



**GREEN SEAL™ DRAFT FINAL
ENVIRONMENTAL STANDARD
FOR SOAPS, CLEANSERS,
AND SHOWER PRODUCTS (GS-44)**

Note: Modifications made to the Proposed Standard are noted in red font in this version of the standard.

December 16, 2008

THE MARK OF ENVIRONMENTAL RESPONSIBILITY

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Green Seal, Inc., developed these Environmental Standards to provide purchasers and manufacturers or service providers with specifications and to enable Green Seal, Inc., to certify products and services for compliance. Use of these standards by others to certify or evaluate compliance is expressly prohibited.

GREEN SEAL™

Green Seal is a non-profit organization devoted to environmental standard setting, product certification, and public education. Green Seal's mission is to work towards environmental sustainability by identifying and promoting environmentally responsible products, purchasing, and production. Through its standard setting, certification and education programs, Green Seal:

- identifies products that are designed and manufactured in an environmentally responsible manner;
- offers scientific analyses to help consumers make educated purchasing decisions regarding environmental impacts;
- ensures consumers that any product bearing the Green Seal Certification Mark has earned the right to use it; and
- encourages manufacturers to develop new products that are significantly less damaging to the environment than their predecessors.

The intent of Green Seal's environmental requirements is to reduce, to the extent technologically and economically feasible, the environmental impacts associated with the manufacture, use and disposal of products. Set on a category-by-category basis, Environmental Standards focus on significant opportunities to reduce a product's environmental impact.

Green Seal offers certification to all products covered by its Standards. Manufacturers may submit their products for evaluation by Green Seal. Those which comply with Green Seal's requirements may be authorized to use the Green Seal Certification Mark on products and in product advertising. Manufacturers authorized to use the Green Seal Certification Mark on their product are subject to an ongoing program of testing, inspection, and enforcement. For additional information on Green Seal or any of its programs, contact:

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CLEANSERS, AND SHOWER PRODUCTS (GS-44)**

TABLE OF CONTENTS

FOREWORD	5
LIST OF ACRONYMS	7
1.0 SCOPE	8
2.0 DEFINITIONS	8
2.1 ALLERGEN	8
2.2 ANTIMICROBIAL	8
2.3 ANTISEPTIC	8
2.4 ASTHMA	8
2.5 ASTHMAGENS	8
2.6 BIOBASED	8
2.7 CARCINOGENS	9
2.8 CLEANSER	9
2.9 COLOR COMPONENT	9
2.10 COMPONENT	9
2.11 CONDITIONER	9
2.12 CONTAMINANT	9
2.13 DISINFECTANT	9
2.14 HABER’S RULE	9
2.15 HALOGENATED ORGANIC SOLVENTS	9
2.16 FRAGRANCE	9
2.17 INGREDIENT	10
2.18 INTENTIONAL INTRODUCTION	10
2.19 MUTAGEN	10
2.20 NATURAL COMPONENTS	10
2.21 NATURALLY-DERIVED COMPONENTS	10
2.22 OPTICAL BRIGHTENERS	10
2.23 ORGANIC COMPONENTS	10
2.24 OZONE-DEPLETING COMPOUNDS	10
2.25 POST-CONSUMER MATERIAL	10
2.26 PRODUCT AS USED	11
2.27 PROFESSIONAL-USE	11
2.28 PRIMARY PACKAGE	11
2.29 RECYCLABLE	11
2.30 REPRODUCTIVE TOXIN	11
2.31 SANITIZER	11
2.32 SECONDARY PACKAGING	11
2.33 SERIOUS EYE DAMAGE	11
2.34 SHAMPOO	11
2.35 SHOWER PRODUCTS	12
2.36 SKIN CORROSION	12
2.37 SKIN SENSITIZER	12
2.38 SOAP	12
2.39 SOURCE-REDUCED PACKAGE	12
2.40 UNDILUTED PRODUCT	12
3.0 PRODUCT-SPECIFIC PERFORMANCE REQUIREMENTS	12
4.0 PRODUCT-SPECIFIC HEALTH AND ENVIRONMENTAL REQUIREMENTS	12
4.1 ACUTE TOXICITY	12

4.2	CARCINOGENS, MUTAGENS, AND REPRODUCTIVE TOXINS	13
4.2.1	Ethoxylated Alcohols	Error! Bookmark not defined.
4.2.2	Formaldehyde Donors	Error! Bookmark not defined.
4.3	SKIN AND EYE IRRITATION	13
4.4	SKIN SENSITIZATION	14
4.5	SKIN ABSORPTION	14
4.6	COMPONENTS THAT CAUSE ASTHMA	14
4.7	OZONE DEPLETING COMPOUNDS	14
4.8	VOLATILE ORGANIC COMPOUND CONTENT	14
4.9	CHRONIC INHALATION TOXICITY	15
4.10	TOXICITY TO AQUATIC LIFE	15
4.11	BIOACCUMULATING COMPOUNDS	15
4.12	AQUATIC BIODEGRADABILITY	16
4.13	EUTROPHICATION	16
4.14	PROHIBITED COMPONENTS	16
4.15	FRAGRANCES	17
4.16	PRESERVATIVES	17
4.17	COLORS	17
4.18	OPTICAL BRIGHTENERS	17
4.19	ANIMAL TESTING	17
5.0	PACKAGING REQUIREMENTS	17
5.1	PRIMARY PACKAGING	17
5.1.1	Source Reduction in Primary Package	17
5.1.2	Concentrated Product Packaging	18
5.1.3	Heavy Metal Restrictions	18
5.1.4	Other Restrictions	18
5.2	SECONDARY PACKAGING	18
6.0	COMMUNICATION AND LABELING REQUIREMENTS	18
6.1	ANTIMICROBIAL CLAIMS	18
6.2	INGREDIENT LINE	18
6.3	ORGANIC CLAIMS	19
6.4	NATURAL AND BIOBASED CLAIMS	19
6.5	FRAGRANCE AND ALLERGEN LABELING	19
6.6	CONSUMER COMMUNICATION	19
6.7	USE LABELING	19
6.8	PLASTIC LABELING	19
6.9	DISPOSAL LABELING	19
6.10	CERTIFICATION MARK	19
6.11	STATEMENT OF BASIS FOR CERTIFICATION	20
APPENDIX A		21

DRAFT FINAL STANDARD FOR SOAPS, CLEANSERS, AND SHOWER PRODUCTS – GS-44

FOREWORD

A. Certification. This Environmental Standard contains the basic requirements for certain products (as defined in the Scope section below) to be certified by Green Seal™ and for their manufacturers to receive authorization to use the Green Seal Certification Mark on products and their packaging, and in product advertising. The requirements are based on an assessment of the environmental impacts of product manufacture, use, and disposal and reflect information and advice obtained from industry, trade associations, users, government officials, environmental and other public interest organizations, and others with relevant expertise. These requirements are subject to revision as further experience and investigation may show is necessary or desirable.

B. Compliance with the Standard. Compliance with this Standard is one of the conditions of certification of a product by Green Seal.

C. Compliance with Government Rules. In order to be authorized to use the Green Seal Certification Mark, the manufacturer of the certified product must disclose all governmental allegations or determinations of violation of federal, state, or local environmental laws or regulations with respect to facilities in which the product is manufactured. Certification will be denied any product manufactured in violation of environmental laws or regulations if, in Green Seal's judgment, such violations indicate that the environmental impacts of the product significantly exceed those contemplated in the setting of the standard.

D. Limitations on Purpose of Standard. Green Seal's Standards provide basic criteria to promote environmental quality. Provisions for product safety have not been included in this Standard because government agencies and other national standard-setting organizations establish and enforce safety requirements.

E. Substantially Equivalent Products. Products that are substantially similar to those covered by this standard in terms of function and environmental impact may be evaluated and certified by Green Seal against the intent of the requirements of this standard.

F. Unanticipated Environmental Impacts. A product which complies with this Standard will not necessarily be certified by Green Seal if, when examined and tested, it is found to have other features which significantly increase its impact on the environment. In such a situation, Green Seal will ordinarily amend its standards to account for the unanticipated environmental impacts.

G. Certification Agreement and Green Seal Rules. In order to be authorized to apply the Green Seal Certification Mark to a product or its packaging, or to use the Green Seal Certification Mark in product advertising, the manufacturer of the product must (1) undergo an initial product evaluation to determine that the product complies with Green Seal's requirements, (2) sign a Green Seal Certification Agreement that, among other things, defines how and where the Green Seal may be used, (3) pay fees to cover the costs of testing and monitoring, (4) agree to an ongoing program of factory inspections and product testing, and

DRAFT FINAL STANDARD FOR SOAPS, CLEANSERS, AND SHOWER PRODUCTS – GS-44

(5) comply with the requirements found in the most recent version of "Rules Governing the Use of the Green Seal Certification Mark."

H. Disclaimer of Liability. Green Seal™, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. Green Seal shall not incur any obligations or liability for damages, including consequential damages, arising out of or in connection with the interpretation of, reliance upon, or any other use of this Standard.

I. Care in Testing. Many tests required by Green Seal's Standards involve safety considerations. Adequate safeguards for personnel and property should be employed in conducting such tests.

J. Referenced Standards. Standards referenced in this document may have been superseded by a later edition, and it is intended that the most recent edition of all referenced standards be used in determining compliance of a product with this standard.

K. Labeling Requirements. This standard neither modifies nor supersedes government labeling requirements. Labeling language which varies in form from the requirements of this section may be used with the written approval of Green Seal.

List of Acronyms

ACGIH. American Conference of Governmental Industrial Hygienists
AOEC. Association of Occupational and Environmental Clinics
ASTM. American Society for Testing and Materials
CFR. Code of Federal Regulations
DFG. German Deutsche Forschungsgemeinschaft
EPA. United States Environmental Protection Agency
FDA. The United States Food and Drug Administration
GHS. Globally Harmonized System for Classification and Labeling of Chemicals
IARC. International Agency for Research on Cancer
IRIS. Integrated Risk Information System
INCI. International Nomenclature of Cosmetic Ingredients
ISO. International Organization for Standardization
LLNA. Local Lymph Node Assay
MAK. Maximum Allowable Concentrations
NOAEL. No-Observed Adverse Effect Level
NTP. National Toxicology Agency
OECD. Organization for Economic Co-operation and Development
OSHA. Occupational Safety and Health Administration
QSAR. Quantitative Structure-Activity Relationship
TLV. Threshold Limit Value
USDA. The United States Department of Agriculture
VOC. Volatile Organic Compound

**GREEN SEAL™ DRAFT FINAL ENVIRONMENTAL STANDARD FOR
SOAPS, CLEANSERS, AND SHOWER PRODUCTS (GS-44)****1.0 SCOPE**

This standard establishes environmental requirements for hand, hair, and body soaps and cleansers used and rinsed after use. This includes liquid and solid soap and cleansers, shampoo, conditioner and related shower products for baby, child, adult, and professional-use. **This standard does not apply to products used for animal or pet use, those used in commercial or institutional facilities where the products are not intended to be sold to consumers, or products required to be registered under the Federal Insecticide, Fungicide, and Rodenticide Act, such as those making claims as sterilizers, disinfectants, or sanitizers, or antimicrobial soaps and cleansers.**

2.0 DEFINITIONS

2.1 Allergen. Allergenic substances listed by the European Commission in the Cosmetic Directive **and those listed by the FDA (including food allergens).**

2.2 Antimicrobial. Substances that **are intended to** kill or inhibit the growth of microorganisms including antiseptic, disinfectant, and sanitizer substances.

2.3 Antiseptic. Substances that **are intended to** prevent or arrest the growth of microorganisms.

2.4 Asthma. **Asthma is a chronic inflammatory disorder of the airways that impairs breathing. Asthma affects children and adults, may be intermittent or persistent, and is further classified as mild, moderate, or severe. The chronic inflammation associated with variable airflow obstruction commonly causes difficulty breathing, coughing, wheezing, shortness of breath, and/or chest pain. Symptoms may resolve completely between active episodes. Symptoms may occur during exposure, immediately after exposure, or up to 24 hours later in a “late phase,” frequently interrupting sleep.**

2.5 Asthmagens. Substances designated as asthma causing agents by the AOEC, which after review by AOEC have met the AOEC sensitization criteria.

2.6 Biobased. The content of a product that is from biological products or renewable materials, forestry, or agricultural materials (including plant, animal, and marine materials).

DRAFT FINAL STANDARD FOR SOAPS, CLEANSERS, AND SHOWER PRODUCTS – GS-44

- 2.7 Carcinogens.** Chemicals listed as a known, probable, reasonably anticipated, or possible human carcinogen by the IARC (Groups 1, 2A, and 2B), NTP (Groups 1 and 2), EPA IRIS (weight-of-evidence classifications A, B1, B2, C, carcinogenic, likely to be carcinogenic, and suggestive evidence of carcinogenicity or carcinogen potential), or by OSHA (as carcinogens under 29 CFR 1910.1003(a)(1)).
- 2.8 Cleanser.** A product intended to clean the body or hair that has detergent properties that are not necessarily due to alkali-fatty acid compounds, and may contain synthetic detergents.
- 2.9 Color Component.** A product component whose only function is to change the product's color.
- 2.10 Component.** A deliberate addition to the product, where it is added for its continued presence in the final product to provide a specific characteristic, appearance, or quality. Naturally occurring elements and chlorinated organics, which may be present as a result of chlorination of the water supply, are not considered intentional components if the concentrations are below the applicable maximum contaminant levels in the National Primary Drinking Water Standards found in 40 Code of Federal Regulations (CFR) Part 141.
- 2.11 Conditioner.** A product that is intended to alter the texture or appearance of hair or scalp, used after shampoo and rinsed off after use. This does not include leave-in products.
- 2.12 Contaminant.** A product constituent that was not added for its functionality, but is known to be present.
- 2.13 Disinfectant.** An antimicrobial agent intended to and capable of destroying pathogenic and potentially pathogenic microorganisms on inanimate surfaces.
- 2.14 Haber's Rule.** For a given toxic gas, the concentration of the gas multiplied by the duration of exposure equals a constant ($C \times t = k$); for example, doubling the concentration will halve the time for a given toxic effect.
- 2.15 Halogenated Organic Solvents.** Organic solvents containing halogens, including fluorine, chlorine, bromine, and iodine.
- 2.16 Fragrance.** A product constituent, often (but not limited to) a multi-component additive, used in a product with the purpose of imparting or neutralizing a scent in the product.

DRAFT FINAL STANDARD FOR SOAPS, CLEANSERS, AND SHOWER PRODUCTS – GS-44

2.17 Ingredient. Any constituent of a product that is intentionally added or known to be a contaminant that comprises at least 0.01% by weight of the product.

2.18 Intentional Introduction. The act of deliberately utilizing a material in the formation of a package or packaging component where its continued presence is desired in the final package or packaging component to provide a specific characteristic, appearance, or quality.

2.19 Mutagen. A chemical that meets the criteria for category 1, chemicals known to induce heritable mutations or to be regarded as if they induce heritable mutations in the germ cells of humans, under GHS Chemicals Which Cause Mutations in Germ Cells (United Nations Economic Commission for Europe, GHS).

2.20 Natural Components. Components that come from renewable materials and found in nature including mineral, forestry, agricultural, or biological materials; do not contain transgenic hybrid organisms; have been processed without irradiation; and are not chemically altered.

2.21 Naturally-Derived Components. Components that are partially chemically altered without petroleum components and have been minimally processed such that they not be altered to such an extent that they are no longer biodegradable and non-toxic (examples of potentially acceptable processes are included in Appendix A).

2.22 Optical Brighteners. Additives designed to enhance the appearance of colors and whiteness in materials by absorbing ultraviolet radiation and emitting blue radiation. These compounds are also known as fluorescent whitening agents.

2.23 Organic Components. Components, produced and handled, certified by a USDA-accredited certifying agent.

2.24 Ozone-Depleting Compounds. A compound with an ozone-depletion potential greater than 0.01 (CFC 11=1) according to the EPA list of Class I and Class II Ozone-Depleting Substances.

2.25 Post-Consumer Material. Material that would otherwise be destined for solid waste disposal, having completed its intended end-use and product life cycle. Post-consumer material does not include materials and by-products generated from, and commonly reused within, an original manufacturing and fabrication process.

DRAFT FINAL STANDARD FOR SOAPS, CLEANSERS, AND SHOWER PRODUCTS – GS-44

2.26 Product As Used. The amount of product directed for use and diluted in 1 liter of tap water. If no dose is suggested, 5 ml of liquid soap or cleansers shall be used and 0.9 ml of foam soap or cleansers shall be used, **or the equivalent for solid or semi-solid products.**

2.27 Professional-Use. **Trained or paid workers, such as hair stylists, that use the products included in the scope of this standard and such products are available for sale to the consumer.**

2.28 Primary Package. A package that is the material physically containing and coming into contact with the product, not including the cap or lid of a bottle.

2.29 Recyclable. The package can be collected in a substantial majority of communities, separated or recovered from the solid waste stream and used again, or reused in the manufacture or assembly of another package or product through an established recycling program.

2.30 Reproductive Toxin. A chemical listed as a reproductive toxin (including developmental, female, and male toxins) by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (California Code of Regulations, Title 22, Division 2, Subdivision 1, Chapter 3, Sections 1200, et. Seq.).

2.31 Sanitizer. A product **intended to** reduce the level of microorganisms present to acceptable levels established by federal or provincial health authorities.

2.32 Secondary Packaging. **Packaging used to contain primary package/s and typically used for merchandizing. This does not include case or shipping packaging or the primary package, cap, or lid.**

2.33 Serious Eye Damage. The production of tissue damage in the eye, or serious physical decay of vision, following application of a test substance to the anterior surface of the eye, which is not fully reversible within 21 days of application.

2.34 Shampoo. **A soap or cleanser used to clean the hair and scalp and rinsed off after use.**

DRAFT FINAL STANDARD FOR SOAPS, CLEANSERS, AND SHOWER PRODUCTS – GS-44

2.35 Shower Products. Products that are used on the body or hair with the intention that they are washed off the body. This may include bubble bath, exfoliating scrubs, and other rinse-off products.

2.36 Skin Corrosion. The production of irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis, following the application of a test substance for up to 4 hours. Corrosive reactions are typified by ulcers, bleeding, bloody scabs, and, by the end of observation at 14 days, by discoloration due to blanching of the skin, complete areas of alopecia, and scars.

2.37 Skin Sensitizer. A substance that will lead to an allergic response following skin contact.

2.38 Soap. A product used to clean the body or hair in which most of the nonvolatile matter consists of an alkali salt of fatty acids and whose detergent properties are due to these alkali-fatty acid compounds (21 CFR 701.20).

2.39 Source-Reduced Package. A package that has at least 50% less material (by weight) compared to containers commonly used for that product type.

2.40 Undiluted Product. The most concentrated form of the product produced by the manufacturer for transport outside its facility.

3.0 PRODUCT-SPECIFIC PERFORMANCE REQUIREMENTS

The product shall perform as well as or better than a conventional, nationally-recognized product in its category and at equivalent concentration using an objective, scientifically-validated method conducted under controlled and reproducible laboratory conditions. The testing protocol shall include, at a minimum: cleaning ability, lathering/rinsing, and skin or hair condition after use. A standard soil shall be used and conclusions shall be derived from at least six separate samples. All results, a summary of conclusions, and a description of how panelists were chosen shall be submitted.

4.0 PRODUCT-SPECIFIC HEALTH AND ENVIRONMENTAL REQUIREMENTS

4.1 Acute Toxicity. The *undiluted* product shall not be toxic to humans. A product is considered toxic if any of the following criteria apply:

Oral lethal dose (LD ₅₀)	≤ 5,000 mg/kg
Inhalation lethal concentration (LC ₅₀)	≤ 20 mg/L at 1 hr

DRAFT FINAL STANDARD FOR SOAPS, CLEANSERS, AND SHOWER PRODUCTS – GS-44

Dermal lethal dose (LD₅₀) ≤ 2,000 mg/kg

Toxicity shall be measured on the product as a whole. Alternatively, a mixture need not be tested if existing toxicity information demonstrates that each of the ingredients complies. The toxicity testing procedures should meet the requirements put forth by the OECD Guidelines for Testing of Chemicals. These protocols include Acute Oral Toxicity Test (TG 401), Acute Inhalation Toxicity Test (TG 403), and Acute Dermal Toxicity Test (TG 402). Testing is not required for any ingredient for which sufficient information exists.

To demonstrate compliance with this requirement. It is assumed that the toxicity of the individual ingredients is additive. The toxicity values are adjusted by the weight of the ingredient in the product and summed using the following formula:

$$TP = \left(\sum_{i=1}^n \frac{wt_i}{TV_i} \right)^{-1}$$

Where,

TP = toxicity of the product

wt_i = the weight fraction of the ingredient

TV = the toxicity value for each ingredient (LD₅₀)

n = number of ingredients

For inhalation toxicity, it is determined from all ingredients with a vapor pressure greater than 0.1 mm Hg at standard conditions.

4.2 Carcinogens, Mutagens, and Reproductive Toxins. The *undiluted* product shall not contain any ingredients or components that are carcinogens, mutagens, or reproductive toxins. The product shall not contain any ingredients or components known to produce or release carcinogens, mutagens, or reproductive toxins.

4.3 Skin and Eye Irritation. The *undiluted* product shall not be corrosive or irritating to the skin or cause serious eye damage as defined by the GHS. Further, a product is considered corrosive to skin or to cause serious eye damage if it has a pH of 2 or less or a pH of 11.5 or greater, unless proven otherwise.

The product shall not be a skin irritant as tested by OECD Guidelines for Testing Chemicals, Section 404 or other peer-reviewed or standard test methods. The product shall not be considered a skin irritant under the following scenarios:

- if test data shows that the whole-product is not a skin irritant,
- if test data shows that each ingredient present at or above a concentration of 5% is not a skin irritant, or

DRAFT FINAL STANDARD FOR SOAPS, CLEANSERS, AND SHOWER PRODUCTS – GS-44

- if test data shows that any known skin irritants are non irritating when present at 5% or greater in the product.

Further, a product shall be evaluated for skin corrosion and serious eye damage following the testing and evaluation strategy described in the GHS. Green Seal prefers that an *in vitro* test validated by the Interagency Coordinating Committee on the Validation of Alternative Methods or the European Centre for the Validation of Alternative Methods be used. Green Seal will also accept the results of other peer-reviewed or standard *in vitro* or *in vivo* test methods demonstrating that the product mixture is not corrosive. Testing is not required for any ingredient for which sufficient information exists.

4.4 Skin Sensitization. The *undiluted* product shall not be a skin sensitizer, as tested by the LLNA or following EPA test guidelines for skin sensitization (OECD Guideline 429, OPPTS 870.2600). Green Seal will accept the results of other standard test methods, such as the guinea pig maximization test (OECD Guideline 406) or the Buehler test (OECD 406), as proof that the product in its most concentrated form is not a skin sensitizer when data from LLNA tests are not available. Testing is not required for any ingredient for which sufficient information exists.

4.5 Skin Absorption. The *undiluted* product shall not contain ingredients, present at greater than or equal to 1% in the product, that are listed on the ACGIH TLV carrying a skin notation, or substances that are listed on the DFG MAK list with a skin absorption H notation. **Further, the product shall not contain ingredients that sum to 1% in the formula that are listed on ACGIH or DFG with the same target organ.**

4.6 Components that Cause Asthma. The *undiluted* product shall not contain any **components that have been identified as asthmagens.**

4.7 Ozone Depleting Compounds. The *undiluted* product shall not contain any ingredients that are ozone-depleting compounds.

4.8 Volatile Organic Compound Content. The *undiluted* product shall not contribute significantly to the production of photochemical smog, tropospheric ozone, or poor indoor-air quality by containing no more than 1% of VOC content. **The VOC content shall be determined either by summing the percent by weight contribution from all components of the product that have a vapor pressure of greater than 0.1 mm mercury at standard conditions or by the California Air Resources Board Method 310 modified to not allow the exemption for fragrances specified under Method 310.**

DRAFT FINAL STANDARD FOR SOAPS, CLEANSERS, AND SHOWER PRODUCTS – GS-44

4.9 Chronic Inhalation Toxicity. Chronic Inhalation Toxicity. The product as used shall not contain ingredients with a vapor pressure above 1 mm mercury at ambient conditions (1 atm pressure and 20-25° C) that cause chronic inhalation toxicity as evidenced by either of the following:

- Listed by the European Chemicals Bureau as R48/23: Danger of serious damage to health by prolonged exposure through inhalation.
- Classified as producing significant toxic effects in mammals from repeated inhalation exposure at or below 1.0 mg/L as a vapor according to OECD Harmonized Integrated Classification System for Human Health and Environmental Hazards of Chemical Substances and Mixtures. For the purposes of this standard, significant toxic effects in mammals from repeated inhalation exposure at or below 1.0 mg/L as a vapor shall be established by a NOAEL, based on a test duration of 90 days at 6 hours per day; values from other exposure regimes shall be estimated (extrapolated) per the principles of Haber's rule. In lieu of a NOAEL, the LOAEL can be used with a ten-fold safety factor (i.e., LOAEL/10).

4.10 Toxicity to Aquatic Life. The product *as used* shall not be toxic to aquatic life. A compound is considered not toxic to aquatic life if it meets one or more of the following criteria:

Acute LC₅₀ for algae, daphnia, or fish ≥100 mg/L

For purposes of demonstrating compliance with this requirement, aquatic toxicity testing is not required if sufficient aquatic toxicity data exist for each of the product's ingredients to demonstrate that the product mixture complies, using a weighted average approach. Aquatic toxicity tests shall follow the appropriate protocols in ISO 7346-2 for fish, OECD test guidance 203 for fish, OECD test guidance 201 for algae, and OECD test guidance 202 for daphnia.

Alternatively, the product shall not be toxic to aquatic life defined as IC₅₀>1000 mg/L as measured by whole formulation short-term sensitive toxicity test performed on the bacteria *Photobacterium phosphoreum*. Aquatic toxicity shall be measured by one of the following test methods: *Biological Test Method: Toxicity Test Using Luminescent Bacteria (Photobacterium phosphoreum)*, Report EPS 1/RM/24, November 1992, Environment Canada, ASTM D5660-96 or ISO 11348.

4.11 Bioaccumulating Compounds. The product *as used* shall not contain any ingredients that bioaccumulate or that form degradation products that bioaccumulate. A chemical is considered to bioaccumulate when it has a BCF greater than 100 (or log BCF >2) as determined by ASTM E-1022-94(2007) Standard Guide for Conducting Bioconcentration test with Fishes and Saltwater Bivalve Mollusks or OECD 305 Bioconcentration: Flow-through Fish Test. If the

DRAFT FINAL STANDARD FOR SOAPS, CLEANSERS, AND SHOWER PRODUCTS – GS-44

chemical meets the requirement for biodegradability, 4.13, it may be considered to not bioaccumulate. Testing is not required for any ingredient for which sufficient information exists. If no test results are available, a chemical with a log octanol/water partition coefficient $\log K_{ow} > 3$ may be considered to bioaccumulate.

4.12 Aquatic Biodegradability. Each of the individual organic ingredients in the product *as used* shall exhibit ready biodegradability in accordance with the OECD definition. Biodegradability shall be measured according to any of the following methods: ISO 7827, 9439, 10707, 10708, 9408, 14593; OECD Methods 301A – F; or OECD 310. Specifically, within a 28-day test, the ingredient shall meet one of the following criteria within 10 days of the time when biodegradation first reaches 10%:

- Removal of DOC > 70%
- BOD > 60%
- % of BOD of ThOD > 60%
- % CO₂ evolution of theoretical > 60%

Per OECD guidance the 10-day window requirement does not apply to structurally-related surfactant homologues. For organic ingredients that do not exhibit ready biodegradability in these tests the manufacturer may demonstrate biodegradability in sewage treatment plants using the Coupled Units Test found in OECD 303A by demonstrating DOC removal > 90%.

An exception shall be made for a natural or naturally-derived components that does not exhibit ready biodegradability if it does not have acute aquatic toxicity <100 mg/L (according to 4.10), **does not have a chronic toxicity <100 mg/L (tested according to OECD 210, 211, or 201), is not bioaccumulating (4.11)**, and exhibits biodegradation rates above 70% (measured as BOC, DOC, or COD), per ISO test methods 9887 or 9888; or OECD 302A, B, or C.

Testing is not required for any ingredient for which sufficient information exists concerning its biodegradability, either in peer-reviewed literature or databases. In the absence of experimental data, QSAR data from EPA's BioWin (EpiSuite) models may be considered.

4.13 Eutrophication. The *undiluted* product shall not contain phosphorus-containing ingredients.

4.14 Prohibited Components. The product shall not contain the following components:

- 2-butoxyethanol
- Alkylphenol ethoxylates
- Butylated hydroxytoluene

DRAFT FINAL STANDARD FOR SOAPS, CLEANSERS, AND SHOWER PRODUCTS – GS-44

- Ethoxylated alcohols
- Ethylene diaminetetra-acetic acid or any of its salts
- Formaldehyde donors
- Heavy metals including, lead, hexavalent chromium, or selenium both in the elemental form or compounds
- Halogenated organic solvents
- Methylidibromo glutaronitrile
- Monoethanolamine, Diethanolamine, and Triethanolamine alone or in compounds
- Nitro-musks
- Parabens
- Phthalates
- Polycyclic musks

4.15 Fragrances. The product shall declare any fragrances on the product label in the ingredient line (see 6.2). Any fragrances used shall have been produced and handled following the code of practice of the International Fragrance Association. **The product label shall reflect the use of fragrances (present or not) in accordance with sections 6.5 and 6.6.**

4.16 Preservatives. The use of preservatives for purposes other than preservation of the product is not allowed. Documentation must be provided to demonstrate the dosage necessary to preserve the product.

4.17 Color Components. [Reserved]

4.18 Optical Brighteners. The *undiluted* product shall not contain any ingredients that are optical brighteners.

4.19 Animal Testing. Green Seal wants to discourage animal testing and will accept the results of past peer reviewed or standard tests demonstrating compliance with a criterion. A mixture need not be tested if existing information demonstrates that each of the ingredients complies with a criterion. Additionally, non-animal (in-vitro) test results may be accepted, providing that the test methods are referenced in peer-reviewed literature and the manufacturer provides the reasons for selecting the particular test method.

5.0 PACKAGING REQUIREMENTS

5.1 Primary Packaging.

5.1.1 Source Reduction in Primary Package. The primary package shall be recyclable or a source-reduced package.

DRAFT FINAL STANDARD FOR SOAPS, CLEANSERS, AND SHOWER PRODUCTS – GS-44

5.1.1.1 Post-Consumer Content. The primary package, shall contain at least 25% post-consumer material or demonstrate that efforts were made to use the maximum available post-consumer material in the package.

5.1.2 Concentrated Product Packaging. Concentrated products are prohibited from being packaged in ready-to-use forms, including but not limited to pump-dispenser bottles.

5.1.3 Heavy Metal Restrictions. Heavy metals, including lead, mercury, cadmium, and hexavalent chromium, shall not be intentionally introduced. Further, the sum of the concentration levels of these metals present shall not exceed 100 parts per million by weight (0.01%); an exception is allowed for refillable packages or packages that would not exceed this maximum level but for the addition of recovered materials. Further, intentional introduction does not include the use of one of the metals as a processing aid or intermediate to impart certain chemical or physical changes during manufacturing, where the incidental retention of a residual of that metal in the final packaging or packaging component is not desired or deliberate, if the final packaging or packaging component complies with the incidental concentration restrictions of 100 ppm.

5.1.4 Other Restrictions. Phthalates, Bisphenol A, and chlorinated packaging material are prohibited from being intentionally introduced; an exception is allowed for packages that would not have these added compounds but for the addition of recovered material.

5.2 Secondary Packaging. Secondary packaging shall only be used for concentrates. An exception may be made for packaging of multiple units when up to one of the units is a ready-to-use form, including but not limited to pump-dispenser bottles, and total packaging (primary plus secondary) is a reduction in packaging material use.

6.0 COMMUNICATION AND LABELING REQUIREMENTS

6.1 Antimicrobial Claims. The product shall make no antibacterial, disinfecting, antiseptic, or sanitizing product claims.

6.2 Ingredient Line. The product shall list the product components using the naming convention of the INCI in order of predominance. The general term ‘fragrance’ may be used for fragrance components. The product shall also follow any additional labeling regulations that apply to that product

DRAFT FINAL STANDARD FOR SOAPS, CLEANSERS, AND SHOWER PRODUCTS – GS-44

6.3 Organic Claims. Organic claims must be supported with documentation that they meet the USDA National Organic Program.

6.4 Natural and Biobased Claims. Only the following natural and biobased, or related, claims are allowed when the product meets the criteria outlined:

- “100 percent Natural,” “All Natural,” “100 percent Biobased,” or “All Biobased” shall only contain natural or biobased components, respectively, with no synthetic, petroleum, silicone, or artificial components. An exception is permitted for lye used to produce soap.
- "Natural" or “Biobased” products shall contain 95% natural, naturally-derived, or biobased components, respectively, with no synthetic, petroleum, silicone, or artificial components.
- "Made with/from Natural Ingredients" or “Made with/from Biobased Ingredients” shall contain at least 70% natural, naturally-derived, or biobased components, respectively, with no synthetic, petroleum, silicone, or artificial components.

6.5 Fragrance and Allergen Labeling. The product label shall declare, separate from the ingredient line, if a fragrance has been added or if no fragrance has been added and if the product contains any allergen ingredients.

6.6 Consumer Communication. The product ingredient line (6.2) shall be made available to consumers in an easily accessible means besides the product package, such as the company website.

6.7 Use Labeling. The product shall be accompanied by detailed instructions for proper use to maximize product performance and minimize waste.

6.8 Plastic Labeling. If plastic, the packaging must be clearly marked with the appropriate Society of the Plastics Industry symbol to identify the type of plastic for recycling and appropriate qualification of recyclability as referenced in 5.1.1 such as “may be recyclable, see if accepted by your local program” or “only a few communities accept his package for recycling, check with your local program.”

6.9 Disposal Labeling. The label must include proper disposal instructions including clear package recycling instructions.

6.10 Certification Mark. The Green Seal Certification Mark may appear on the packaging and may appear on the product itself. The Green Seal Certification mark shall not be used in conjunction with any modifying terms, phrases, or

DRAFT FINAL STANDARD FOR SOAPS, CLEANSERS, AND SHOWER PRODUCTS – GS-44

graphic images that might mislead consumers as to the extent or nature of the certification.

6.11 Statement of Basis for Certification. Whenever the Green Seal certification mark appears on a package, the package shall contain a description of the basis for certification. The description shall be in a location, style, and typeface that are easily readable. Unless otherwise approved in writing by Green Seal, the description shall read as follows:

This product meets the Green Seal™ environmental standard for soaps, cleansers, and shower products based on its low impact on aquatic life, minimized use of hazardous substances, and increased health protection.

Appendix A

Examples of Potentially Acceptable Processing Methods of Naturally-Derived Components (any products must also meet all the requirements in the standard)

- Esterification, Etherification, and Transesterification (to produce esters and ethers like polyglycerols)
- Glucosidation (to produce glucosides)
- Hydrogenation (of fats and oils)
- Hydrolysis and Hydrogenolysis (to produce hydrolyzed proteins, glycerin and fatty acids, and fatty alcohols)
- Other Condensation Reactions like Alkylation and Sulfation
- Saponification (to produce soap)