



GS-8

**GREEN SEAL™ ENVIRONMENTAL STANDARD FOR
GENERAL-PURPOSE, BATHROOM,
GLASS, AND CARPET CLEANERS
USED FOR HOUSEHOLD PURPOSES**

SECOND EDITION

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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.

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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 (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.

GREEN SEAL ENVIRONMENTAL STANDARD FOR GENERAL-PURPOSE, BATHROOM, GLASS, AND CARPET CLEANERS USED FOR HOUSEHOLD PURPOSES (GS-8)

1.0 SCOPE

This standard establishes environmental requirements for general-purpose, bathroom, glass, and carpet cleaners marketed specifically for use in households or similar residential settings.

2.0 DEFINITIONS

2.1 Bathroom Cleaners: Products used to clean hard surfaces in a household bathroom such as counters, walls, floors, fixtures, basins, tubs, and tile. This category may include products required to be registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), such as disinfectants and sanitizers, but does not include products specifically intended to clean toilet bowls.

2.2 Carpet Cleaners: Products used for routine cleaning of household carpets and rugs. This category may include, but is not limited to, products used in cleaning by means of extraction, shampooing, dry foam, bonnet, or absorbent compound. It does not include products intended primarily for spot removal. This category does not include any products required to be registered under FIFRA, such as those making claims as sterilizers, disinfectants, or sanitizers.

2.3 Carcinogen: A chemical listed as a known, probable, or possible human carcinogen by the International Agency for Research on Cancer (IARC) (Groups 1, 2A, and 2B), the National Toxicology Program (NTP) (Groups 1 and 2), the U.S. Environmental Protection Agency (EPA) Integrated Risk Information System (IRIS) (weight-of-evidence classifications A, B1, B2, and C), or the Occupational Safety and Health Administration (OSHA).

2.4 Concentrate: Any product that must be diluted by at least eight parts by volume water (1:8 dilution ratio) prior to its intended use.

2.5 Corrosive: A substance that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact.

2.6 General-Purpose Cleaners: Products specifically marketed as suitable for cleaning common household surfaces. They do not include task-specific cleaners, such as scouring cleaners, toilet bowl cleaners, upholstery cleaners, laundry and dishwashing detergents, spot/stain removers, oven cleaners, furniture polish, or drain cleaners. This category does not include any products required to

be registered under FIFRA, such as those making claims as sterilizers, disinfectants, or sanitizers.

2.7 Glass Cleaners: Products used to clean windows, glass, and mirrored surfaces. This category does not include any products required to be registered under FIFRA, such as those making claims as sterilizers, disinfectants, or sanitizers.

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

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

2.10 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 the Harmonized System for the Classification Of Chemicals Which Cause Mutations in Germ Cells (UN, 2003).

2.11 Optical Brighteners: Additives designed to enhance the appearance of colors and whiteness in materials by absorbing ultraviolet radiation and emitting blue radiation; including but not limited to fluorescent whitening agents.

2.12 Ozone-Depleting Compounds: Any compound with an ozone-depletion potential greater than 0.01 (CFC 11=1).

2.13 Primary Packaging: The material physically containing and coming into contact with the product, not including the cap, lid, or nozzle of a package.

2.14 Product As Used: This is the most commonly used form of the product that the manufacturer recommends for a product's intended use. For example, if a manufacturer recommends a concentrated floor cleaner be diluted 1:8 with water, the product shall meet the environmental and performance requirements that specify 'as used' at a dilution of 1:8.

2.15 Post-Consumer Material: Finished products, packages or materials generated by a business or consumer that have served their intended end uses, and that have been recovered from or otherwise diverted from the waste stream for the purpose of recycling.

2.16 Recovered Material: Material that has been recovered from or otherwise diverted from the waste generated after a material manufacturing process. Recovered material may include post-consumer material, cuttings, trimmings,

obsolete inventories, and rejected unused stock, but does not include material capable of being re-used within the process that generated it.

2.17 Recyclable Package: 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.

2.18 Refillable Package: A rigid plastic packaging container that can be refilled by the product manufacturer at least five times with the original product held by that package and is proven to be routinely returned to the product manufacturer by the consumer for such a purpose.

2.19 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.).

2.20 Secondary Packaging: Any packaging or material other than primary packaging, including wrappers, boxes, and blister packs, but excluding shipping containers.

2.21 Skin Sensitizer: A substance that causes an immunologically mediated cutaneous reaction, also known as allergic contact dermatitis.

3.0 PRODUCT-SPECIFIC PERFORMANCE REQUIREMENTS

3.1 Standard Performance Requirements. Each product *as used*, when diluted with water from the cold tap at no more than 50°F, shall clean common soils and surfaces in its category effectively, as measured by a standard test method. Carpet cleaners may be diluted with warm or hot water where required by the test method or performance considerations. The following test methods are recommended:

General-purpose cleaners. The product shall remove at least 80% of the particulate soil in the American Society for Testing and Materials (ASTM) D4488-95, A5.

Bathroom cleaners. The product shall remove at least 75% of the soil in ASTM D5343 as measured by ASTM D5343.

Carpet cleaners. Using a standard test method, the manufacturer must demonstrate that its product performs as well as a conventional, nationally-recognized product in its category in both cleaning efficiency and resoiling resistance. Acceptable test methods/procedures to demonstrate performance

include, but are not limited to, the following sources: the American Association of Textile Chemists and Colorists (AATCC), ASTM, the Institute of Inspection, Cleaning and Restoration Certification (IICRC), the International Organization for Standardization (ISO), WoolSafe, the Carpet and Rug Institute (CRI) or laboratory testing conducted as part of a bid evaluation by a government purchasing entity.

Glass cleaners. The product shall achieve at least a rating of three in each of the following Consumer Specialty Products Association (CSPA) DCC 09 categories: soil removal, smearing, and streaking.

3.2 Alternative Performance Requirements. Alternatively, using standard test methods conducted under objective, reproducible laboratory conditions, a manufacturer can demonstrate that its product performs as well as or better than a conventional, nationally-recognized product in its category or achieves the removal efficiency defined in this section with alternate test methods and has a documented rationale for the method modification for Green Seal's review.

4.0 PRODUCT-SPECIFIC HEALTH AND ENVIRONMENTAL REQUIREMENTS

4.1 Toxicity. The *undiluted* product shall not have toxic characteristics such that it falls under the labeling requirements as a toxic or highly toxic product, as defined by Consumer Product Safety Commission regulations found at 16 Code of Federal Regulations (CFR) Chapter II, Part 1500.

4.2 Prohibition of Carcinogens, Mutagens, and Reproductive Toxins. The *undiluted* product shall not contain any ingredients that are carcinogens, mutagens or reproductive toxins. For the purposes of this standard, naturally occurring elements and chlorinated organics, which may be present as a result of chlorination of the water supply, are not considered ingredients 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.

4.3 Skin and Eye Irritation. The *undiluted* cleaning product shall not be corrosive to the skin, as tested using the OECD Guidelines for Testing Chemicals, Section 404 or the Human Skin Construct systems (Liebsch et al. 2000; Fentem et al. 1998). The *undiluted* product shall also not be corrosive to the eye as tested using the bovine opacity and permeability test (BCOP) (Sina et al. 1995) after a 10-minute exposure. 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.

4.4 Skin Sensitization. The *undiluted* product shall not be a skin sensitizer, as tested by the OECD Guidelines for Testing Chemicals, Section 406. Green Seal shall also accept the results of other standard test methods, such as those described in Buehler (1994) or Magnusson and Kligman (1969), as proof that the product or its ingredients are not skin sensitizers.

4.5 Aquatic Toxicity. 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. Aquatic toxicity tests shall follow the appropriate protocols in ISO 7346.2 for fish or OECD test guidance 203 for fish, OECD test guidance 201 for algae, and 202 OECD test guidance for daphnia.

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.

4.6 Aquatic Biodegradability. Each of the organic ingredients in the product *as used* shall exhibit ready biodegradability in accordance with the OECD definition except for the polymer portion of a carpet cleaner or a FIFRA-registered ingredient in a bathroom cleaner. However, all other ingredients in carpet cleaner or a FIFRA-registered bathroom cleaner must comply. Biodegradability shall be measured by one of the following methods: OECD TG 301A-F, ISO 9439 carbon dioxide (CO₂) evolution test, ISO 10708 (two-phase closed-bottle test), ISO 10707 (closed bottle test), or ISO 7827 (dissolved organic carbon removal).

Removal of dissolved organic carbon (DOC)	> 70%
Biological oxygen demand (BOD)	> 60%
% of BOD of theoretical oxygen demand (ThOD)	> 60%
% CO ₂ evolution of theoretical	> 60%

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 dissolved organic carbon (DOC) removal > 90%.

Testing is not required for any ingredient for which sufficient information exists concerning its biodegradability, either in peer-reviewed literature or databases or proving that the ingredient was tested in accordance with standard test procedures.

4.7 Eutrophic Agents. The product *as used* shall not contain more than 0.5% by weight of total phosphorus.

4.8 Air Pollutants. The product *as used* shall not contain substances that contribute significantly to the production of photochemical smog, tropospheric ozone, or poor indoor-air quality. The volatile organic content of shall be determined by California Air Resources Board Method 310 or as demonstrated through product constituent calculation, and shall not exceed the following:

- 0.1% by weight for dilutable carpet cleaners
- 1% by weight for bathroom cleaners
- 3% by weight for general-purpose cleaners
- 3% by weight for glass cleaners
- 3% by weight for ready-to-use carpet cleaners

4.9 Other Prohibited Ingredients. The *undiluted* product shall not contain the following ingredients:

- 2-Butoxyethanol
- Alkylphenol ethoxylates
- Phthalates
- Heavy metals, including but not limited to lead, hexavalent chromium, or selenium both in the elemental form or compounds.
- Ozone-depleting compounds
- Optical brighteners

4.10 Combustibility. The undiluted product shall not be combustible. The product or 99% by volume of the product ingredients shall have a flashpoint above 150 °F, as tested using either the Cleveland Open Cup Tester (ASTM D92-97) or a closed-cup method International Standards Organization (ISO) 13736 or ISO 2719. Alternatively, the product shall not sustain a flame when tested using ASTM D 4206.

4.11 Fragrances. Manufacturers shall disclose the use of any added fragrances on their material safety data sheets (MSDSs) and product labels. Any ingredient added to a product as a fragrance must follow the Code of Practice of the International Fragrance Association.

4.12 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 Recyclable Primary Package. The primary package shall be a recyclable package. If the primary package is not a recyclable package must be a refillable package. An exception may be made for lightweight packaging (e.g., pouches or bags) that represents a significant reduction in material use when compared with rigid packaging.

5.1.2 Recovered Material Content. The primary packaging shall contain the state-of-the-art amount of recovered and post-consumer content. Where a product's packaging is below these levels, the manufacturer must demonstrate that efforts have been made to use the maximum available post-consumer material in packaging.

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

5.1.4 Aerosol Cans. Aerosol cans shall be recyclable. Further, manufacturers of products packaged in aerosol cans must show that recycling programs are widely available where the product is sold. In addition, manufacturers of products packaged in aerosol cans must demonstrate why aerosol cans are the most suitable packaging for a given product considering environmental, health, and performance considerations.

5.1.5 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.

5.1.6 Other Restrictions. Phthalates are prohibited from being intentionally introduced, an exception is allowed for packages that would not have added phthalates 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 spray-dispenser bottles, and total packaging (primary plus secondary) is a reduction in packaging material use.

5.3 Ancillary Products. Products may contain disposable towelettes or other disposable wiping materials if they are made from 100% renewable materials including, but not limited to cellulosic materials, and meet the state-of-the-art amount of recovered material content.

6.0 LABELING REQUIREMENTS

6.1 The label must include detailed instructions for proper use to maximize product performance and minimize waste.

6.2 Where the product is intended to be diluted with water by the consumer prior to use, the label shall state clearly and prominently that dilution with water from the cold tap is recommended and shall state the recommended level of dilution in commonly understood measurements. Carpet cleaner labels shall specify the use of cold water for products that do not suffer significant performance degradation in cold water.

6.3 The label must include proper disposal instructions. If the product is a towelette or other disposable wipe product, the label must clearly indicate proper disposal of the wipes. For the package disposal, the label must include clear recycling instructions.

6.4 The label shall also include instructions for proper use of personal protective equipment.

6.5 If plastic, the packaging must be clearly marked with the appropriate Society of the Plastics Industry (SPI) symbol to identify the type of plastic for recycling.

6.6 The Green Seal Certification Mark may appear on the product's packaging.

6.7 The Green Seal Mark shall not be used in conjunction with any modifying terms, phrases, or graphic images that might mislead consumers as to the extent or nature of the certification.

6.8 Whenever the Certification Mark appears on a package or product, the product or package must contain a description of the basis for certification. The description shall be in a location, style, and typeface that are easily readable by

the consumer. Unless otherwise approved in writing by Green Seal, the description shall read as follows:

“This product meets the Green SealTM environmental standard for household cleaners based on its reduced toxicity, biodegradability, packaging, and other characteristics.”