.2 Records of the use of raw materials shall be maintained and duly authenticated by the Production and Quality personnel. For each botanical ingredient, a bill of certificate, a certificate of analysis or similar documentation duly authenticated by the Production and Quality personnel shall be maintained.

9.1.3 Written procedures shall be available for the use of botanical ingredients and records shall be maintained to display application of and compliance to procedures.

9.2 Laboratory control

9.2.1 Raw materials, in-process samples and finished products shall be tested or examined to verify their identity and determine their compliance with specifications for physical and chemical properties and microbial contamination, as well as for hazardous or other unwanted chemical contaminants normally associated with the raw material.

9.2.2 Reference samples of approved lots or batches of raw materials and finished products shall be retained for at least the shelf life of the product and shall be stored under conditions that protect them against contamination or deterioration. These shall be retested for continued compliance with established acceptance specifications.

9.2.3 The water supply shall be tested regularly for its conformity with physical, chemical, and microbiological specifications according to national regulations.

9.2.4 Fresh as well as retained samples of finished products shall be tested for microbial contamination to determine adequacy of preservation under recommended conditions of storage and consumer use.

10 Shelf-life data

10.1 Manufacturers may adopt suitable shelf life study protocols which ensure product integrity throughout the intended shelf-life period. Visible signs of degradation such as fermentation, rancidity, change in colour, and such other tests as applicable to the product, shall be used to prove the stability of the product. Samples of the product exposed to pre-decided exigent conditions of storage shall also be tested for confirming the claimed cosmetics benefits.

10.2 The Chromatographic Fingerprinting technique or any other suitable method would be acceptable while generating shelf-life data. Stability of botanical ingredients proven in a cosmetics formulation base may be justified and extrapolated to cosmetics with similar base formulation but with changes within normal tolerances of the proven product.

11 Safety information

11.1 Manufacturers shall ensure that the finished product is safe. Results of safety data studies shall be available to investigators whenever required.

11.2 Manufacturers and or marketers shall suitably inform the consumer on the labels of such products, if there are any precautions to be taken while using the products which are known to have shown safety concerns in a specific individual or population.

11.3 Water used in cosmetics formulation shall meet the requirements for microbiological safety of the country of origin.

NOTE 1 In considering the safety of botanical ingredients used in cosmetics and personal care products, it is important to consider the specific botanical material, the amount of the botanical in the raw material and finished product, and the route of exposure. Most applications of botanical ingredients in cosmetics are topical.

NOTE 2 In selecting botanical ingredients for preparation of cosmetic products, formulators take into account the extensive history of their preparation and use. Plant materials have been used for decades or even centuries and, based upon the human experience with these botanical ingredients, knowledge of their safety has been gained.

12 Prohibited ingredients

Botanical cosmetics shall be formulated using only permissible cosmetic ingredients. Botanical cosmetics shall only contain ingredients approved by local, regional or international authorities.

NOTE A comprehensive list of prohibited and restricted ingredients exists internationally which is updated on a regular basis.

13 Labelling

13.1 All labelling shall comply with the requirements of the most recent version of the CARICOM Regional Standard for the Labelling of Pre-packaged Goods.

13.2 A cosmetic product shall only claim to be “botanical”, “natural” or “herbal” or claim plant material as an ingredient if it conforms to this standard.

14 Packaging

14.1 Packaging shall:

a) contain and securely hold a stated quantity of product without leaking, seeping or oozing;

b) keep the product clean and free from physical, chemical and microbiological contamination;

c) protect the product from loss of quality by evaporation of perfume and other volatile ingredients and against oxidation and other chemical reactions; and

d) have a tamper resistant feature.

14.2 Products and their packages shall be protected from mechanical damage.

14.3 The tamper resistant feature shall remain intact when handled in a reasonable manner during manufacture, distribution and retail display. To prevent substitution of the tamper resistant feature after tampering, the indicator or barrier to entry shall be distinctive by design such as for an aerosol container, or by the use of an identifying characteristic.

Annex A
(informative)

Specialty cosmetic ingredients - botanical extracts

Plants have been of medicinal importance as far as memory goes back. They contain an extensive range of chemical compounds of varying forms and stability. The most common classifications consist of the following:

Alkaloids: These nitrogenous compounds possess potent physiological activity. The names of alkaloids will end in "ine", such as atropine, quinine, morphine. They appear in many families of flowering plants and are found in most all parts of the plant.

Balsams: These are resinous substances that contain various amounts of aromatic balsamic acids.

Carbohydrates: Compounds that contain elements such as carbon, hydrogen and oxygen. In cosmetic and pharmaceutical preparations they have a variety of uses. They are broadly classified as monosaccharide, oligosaccharide, polysaccharide, and derived carbohydrates. They can be used as binders, gelling agents, stabilizers and thickeners.

Glycosides: These substances are extracted during hydrolysis and yield one or more sugars. The non-sugar part of the molecule is called the aglycone and the sugar component is called the glycone. The function of these substances in plants is to regulate, detoxify and defend. Glycosides possess important pharmacological activity.

EXAMPLE Digitoxin is a cardiac stimulant, and salicin is an analgesic

Lipids: Fixed oils, fats, or waxes. In most cases the lipids are stored in the seeds, the spores, or the bulb. The fats in fixed oils are esters of long chain fatty acids such as stearic acid, palmitic acid and oleic acid, combined with a trihydric alcohol, glycerol. They are more commonly known as triglycerides.

Mucilage: These are usually off white viscous masses and are often applied by medical herbalists to soothe irritated skin. They are not readily absorbed by the skin and tend to be local in action.

Phenols: Compounds of one or more hydroxyl group directly attached to a carbon atom or aromatic nucleus. In plants they are usually found combined with a sugar or glycoside. They are water soluble and mildly acidic.

Proteins: Proteins are derived from amino acids which are the building units. They are found in plants in addition to animals and are important because they possess therapeutic activity.

Resins: This group of solid or semi-solid substances has a complex chemical nature. They do have some common characteristics but a strict definition of a resin is not possible. As a class they are generally hard, transparent or semi-transparent brittle substances. They are generally heavier than water and upon heating become fluid. Some resins are acidic and when heated with alkalis become soaps. Resins in homogenous mixtures with volatile oils are known as oleoresins.

Tannins: A large group of substances found in plant parts such as the fruit, bark, leaf, stem, and roots. They are generally water soluble and astringent in nature.

Volatile Oils: These oils are more widely known as essential oils. In some plants the volatile oils may occur in all the plant tissues. In other plants, such as the rose, they occur mostly in the petals. In most cases oils obtained from different organs of the same species will have similar characteristics. In other plants oils from different organs contain different characteristics. Essential oils play an important role

because of their therapeutic actions. In addition to their use as flavourings they can be used as stimulants, diuretics, antiseptics, local irritants, and as pesticides.

Annex B
(informative)

Cosmetic ingredient information

Acacia Gum: Also know as gum Arabic, it is derived from the acacia tree and is widely used in the food and confectionery industry. In cosmetics it is used to stabilize emulsions and improve texture. It may also be used as a fixative and base when making incense.

Alkanet Root: A natural colourant derived from alkanet root infused in oil. It is purple to pink in colour.

Almond Oil Sweet: A favourite for oil for aromatherapy or used on its own for moisturizing the skin. It is lubricating but not very penetrating and is known to be especially suitable for eczema and dry itchy skin. For soap making add 28.35 g per 0.45 kg of fats. This oil goes rancid quickly.

Aloe Vera Liquid: 85 % aloe vera. A clear liquid from the aloe plant that has healing properties and is used for troubled skin.

Aloe Vera Gel: 99.9 % aloe vera extract in a thick carbomer based gel. It has healing properties and is used for troubled skin.

Ammonium Lauryl Sulphate: A mild surfactant with good foaming capabilities used in high classed and mild cleansing products. It is derived from coconut alcohols, has a low pH and will emit an ammonia odour if the pH is raised above neutral. Citric acid may be used to bring the pH back down.

Annatto: An oil soluble natural colourant derived from annatto seed infused in an oil base. It is yellow-orange in colour.

Apricot Kernel Oil: This is a light, rich oil especially good for sensitive skin. It is often found in lip balms and creams and is high in Vitamin A. It may be used alone or in massage. For soap making, 28.35 g to 56.7 g should be added per 0.45 kg of fat.

Avocado Oil Unrefined: This rich oil nourishes and restores dry dehydrated skin. It has a natural avocado colour that is imparted to the products it is used in. It is a therapeutic oil high in unsaponifiables and rich in Vitamins A, B1, B2, D and E, protein and panothenic acid. It best blended with other oils for massage.

Bentonite: A clay like powder derived from weathered volcanic ash. The commercial name is montmorillonite and it has many medicinally active ingredients. It is used both externally and internally as a detoxifying agent.

Benzoin Tincture: This ready-to-use tincture may be used in soap making as a fragrance fixative or as a preservative or in lotions at 0.5 %. It is comprised of a ratio of 5 : 1 Benzoin Gum to Ethyl Alcohol.

Bicarbonate of Soda (Baking Soda): A gently alkaline white powder that neutralizes acids. When mixed with acids such as vinegar or citric acid carbon dioxide is produced. It is commonly used as a skin soother, deodorant, and tooth powder.

Borax (Sodium Borate): Used as a water softener and laundry product. Like baking soda it has many cleaning uses. Used in combination with beeswax it forms a kind of soap that acts as an emulsifier in creams. Typical ratio of beeswax to borax is 16 : 1 to 20 : 1.

Burdock Root: Test tube experiments have shown Burdock root to have antibacterial and anti fungal properties. The active antibacterial principle was isolated and partially characterized as a lactone. In personal care products, it is useful for hair and scalp and anti-acne treatments.

Carbomer: Useful for making hair gels, body glitter gels, massage gels and thickening. This is an acrylic-based powder that is used to make thick gel bases and thicken lotions and creams. Non toxic, non-sensitizing, non-irritating, and does not react adversely with the environment. It is very cost effective and takes only 0.5 % to make a thick clear gel (fine powder, wear mask when handling). This product is pH sensitive. The pH needs to be at 7 (neutral) to maintain a gel consistency. To raise the pH and keep the gel clear you may use Potassium Hydroxide flakes or Suttocide A. Suttocide A is a preservative derived from glycine and can be used in carbomers as both a neutralizing agent and a preservative.

Carrot Tissue Oil (*Daucus carota*): A rich orange oil from the roots of carrots infused in Organic Safflower Oil.

Castor Oil: A very moisturizing and lubricating oil that is rich in fatty acids. It acts as a humectant attracting moisture from the air to the skin. Ayurvedic medicine has long used castor oil for lumbago, sciatica and rheumatism. In soap making it is a well-known super fatting agent and is well suited for baby products. It is one of the few oils which is soluble in alcohol.

Cetearyl Alcohol: An emollient, emulsifier, thickener and carrying agent for other ingredients. It is derived from coconut fatty alcohol.

Chamomile Flower (*Athemis nobilis)*: This is one of nature's safest and most effective sedatives. Scientific studies have found that a flavonoid found in Chamomile flowers (apigenin), has anti-histaminic properties. This may be useful in treating dermatitis and rashes. Further double blind studies found that chamomile has a significant effect in decreasing wound area as well as drying the wound out.

Chitosan: This very valuable powder is a by-product of the crabbing or shrimping industry. It is useful as a gel base for personal care products, can be added to sunscreen preparations to render them water resistant, and is an excellent additive to a hair conditioner. It also has antimicrobial properties and is useful in deodorants. Non-toxic, non-sensitizing, non-irritating, and environmentally friendly. Only works as a gel in a pH below 5. It can be tricky to work with in formulas that contain oil.

Chlorophyll liquid: Chlorophyll is a green pigment found in most plants, alga, and cyanobacteria. Chlorophyll is to plant what hemoglobin is to blood: a vital part of healthy life. It is well known for its deodorant and healing properties. It may also be used as a natural safe colourant (green) in body care products.

Citric Acid: Derived from citrus fruit by fermentation of crude sugar, it is used as a preservative, sequestering ingredient and acid-alkali balance. This is the ingredient in bath bombs that makes the water fizz.

Clays Cosmetic: Clay masks offer valuable properties for skin care. While drying, the clay has the ability to draw out impurities from the skin and absorb them. Clay masks may be used to take advantage of the many properties of herbs, essential oils and vitamins. To provide an intensive treatment active botanical substances may added to be absorbed by the skin during application. In soaps therapeutic clays act as an exfoliate and helps absorb toxins. Clay soaps leave a hydrophobic film on the skin's surface, softening and maintaining internal moisture. Use 1 tablespoon per 500 g.

Clay Green: The most absorbing clay, generally used for face masks in cases of acne, oily and neglected skin. It will impart a gray-green colour to soaps and toiletries.

Clay Pink: This clay is intended for a maintenance programme. It refines and softens the skin, is a nice addition to soaps and talcs and imparts a lovely natural pink colour.

Clay Rose: This is an oily and mildly absorbent clay generally preferred for dry or sensitive skin. The high iron oxide content enhances the skin's condition. It is also useful for broken capillaries and bags under the eyes. It imparts a red brick colour to soaps and toiletries.

Cocoa Butter: This butter is prime-pressed with no solvents used for extraction. A good oil for lotions, balms, and soap making. It will give firmness and emollience to lotions, massage bars and lip balms. It is food grade and though it is deodorized it still carries a faint cocoa odour.

Coco Betaine: A mild safe surfactant derived from coconut oil. It is often found coupled with other less mild surfactants such as sodium lauryl sulphate to make a milder shampoo.

Cocomide MEA (**Coconut Monoethanolamide):** A foam booster, stabilizer and opacifier. This widely used fatty acid of coconut comes in a solid white flake form and may be used in bubble baths, bubble cakes and cleansing products to boost the foam. Use at 2 % to 4 %.

Coconut Oil Crude Cold Pressed: A percentage of coconut oil in cosmetics is moisturizing but too much of it may be drying. Its saturated nature resists rancidity and makes a very hard soap while at the same time producing a fluffy lather. Many cultures use coconut oil on their hair and skin for conditioning.

Conditioning Emulsifier (Behenyl Trimethyl Ammonium Methosulfate and Cetearyl Alcohol): A remarkably effective emulsifier, thickener and conditioner for either hair or skin products. It is naturally derived from colza oil and is noted for its exceptional mildness. This conditioner offers valuable properties for formulations by giving body and thickness to emulsion systems, conditioning, softening and emollient effect of skin and hair. In hair conditioners, it imparts excellent body and spring and improves wet combing. In creams and lotions it creates a soft powdery after feel. Use at 2 % to 5 % (oil soluble).

NOTE Heat to the full 75 °C when melting.

Crothix Conditioning Thickener (PEG-150 Pentaerythrityl Testrastearate): A naturally derived thickener that is used in shampoos and body washes. Use at 5 % to 2 %.

NOTE Crothix is an example of a suitable product available commercially. This information is given for the convenience of the users of this standard and does not constitute an endorsement by CROSQ of this product.

Emollients: The natural oils we use in cosmetics that are valuable skin conditioning agents. When possible, natural oils should be cold pressed to yield the valuable added benefits such as vitamins.

Emulsifiers: This is a wide variety of substances, which mix oil and water. In cosmetics the range of emulsifiers is vast.

EXAMPLE When making a mayonnaise the egg yolk acts as the emulsifier

Emulsifying Compound {Glycearyl Stearate (glycerin & stearic acid), Ceteareth 20, Cetereath 12, Cetearyl Alcohol (cetyl alcohol & stearyl alcohol), Cetyl Palmitate(cetyl alcohol & palmitic acid)}: A compound of waxes and alcohols that makes up a more sophisticated and stable lotion or cream than emulsifying wax on its own. It has a pleasant feel and you need add nothing more than water, oil and preservative.

Ethyl Alcohol: A natural source preservative that may be used in creams and room sprays. In shampoos and body washes it may be too drying. If your formula contains 15 % to 20 % alcohol you need no other preservative. Although drying may be a side effect externally, it has no known toxicity and does not irritate the skin. This form of the alcohol should never be taken internally.

Evening Primrose Oil: Pale, yellow oil with a pleasant nutty taste. It is extremely helpful in treating premenstrual problems, eczema and psoriasis. It's healing action results from its high content of gamma lineolic acid, an essential fatty acid that is vital to cell and body functions. This oil goes rancid quickly and should be stored in a cool place or refrigerated.

Echinacea Augustifolia: Also known as "Coneflower", Native Americans believed this plant possessed almost magical healing powers. Recent scientific documentation is showing that this herb is worthy of acceptance as a world-class medicine. In personal care products it is useful for the treatment of severely damaged skin.

Germall® Plus Liquid: A water-soluble chemical preservative now available as a liquid and free from parabens. A patented combination of 99 % Diazolidinyl Urea and 1 % Iodopropynyl Butylcarbamate in propylene glycol. For shampoos usage rates may be as low as 0.25 % and creams as low as 0.5 %.

NOTE Germall® is an example of a suitable product available commercially. This information is given for the convenience of the users of this standard and does not constitute an endorsement by CROSQ of this product.

Glycerin Vegetable: Chemically an alcohol, glycerin is a by-product of soap manufacture. Valuable in cosmetics as a solvent, humectant and emollient. When used as a humectant in creams or lotions use 2 % to 5 %.

Gotu Kola (*Centella asicatica*): Traditional use of this herb has been primarily as a sedative, diuretic, and tonic. It is also used to accelerate the healing of wounds.

Grapefruit Seed Extract (Citricidal): This ingredient is being used as a natural preservative with anti-microbial and anti-fungal properties. Some tests have shown that this extract works best when added to the water phase of your formula for better incorporation. Use at 1.2 % to 2.5 %. It is said to be a very efficient anti-oxidant.

NOTE At present this ingredient has yet to be proven through challenge testing in cosmetics as effective.

Green Tea Extract: A key component of green tea (epigallocatechin gallate) has been found to reduce some forms of human cancer induced by physical and environmental carcinogens. It has strong antioxidant properties and works at protecting against tumor development by attacking and destroying free radicals. It may be as much as 200 times more effective at doing this than Vitamin E. It is a valuable addition to any skin preparation in protecting the skin from environmental and sun damage. Typical usage rate of this pure extract in glycerin is 1 % to 2 % (10 mg/g).

Guarana Seed (*Paullinia cupana)*: The natives of Brazil use Guarana for both preventative and medicinal purposes. The medicinal purposes are largely due to the caffeine content which is higher than any other plant source. Added to soaps or body preparations the tannins act as astringent and the caffeine to stimulate circulation. Typical usage rate of this pure extract in glycerin is 1 % to 2 % (10mg/g).

Hazelnut Oil: This pale amber oil has a pleasant aroma. Its composition is similar to sweet almond oil for which it's often substituted. This is the only fixed nut oil with an astringent quality making it beneficial for oily skin. Hazelnut oil is slow to saponify.

Horsetail (*Equisetum arvense)*: Native Americans use horsetail as a poultice to promote wound healing. Horsetail's silica content makes it useful in sitz baths, which aid in treating peripheral vascular disorders and post-thrombotic swelling. The silica is highly absorbable and utilized to promote collagen formation. It also has a high content of minerals. A popular addition to shampoo and body wash formulations. Typical usage rate of this pure extract in glycerin is 1 % to 2 % (10 mg/g).

Hydrolysed Collagen (Stearyldimonium Hydoxypropyl Hydrolysed Collagen): When used in a shampoo or conditioner it gives body and texture to your hair. The collagen becomes attached to the hair cuticles and forms a protective layer. This softens and repairs the hair in addition to providing fullness, shine and gloss. It also reduces "fly away" hair. In a body wash it helps moisturize the skin. Use 0.5 % to 2 % of total volume and add to other surfactants. Not vegetable derived.

Hydrolysed Soy Protein (Lauryldimonium Hydoxypropyl Hydrolysed Soy Protein): This purified protein is an excellent humectant in hair care products and cosmetics. When applied to the skin or hair the proteins attach to the outer cell forming a soft, protective and moisturizing film. Use 0.5 % to 1 % of total volume and add to other surfactants.

Hydrosols: These are the waters that come from the steam that is collected during the distillation of essential oils. These waters are highly nourishing and have a variety of beneficial uses in cosmetic formulations and around the home. They may be used in lieu of distilled water to formulate creams, added to facial tonics, toners and masks.

Iron Oxide Black: A black powdered pigment used to colour cosmetics and soap. It may be used with other pigments to yield a darker shade. At typical use rates, it colours soap grey.

Iron Oxide Red: A red powdered pigment used to colour cosmetics and soap. Although it is red/rust coloured in powder form, in soap and lipstick it yields a pinker shade 1 teaspoon in a 5 kg batch will give a rich shade.

Iron Oxide Yellow: A yellow powdered pigment used to colour cosmetics and soap. Similar results in soap as yellow ochre but less gold in colour. 1 teaspoon in a 5 kg batch will produce rich shade.

Jojoba Oil: Jojoba is very similar in composition to human natural skin oils. It penetrates the skin rapidly to nourish it. It also softens and moisturizes mature and dry skin. It has antioxidant properties and does not go rancid easily. Jojoba is not actually and oil but a liquid wax ester.

Jojoba Wax Esters: These perfectly round fine beads are formed from pure jojoba. They are excellent for a mild scrub and have both a polishing and moisturising effect. As the beads are warmed on the skin they melt giving the skin a glow.

Kaolin Clay: A white, powdery clay which arises following decomposition of feldspar in granites. It is used in face powder and clay masks for it absorption properties.

Lamesoft®* (Coco Glucsoside and Glyceryl Oleate): Lamesoft® is comprised of two active ingredients: the fatty acid monoglyceride glyceryl oleate from sunflower oil and coco glucoside from coconut. This cold processable ingredient can be used at rates from 2 % to 5 %.

NOTE Lamesoft® is an example of a suitable product available commercially. This information is given for the convenience of the users of this standard and does not constitute an endorsement by CROSQ of this product.

Lauryl Glucoside: An extremely mild and safe surfactant derived from natural sugars and fatty acids. Glucosides are very good at cleansing and removing fats. They work best when used with skin conditioners that replace the lipid layer on the skin that is stripped when washing.

Lema Oil: It is a blend of the high potency fractions from manuka oil and tea tree oil. It fills the need for an essential oil that has low toxicity and good to excellent potency against gram negative, and gram positive microorganisms, in addition to good anti-fungal activity. Use 0.5 % to 1 %; mix in when the formula is cool.

Macadamia Oil: This cold pressed oil is high in palmitoleic acid, a monounsaturated fatty acid that acts as an antioxidant, preventing deterioration of cell membranes. It is excellent for skin conditioning, after exposure to the sun, and in sunscreen lotions. It's a skin lubricant and is easily absorbed into the skin. Palmitoleic acid does not occur in any other plant oil.

Magnesium Sulphate (Epsom Salts): A white, fine, crystalline powder. Soaking in these salts is soothing to sore muscles and they are mildly astringent.

Mineral Oil: A mixture of refined hydrocarbons derived from Petroleum. Used in cosmetics because it will not spoil over time. It stays on the top of the skin giving a protective and shiny layer and also provides shine in lipsticks and glosses.

Modified Lecithin: A phospholipid made from soybeans. It may be used as an emulsifier to mix oil and water to make a thick honey like cream. It is also a valuable ingredient in lotions and shampoos for its nutritive and emollient properties.

Non-ionic Surfactant: A surface-active agent that has no electrical charge to it. These can render formulations much milder.

EXAMPLE Examples of non-ionic surfactants include polysorbates and polyglucosides.

P-Methoxycinnamic Acid: An oil soluble organic chemical derived from the active ingredient in cinnamon. It works by decreasing the penetration of the UVB rays by absorbing them. It is highly

effective against UVB rays but not very effective against the higher wavelength UVA rays. Use at 1 % to 5 %.

Palm Oil Cold Pressed: This GMO free palm oil contains an equal proportion of unsaturated acids and oleic acids. It is a natural source of Vitamin E and also a very rich source of beta-carotene Palm oil is physically and chemically different than palm kernel oil and should not be considered similar. Palm oil makes a nice hard bar of soap when used in combination with other oils. Palm oil is less water-soluble and resists melting and will speed up the soap making process.

Polyglucose UP (Decyl Polyglucose Unpreserved): An extremely mild and safe surfactant derived from natural sugars and fatty acids. This product has a very high pH of 11.00 and will need to be lowered by using citric acid, lactic acid, or vinegar. Safe for sensitive skin and baby shampoos. Glucosides are very good at cleansing and removing fats. They worked best when used with skin conditioners (such as coco-glucoside & glyceryl oleate) that replace the lipid layer on the skin that is stripped when washing.

Polyglucose Powder (Decyl Polyglucose): An extremely mild and safe surfactant derived from natural sugars and fatty acids. This powder is may be used for washing powders and applications where a dry form of this surfactant is useful. Use at around 2 % to 3 %.

Polysorbate 20 (Polyoxyethylene Sorbitan Monolaurate Stearate and Sorbitol): A non-toxic, viscous oily liquid derived from lauric acid (coconut oil). It is used as a solubiliser of essential oils/oil in water and may be used to emulsify essential oil or fragrance oil in water to make sprays. Use equal parts essential oil/fragrance 1:1. Mix well, and then add water.

NOTE Some essential oils require more polysorbate to emulsify them into water. If the water is cloudy add more polysorbate a bit at a time until the water clears (vacuum stripped).

Polysorbate 60 (Polyoxyethylene Sorbitan Monostearate): Composed of stearate and sorbitol. A mild co-emulsifier that creates a stable emulsion when combined with Sorbitan Monostearate.

Polysorbate 80 (Polyoxyethylene Sorbitan Monooleate): Composed of stearate and sorbitol. A non-toxic, viscous oily liquid derived from oleic acid. It is used to emulsify oils in water and may be used to make blooming (water dispersible bath oils). When the product is added to water it will disperse rather than float on top (vacuum stripped).

Potassium Hydroxide: Also know as caustic potash, it is used for making liquid soaps. It is extremely corrosive and should be used with caution.

Potassium Sorbate: This food grade preservative dissolves easily in water and is derived from the berries of the Mountain Ash Sorbus species. Potassium Sorbate retains its activity in a pH of up to but not over 6.5. It is a very effective anti-fungal and less effective bacteria-killing agent. It is important to pH test your products when you are using it as a preservative. Use 0.2 % to 0.5 % in the water phase.

Red Turkey Oil (Sulfated Castor Oil): This oil may be used as a base for essential oil baths and it will disperse in the water without leaving an oily ring around the bath. It is water-soluble. It is also possible to add Polysorbate 80 to oils and get the same water dispersible effect.

Rose Hip Oil: The amber seeds inside the hips contain oil high in essential fatty acids, gammen lenoleic acid (GLA) and Vitamin C. It has valuable properties for treating skin problems. This oil may reduce scarring and heals burns. It may help diminish broken capillaries. It is not recommended for acne prone or blemished skin as it may aggravate it.

Rosemary Oleoresin (ROE): An antioxidant grade oleoresin that is oil soluble and may be used to treat oils to delay rancidity. Usage rate is very low at 0.2 g to 1 g per kg of oil. Mix with oils; an average rule of thumb volume is to use 1 ml per l of oil. This product is natural, effective in treating vegetal oils and cost effective.

Safflower Oil: An unsaturated oil with moisturizing properties. Excellent for use in cosmetics as it will not irritate the skin or aggravate acne. It has one of the highest linoleic acid content of all oils.

St. John's Wort (*Hypericum perforatum*): This herb has been used for thousands of years beneficially for the treatment of wounds and bruises. It has been firmly established that hypercium is phyto-toxic. Avoid sunlight when taking internally or applying to skin. Typical usage rate of this pure extract in glycerin is 1 % to 2 % (10 mg/g).

Shea Butter Refined: Also called African Karite Butter, this butter is smooth, creamy, and white. Shea is extremely moisturizing and gentle to the skin. It soaps it gives a very luxurious feel to the finished product. It may also be added to creams and lotions or used alone for massage, a skin cream or a lip balm. It is remarkably high in unsaponifiables making it an excellent material for super fatting soaps. Add 1 to 2 tablespoons melted per 2.25 kg of soap just before adding scents.

Silicones: A widely used group of oils and compounds derived from the mineral silica. Silicones are water repellant and very stable. There is no known toxicity when used externally.

Silicone Oil (Dimethicone): A non-toxic, non-sensitizing, non-irritating oil soluble fluid derived from silica and used to enhance the feel and slip of lotions and creams. In hair conditioners it adds shine. It may also be used in massage oils of facial serums to reduce the drag of the base oils, especially around the delicate eye area. It is added to the oil phase at 0.5 % to 5 %.

Sodium Benzoate: A food grade preservative widely used in eye creams, vanishing creams and toothpaste. White odourless powder with a sweet antiseptic taste. Useful at a low pH levels between 3 to 5. It's major activity is anti-fungal, but it also shows some activity against bacteria.

Sodium Hydroxide: Also known as Caustic Soda or Lye, it is used to make soaps when added to fats or oils. If the soap is made properly there is no sodium hydroxide left in the final product. The oils then become saponified.

EXAMPLE Palm Oil will become Sodium Palmitate or saponified oil of Palm.

Sodium Lauryl Suphate Needles: A synthetic detergent. It is one of the most common ingredients used in shampoos, and toothpaste due to its good foaming properties. It can be an irritant in high concentrations but a correctly balanced formula can render them functional with low irritancy. This pure dry powder is useful for foaming bath bombs and shampoo bars. Use at about 3 % to 5 %.

Suttocide A (Sodium Methyhydroxyglycinate): An extremely safe and mild chemical preservative derived from the amino acid glycine. It has broad spectrum antimicrobial properties and is active against gram negative and gram positive bacteria, yeasts and molds at concentrations from 0.25 % to 0.50 %. It maintains anti-microbial activity at pH as high as 12 and is also useful for neutralizing acidic compounds.

Sorbitan Monostearate: Composed of fatty acids and sugar, it occurs naturally in fruits and acts as a mild, safe thickener and emulsifier. It is derived from the berries of Mountain Ash.

Stearic Acid: Palm source triple milled white flakes. A waxy natural fatty acid widely used in cosmetics and soap. It is used to thicken creams and lotions. Use approximately 2 % in emulsions.

Stinging Nettle (*Urtica diocia*): This herb is a popular product in shampoos and facials. It has been well tested and shown to have anti-inflammatory properties. It has been used medicinally to excite the skin locally.

Sunflower Oil: A light and pleasant oil to use. It contains Vitamins A, C, D, E, and is high in linoleic acid. Excellent for use in cosmetics as it will not irritate the skin or aggravate acne.

Surfactant (Surface Acting Agent): A substance that has the ability to reduce the surface tension at the interface between tow unlike surface. Cationic surfactants have a positive charge and anionic surfactants have a negative charge. Amphoteric surfactants have both an anionic and cationic charge. The final pH of a product will dictate which group is more dominate. If the pH is less than 7 the cationic group is more prevalent. If the pH is over 7 the anionic group is more prevalent. They tend to be mild and are often found in baby products.

EXAMPLE Examples of surfactants include soaps and detergents.

Titanium Dioxide Micronized, particle size 17 nm: This is an ultrafine cosmetic grade titanium dioxide that is specially made for cosmetic applications and high Sun Protection Factor (SPF) sun care products. The titanium dioxide is surface treated with alumina and stearic acid and imparts superior light stability. Small crystal size and controlled particle size give it excellent dispersiblility, attractive skin feel and a transparency on the skin. It is hydrophobic to give it a water resistance. Each 1 % Titanium Dioxide renders between 3 % to 5 % SPF depending on the formula it is used in (5 % in a formula will give an SPF of 15 to 25.) Titanium Dioxide offers broad-spectrum protection against both UVA and UVB rays.

Titanium Dioxide, particle size 170 nm: This is an uncoated titanium dioxide pigment with high brightness and blue tone. From a chemical and microbiological point of view it is exceptionally pure. It is recommended for foodstuffs (safe if ingested), and colour cosmetic applications. It may also be used sun care products where there is no issue around whitening.

Ultramarine Blue: Inorganic pigment sodium alumino-sulphocilicate. A bright blue colour with excellent heat stability, light fastness, easily dispersed and non-toxic. Imparts shades of royal blue in soap. For best dispersion, mix with water and add to soap in the beginning. It may be mixed with other pigments for other colours.

Ultramarine Pink: Inorganic pigment. A pink colour with excellent heat stability, light fastness, easily dispersed and non-toxic. Imparts shades of pink in soap. For best dispersion, mix with water and add to soap in the beginning. It may be mixed with other pigments for other colours.

Ultramarine Violet: Inorganic pigment. A bright violet colour with excellent heat stability, light fastness, easily dispersed and non-toxic. Imparts shades of violet to mauve in soap. For best dispersion, mix with water and add to soap in the beginning. It may be mixed with other pigments for other colours.

Unscented Cream Base: A nourishing all vegetable base that is fragrance free and free from added colourants. May be used on its own or with you own colour and scent added. It comprises of deionized water, vegetable based emulsifying compound (glyceryl stearate, ceteareth 12-20, cetearyl alcohol, cetyl palmitate) organic sunflower oil, shea butter, vegetable glycerine, ascorbyl palmitate (Vitamin C) rosemary extract and liquid germal plus (diazolydinyl urea & idodopropynyl butylcarbamate in propylene glycol).

Unscented Creamy Hair Conditioner Base: A nourishing all vegetable base that is fragrance free and free from added colourants. May be used on its own or with you own colour and scent added. It comprises of deionized water, organic sunflower oil, behenyl trimethylammonium methosulphate, cetearyl alcohol andliquid germal plus (diazolydinyl urea & idodopropynyl butylcarbamate in propylene glycol).

Unscented Gel Base: A thick clear carbomer based gel that may be used for many purposes. It comprises of deionized water, carbomer, and sodium hydroxymethylglycinate.

Unscented Lotion Base: A nourishing all vegetable base that is fragrance free and free from added colourants. May be used on its own or with you own colour and scent added. It comprises of deionized water, vegetable based emulsifying compound (glyceryl stearate, ceteareth 12-20, cetearyl alcohol, cetyl palmitate) organic sunflower oil, shea butter, vegetable glycerine, ascorbyl palmitate (Vitamin C) rosemary extract and Liquid Germall® Plus (diazolydinyl urea & idodopropynyl butylcarbamate in propylene glycol).

Unscented Shampoo Base: A nourishing all vegetable base that is fragrance free and free from added colourants. It is comprised of deionized water, ammonium lauryl sulphate (surfactant), coco-betaine (surfactant), manuka honey (humectant), PEG 150 pentaerythytyl tetrastearate (thickener & mildness enhancer), lauryldimonium hydrolysed soy protein (conditioner) potassium sorbate (preservative), citric acid (pH adjuster) and d-alpha tocopherol (Vitamin E). This is a clear base.

Witch Hazel Distillate (*Hammamelis virginiana)*: Used as a toner and widely used as a cosmetic ingredient (alcohol free hydrosol).

Vitamin A (Retinyl Palmitate): Vitamin A is known to reduce scaliness and is moisturizing to both the skin and scalp. It is found in many personal care products as a "corrective" vitamin as it normalizes dry skin, improves the texture of photo damaged skin and enhances the elasticity of the skin. Use at 0.5 % to 1 %. Do not exceed the recommended amount (liquid).

Vitamin B (Panthenol): Panthenol is used to nourish and strengthen hair follicles and prevents damage caused by over drying. It's a moisturizer for hair skin and nails. Panthenol is renowned for making nails more flexible and less brittle. It helps soothe and enhances the healing process of dry skin. Use at 1 % to 5% (powder).

Vitamin C (Ascorbyl Palmitate): Also known as Vitamin C Ester, this fat-soluble form of Vitamin C is useful in restoring a smooth surface to aging skin. Because it is fat -soluble it is easily absorbed, it is a powerful antioxidant and free radical avenger and when mixed with creams will stay potent for months and even years unlike ascorbic acid. It can be very useful in treating sunburns. Use 1 % to 5 % (powder).

Vitamin E (d-alpha Tocopherol): Vitamin E is known as a powerful anti-oxidant and free radical avenger. It is said to enhance the performance of UV blockers while softening the skin and moisturizing deep within the skin's epidermis. Use 1 % to 5 % (viscous liquid).

Xanthan Gum: A food grade thickener and emulsifier, which forms a gel when mixed with water.

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CARICOM REGIONAL ORGANISATION FOR STANDARDS AND QUALITY

The CARICOM Regional Organisation for Standards and Quality (CROSQ) was created as an Inter-Governmental Organisation by the signing of an agreement among fourteen Member States of the Caribbean Community (CARICOM). CROSQ is the regional centre for promoting efficiency and competitive production in goods and services, through the process of standardization and the verification of quality. It is the successor to the Caribbean Common Market Standards Council (CCMSC), and supports the CARICOM mandate in the expansion of intra-regional and extra-regional trade in goods and services.

CROSQ is mandated to represent the interest of the region in international and hemispheric standards work, to promote the harmonization of metrology systems and standards, and to increase the pace of development of regional standards for the sustainable production of goods and services in the CARICOM Single Market and Economy (CSME), and the enhancement of social and economic development.

CROSQ VISION:

The premier CARICOM organisation for the development and promotion of an Internationally Recognised Regional Quality Infrastructure; and for international and regional harmonized CARICOM Metrology, Standards, Inspection, Testing and Quality Infrastructure

CROSQ MISSION:

The promotion and development of standards and standards related activities to facilitate international competitiveness and the sustainable production of goods and services within the CARICOM Single Market and Economy (CSME) for the enhancement of social and economic development

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