



GC-3 Green Seal™ Environmental Criteria for Anti-Corrosive Paints

Second Edition

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THE MARK OF ENVIRONMENTAL RESPONSIBILITY

Green Seal, Inc. • 1001 Connecticut Ave., NW, Suite 827 • Washington, DC 20036-5525 • (202)
872-6400 • Fax (202) 872-4324 www.green seal.org

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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:

Green Seal
1001 Connecticut Avenue, NW, Suite 827
Washington, DC 20036-5525
(202) 872-6400
www.greenseal.org

FOREWORD

A. Certification. This Environmental Criteria Document 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. Green Seal solicits information and advice on issues associated with these Criteria.

B. Compliance with the Standard. Compliance with these Criteria 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 Criteria. Green Seal's Standards and Criteria Documents 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 these criteria.

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 Criteria Document.

K. Labeling Requirements. This Criteria Document 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 CRITERIA

1. Scope

This criteria document establishes environmental requirements for anti-corrosive paints.

2. Definitions

For the purposes of this criteria document, the following definitions apply:

2.1 Anti-corrosive Paints: Coatings formulated and recommended for use in preventing the corrosion of ferrous metal substrates.

3. Product Specific Performance Requirements

3.1 Adhesion: the product shall demonstrate a minimum of Classification 2B according to ASTM D3359-90 Method B, *Standard Test Methods for Measuring Adhesion by Tape Test*.

3.2 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*. A white paint shall be used.

3.3 Corrosion Resistance. [Reserved] ¹

4. Product-Specific Environmental Requirements.

4.1 Chemical Component Limitations

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

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

¹ The salt-fog test, the traditional method for measuring corrosion resistance, has many limitations. As a result, the paint industry is in the process of developing alternatives via the ASTM and other processes. Green Seal believes it is inappropriate to adopt a corrosion resistance performance test before the industry has reached consensus on appropriate test protocols. While many tests are currently in use by various manufacturers, none has gained widespread acceptance. Green Seal will modify the criteria document when an appropriate protocol is developed.

<u>Coating Type</u>	<u>VOC weight in grams/liter of product minus water</u>
Gloss ²	250
Semi-Gloss	250
Flat	250

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

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 product beyond incidental contamination:

4.2.1 Halomethanes

Methylene chloride

4.2.2 Chlorinated ethane's

1, 1, 1-trichloroethane

4.2.3 Aromatic solvents

Benzene

Toluene (methylbenzene),

Ethyl benzene

4.2.4 Chlorinated ethylene's

Vinyl chloride

4.2.5 Poly-nuclear 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 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 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 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 Green Seal Environmental Criteria for anti-corrosive paints. Product does not exceed 250 g/l volatile organic compounds (VOCs), which can contribute to air pollution. Product does not contain certain toxic chemicals found in similar paints.
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.