



# GS-11 Green Seal™ Environmental Standard for Paints

**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 Standard establishes environmental requirements for paints. The standard does not include stains, clear finishes, or paints sold in aerosol cans.

### 2 Definitions.

For the purpose of this Standard, the following definitions apply.

**2.1 Paints:** Liquid, liquefiable or mastic composition that is converted to a solid protective, decorative, or functional adherent film after application as a thin layer. These coatings are intended for on-site application to interior or exterior surfaces of residential, commercial, institutional or industrial buildings.<sup>1</sup>

**2.2 Volatile Organic Compounds (VOCs):** Compounds as defined by U. S. Environmental Protection Agency (EPA) in 40 CFR  $\alpha$  51.100 (s), (s) (1).

**2.3 Aromatic Compounds:** Hydrocarbon compounds containing one or more 6-carbon benzene rings in the molecular structure.

### 3 Product-Specific Performance Requirements.

**3.1 Interior Topcoats.** Products intended for interior opaque topcoat use shall meet the following requirements.

**3.1.1 Scrubbability (Abrasion Resistance).** The product shall demonstrate at least 100 cycles (200 separate strokes) before failure, as determined by American Society for Testing and Materials (ASTM) D2486-89, *Standard Test Method for Scrub Resistance of Interior Latex Flat Wall Paints*.

**3.1.2 Hiding Power (Opacity).** The product shall demonstrate a minimum 0.95 contrast ratio at 400 square feet per gallon as determined by ASTM D2805-88, *Standard Test Method for Hiding Power of Paints by Reflectometry*. Compliance will be determined by testing a white paint having a minimum 80% reflectance.

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<sup>1</sup> ASTM D16-91, *Standard Terminology Relating to Paint, Varnish, Lacquer, and Related Products*. Stains and clear finishes, which are included in the ASTM definition, are not covered by this standard.

**3.1.3 Washability (Stain Removal).** The product shall demonstrate the following minimum requirements for stain removal as determined by ASTM 4828-91 Mechanical Method, *Standard Test Method for Practical Washability of Organic Coatings*.

Flat <sup>2</sup>	5 minimum rating
Non-Flat	7 minimum rating

**3.2 Exterior Topcoats.** Products intended for exterior opaque topcoat use shall meet the following requirements.

**3.2.1 Hiding Power (Opacity).** The product shall demonstrate a minimum 0.95 contrast ratio at 400 square feet per gallon as determined by ASTM D2805-88, *Standard Test Method for Hiding Power of Paints by Reflectometry*. Compliance will be determined by testing a white paint having a minimum 80% reflectance.

#### 4 Product-Specific Environmental Requirements.

##### 4.1 Chemical Component Limitations.

**4.1.1 VOCs.** The VOC concentrations of the product shall not exceed those listed below as determined by U. S. Environmental Protection Agency (EPA) Reference Test Method 24 (Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coatings), Code of Federal Regulations Title 40, Part 60, Appendix A.

The calculation of VOC shall exclude water and tinting color added at the point of sale.

##### Interior Coatings:

Coating Type	VOC weight in grams/liter of product minus water
Non-flat <sup>3</sup>	150
Flat	50

##### Exterior Coatings:

Coating Type	VOC weight in grams/liter of product minus water
Non-flat <sup>4</sup>	200
Flat	100

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<sup>2</sup> If the manufacturer has not characterized the paint as to gloss, the specular gloss level at 60° will be determined. Flat paints are those which register less than 5 and non-flat paints are those which register a 5 or greater. The gloss reading will be determined by ASTM D523-89, *Standard Test Method for Specular Gloss*.

<sup>3</sup> See note # 2.

<sup>4</sup> See note #2.

**4.1.2 Aromatic Compounds.** The product must contain no more than 1.0% by weight of the sum total of aromatic compounds. Testing for the concentration of these compounds will be performed if they are determined to be present in the product during a materials audit.

**4.2 Chemical Component Restrictions.** The manufacturer shall demonstrate that the following chemical compounds are not used as ingredients in the manufacture of the product.

**4.2.1 Halomethanes**

methylene chloride

**4.2.2 Chlorinated ethanes**

1,1,1-trichloroethane

**4.2.3 Aromatic solvents**

benzene  
toluene (methylbenzene)  
ethylbenzene

**4.2.4 Chlorinated ethylenes**

vinyl chloride

**4.2.5 Polynuclear aromatics**

naphthalene

**4.2.6 Chlorobenzenes**

1,2-dichlorobenzene

**4.2.7 Phthalate esters**

di (2-ethylhexyl) phthalate  
butyl benzyl phthalate  
di-n-butyl phthalate  
di-n-octyl phthalate  
diethyl phthalate  
dimethyl phthalate

**4.2.8 Miscellaneous semi-volatile organics**

isophorone

**4.2.9 Metals and their compounds**

antimony  
cadmium  
hexavalent chromium  
lead  
mercury

**4.2.10 Preservatives (antifouling agents)**

formaldehyde

**4.2.11 Ketones**

methyl ethyl ketone  
methyl isobutyl ketone

**4.2.12 Miscellaneous volatile organics**

acrolein  
acrylonitrile

**5 Packaging Requirements.****5.1 Toxics in Packaging.**

**5.1.1** The manufacturer shall demonstrate that paint cans and their components are not fabricated with lead.

**Appendix: 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 packaging.
- 2** Whenever the certification mark appears on a package or product, the product or package must contain a description of the basis for the certification. The description shall be in a location, style, and typeface that are easily readable by the consumer. The description shall read as follows:  
  
**This product meets Green Seal environmental standards for volatile organic compounds (VOCs) and other ingredients.**
- 3** The packaging shall be accompanied by a brief statement discouraging disposal into drains and encouraging consultation with local authorities for disposal requirements or recycling opportunities.
- 4** Paints which have been formulated without VOCs shall be designated Class A and may contain a special designation to that effect on the label.