



GC-11  
Green Seal™ Environmental Criteria for  
Powdered Laundry Bleach

**First Edition**

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THE MARK OF ENVIRONMENTAL RESPONSIBILITY

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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.

For additional information on Green Seal or any of its programs, contact:

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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.

## ENVIRONMENTAL STANDARD

1. **Scope** - This criteria document establishes environmental requirements for powdered laundry bleach.
2. **Definitions** - For the purpose of this criteria document, the following definitions apply:
  1. **Concentrate**: a powdered product that requires less than 2.0 ounces by weight per load of laundry.
  2. **Ingredient**: any constituent with which a product is formulated.
  3. **Primary packaging**: the material physically coming into contact with and containing the product.
  4. **Post-consumer material**: finished products, packages, or other recovered materials generated by a business or consumer that have served their intended end uses and that have been recovered or otherwise diverted from the waste stream for the purpose of recycling.
  5. **Recovered material**: material that has been recovered 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.
  6. **Secondary packaging**: any packaging material other than primary packaging, including wrappers, boxes, and blister packs, but excluding shipping containers.
3. **Performance Requirements**
  1. The product shall brighten household laundry effectively. Performance of the product shall be compared to the standard leading brand product of powdered laundry bleach as measured by comparison tests conducted in accordance with ASTM D 4265-83, Standard Guide for Evaluating Stain Removal Performance in Home Laundering. The detergent used with the powdered laundry bleach shall be a leading brand of dye-free, fragrance-free and optical brightener-free detergent. The following stains on both polyester and cotton shall be used: make-up, grape juice, spaghetti sauce, blood, grass, ball point pen ink, and modified artificial sebum and particulate soil for staining. A product meeting the performance criteria shall have a brightening performance of at least 80% of the brightening performance of the standard leading brand product.
  2. In lieu of section 3.1, data may be accepted from efficacy testing that is conducted by the manufacturer under objective, reproducible laboratory conditions and that clearly demonstrates that the product brightens household laundry effectively.
  3. The product shall be formulated to work effectively as a concentrate.

4. **The product shall be formulated to work effectively in cold (unheated) water.**

5. **Product Specific Environmental Requirements**

1. **Product Toxicological Requirements**

1. The product's ingredients shall have a low concern level for Acute Oral Toxicity, defined as an LD50 for white rats of greater than or equal to 2000 mg/kg by the 1994 U.S. Environmental Protection Agency (EPA) Minimum Premarket Data Set (MPD) study.
2. The product shall not be formulated with ingredients that are listed in the latest edition of the Annual Report on Carcinogens, U.S. Department of Health and Human Services, National Toxicology Program. The product shall not be formulated with ingredients known to cause reproductive toxicity, as listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986, excluding ethanol [Cal. Code of Regulations, Title 22, Division 2, Subdivision 1, Chapter 3, Sections 12000 et seq.].

Notwithstanding this provision, a product may be formulated with substances cited in section 4.2.4 of this standard up to the levels specified in that section.

2. **Product Environmental Requirements**

1. The product shall not be toxic to aquatic life, as measured by test methods found in 40 C.F.R. Part 797, Subpart B, and as determined by meeting the following three criteria for acute (Daphnia or fish), acute (algae), and chronic (Daphnia) effects:

<b>acute</b>	EC50 Daphnia (48 hr.) > 10 mg/l LC50 fish (96 hr.) > 10 mg/l
<b>acute</b>	EC50 algae (96 hr.) > 10 mg/l
<b>chronic</b>	EC50 Daphnia (21-day or 14-day minimum) > 10 mg/l

2. For purposes of demonstrating compliance with this requirement, the testing prescribed by the regulations is not required for the product if sufficient information exists concerning each ingredient, either in peer-reviewed literature or databases or based on tests that are conducted according to standard procedures, to demonstrate that the product is not toxic to aquatic life.
3. Each organic ingredient in the product shall exhibit ready ultimate biodegradability under aerobic conditions as measured by one of the following U.S. Environmental Protection Agency (EPA) methods found at 40 C.F.R. Part 835.3110 (Modified AFNOR

Test, Closed Bottle Test, Modified MITI Test, Modified OECD Test or Modified Sturm Test). Ready ultimate biodegradability shall be determined as follows:

Percentage removal of dissolved organic carbon (DOC) > 70% or  
 Percentage degradation from oxygen consumption > 60% or  
 Percentage biological oxygen demand (BOD) of > 60% or  
 theoretical oxygen demand (TOD) Percentage CO<sub>2</sub> evolution of  
 theoretical CO<sub>2</sub> evolution > 60%

For organic ingredients that do not exhibit ready ultimate biodegradability in any of these tests, the manufacturer may demonstrate biodegradability in sewage treatment plants using the Coupled Units Test found at 40 C.F.R. Part 835.3200 by demonstrating percentage 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 based on tests conducted according to standard procedures.

4. Phosphates and phosphonates, including sodium salts and potassium salts, shall not be present in the product in quantities above 0.5% by weight of total phosphorus.
5. The concentrations of the following in the undiluted product shall not exceed the levels specified below:

<b>Arsenic</b> - 0.5 mg/kg	<b>Cadmium</b> - 0.1 mg/kg
<b>Chromium</b> - 0.5 mg/kg	<b>Selenium</b> - 0.5 mg/kg
<b>Lead</b> - 0.5 mg/kg	<b>Nickel</b> - 0.5 mg/kg
<b>Mercury</b> - 0.02 mg/kg	

6. Testing for these elements shall comply with test methods described in 40 C.F.R. Part 136.

### 3. Packaging Requirements

1. As soon as practicable, considering existing inventories and obligations, the manufacturer shall use packaging that is state-of-the-art with respect to content of recovered and post-consumer material, source reduction, and recyclability. Requirements for recycled content may be waived for packages designed to be refilled by the consumer from bulk refilling systems.
2. Secondary packaging shall not be employed. Products shall not be packaged in primary packaging containing polyvinyl chloride.
3. The sum of the concentration levels of lead, cadmium, mercury, and hexavalent chromium present in any package, ink or packaging component must not exceed 100 parts per million by weight.

**Appendix A: Labeling Requirements for Certification by Green Seal™**

Unless otherwise approved in writing by Green Seal the following labeling requirements shall apply.

1. The Green Seal Certification Mark must appear on the product's packaging.
2. The Green Seal Certification 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.
3. Whenever the Green Seal Certification Mark appears on a package, the 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 Green Seal's environmental criteria for low toxicity, biodegradability, and reduced packaging."

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