January 11, 2016

Revision of Green Seal's Laundry Care Product Standards, GS-48 and GS-51

This document presents the comments Green Seal received from stakeholders on proposed changes to GS-48 and GS-51 during the Public Comment Period – from October to December 2015. This document also provides Green Seal's responses to each comment.

The following organizations participated in the Public Comment Period, and played a vital role in this revision. With their feedback, we are able to develop relevant environmental leadership standards which encourage the design, manufacture, and end use of environmentally preferable products. Their assistance and involvement is greatly appreciated.

Participating Organizations:

Dell Tech Laboratories, LLC
IFRA
PortionPac
Toxics Use Reduction Institute (TURI)
Women's Voices for the Earth

Product-Specific Performance Requirements

GS-48 and GS-51, Section 2.0, Introduction

Comment: Part of the testing conducted utilized by some include the use of a terg-o-tometer which allows for smaller volumes of cleaning wash water. Is there a way to update the standard to provide a scalable chart for wash load rates? Standard currently lists the normal; soil loading of 4-6 pounds. What volume unit is that based on so that the smaller wash vessels of the Terg-o-tometer can be appropriately loaded.

GS Response: We acknowledge the benefits of using a terg-o-tometer to economically conduct product testing. Green Seal's policy is to accept equivalent test methods at our sole discretion if it can be demonstrated that the test uses an objective, scientifically-validated method and is conducted under controlled and reproducible laboratory conditions. This option is described in GS-48 and GS-51 in Section 2.2, Alternative Performance Testing. Flexibility is needed for alternative performance testing, as described below. Therefore, Green Seal will continue to accept the use of a terg-o-tometer for product performance evaluations but will not provide a scalable chart for wash load rates.

In all cases, applicants must submit the product performance evaluation report that includes the dosage and the method of dosing for both the product and the comparison benchmark product. It is recommended that Green Seal's Certification Department review any alternative test methods and conditions prior to testing. As mentioned in the stakeholder's comment, tests that use a Terg-o-tometer require a scaling of the wash load, and also require the dosing per load conditions to be specified for the product so that the compaction and concentration requirements are met. The volume of wash water varies for the normal setting depending on the machine type, so the laboratory would need to determine the appropriate adjustment for the machine type that is being replicated.

Comment: Appreciation for the proposed streamlining for testing procedures, section deletion for the collection of energy, water, etc., reporting criteria, and the clarification for labeling. All these items should speed up the certification process without any significant detriment to the standard.

GS Response: Thank you for your comments.

GS-48, Section 2.1, Product Performance

Comment: For benchmark wash temperatures, I think you should cite the recommended ASTM D4265 based on machine type for all bench marks. The draft states "*If using a market-leading product, set to the lowest temperature recommended by the manufacturer"*, I have never seen a manufacturer cite a specific temperature on the label, at best it will say cold, warm, hot.

Response: Green Seal understands that product labels may state "cold," "warm," or "hot." We recognize that there is no universally agreed-upon temperature reference to use for cold, warm, or hot.

Therefore, the recommended change has been made.

2.1 Product Performance. Each product shall demonstrate that it performs its intended use effectively at the most dilute/least concentrated manufacturer-recommended dilution level for routine use. Concentrate products shall be diluted, as required, just prior to testing using unheated water from the tap. Performance tests shall be conducted as comparison tests against a *benchmark product* under the following test conditions:

Product	Wash Cycle Temperature	Rinse Cycle Temperature	Water Hardness
Benchmark Product	~~• If using an AATCC reference detergent, set to the temperature specified by ASTM D4265 for the machine type being used~~ ~~• If using a market-leading product, set to the lowest temperature recommended by the manufacturer~~ Set to the temperature specified by ASTM D4265 for the machine type being used[2]	~~Set to the temperature specified by AATCC 124~~[3] Tap Cold[3]	Moderately hard water (120 ppm – 150 ppm) ** The calcium/ magnesium ratio of the hardness minerals (expressed as calcium carbonate) should be adjusted for different water hardness according to ASTM D4265[4]
Test Product	Cold water (~~80~~ 68 +/- 5°F, ~~27~~ 20 +/- 3°C)* or the lowest claimed effective temperature, if lower than cold water		

[3] Tap cold temperature for Rinse is not meant to be controlled. Tap cold is equivalent to the water temperature entering the home or representative laboratory which is dependent on geography and time of year. The tap water temperature can vary globally in customer homes. This variation can have a wide range between 5 to 49 ºC (40 to 120ºF).

Comment: I do not have opposition to the 68F wash temp. If it sets the bar for reduced energy use, well that is part of the Green Seal mandate isn't it?

But there is a technical challenge in the revision.

The wash temp is set for 68F but the rinse is citing AATCC 124 temp of 85F.

It does not make sense to have a rinse temp higher than the wash temp. I also do not believe 85F for the rinse temp is practical. Most machines for the rinse cycle use the cold water line only, it is very unlikely that the cold water temp will be 85F, even in warm climates. This would not reflect consumer experience. I would recommend "ambient" rinse, just as ASTM D4265 does.

Response: Green Seal acknowledges these comments. The rinse cycle temperature should be cold water. As the commenter noted, ASTM D4265 references "ambient" temperature for the rinse cycle. This is consistent with AATCC Monograph M6 "Standardization of Home Laundry Test Conditions" which recommends "Tap cold" for the rinse cycle with a footnote as follows: "Tap cold temperature for Rinse is not meant to be controlled. Tap cold is equivalent to the water temperature entering the home which is dependent on geography and time of year. The tap water temperature can vary globally in customer homes. This variation can have a wide range between 5 to 49 ºC (40 to 120ºF)."

Since the cold tap water temperature does vary across the country between laboratories, a specific number for rinse temperature should not be required.

Based on the above comments and reasoning, the rinse temperature will be changed to "tap cold".

Comment: I also oppose citing external references like AATCC. You have no control over when these standards change and it requires the applicant to buy additional standards, I think all wash conditions (temp, hardness etc) should be embedded in the Green Seal standard.

Response: Green Seal policy is to reference validated industry-accepted performance standards and specifications when they exist for a certain product category. In the case of laundry care products, standards from AATCC and ASTM are appropriate for demonstrating that a product meets industry requirements. A summary of test requirements are provided in the footnotes beneath the performance table.

Therefore, no changes were made to the standard.

GS-48 and GS-51, Sections 2.1.1.1, Cleaning, and 2.1.1.2, Color Care

Comment: Your effort to streamline the process and update to become compatible is appreciated. Having run this evaluation for several projects this simplification of the standard will work to improve project time without sacrificing end results.

Comment: Having run this evaluation for several projects, this simplification of the standard will work to improve project time without sacrificing end results.

GS Response: Thank you for your comments.

Comment: For colorfastness I think you should cite the swatches & instrumental evaluation used in ASTM D5548, while the actual washing procedure is still ASTM D4265 or AATCC 124. Without specifying the swatches to be used there is no consistency among registrants. It should be a level playing field. I could easily pick swatches that are resistant to color loss or fading and stack the deck to pass the test.

Or, you can cite the color swatches in the Green Seal Standard; Nylon 6.6 dyed Acid red 151, Cotton Print Cloth Direct Blue 90, Cotton Print Cloth Direct Blue 1. All available from suppliers such as Test Fabrics or SDL Atlas.

Response: Green Seal appreciates this comment. In the case of performance testing in GS-48 and GS-51, all tests must be comparative, i.e., the Test Product must perform as well as or better than the

Benchmark Product. The swatches selected for one must be the same as for the other, ensuring a consistent comparison of the products.

Also, there is no single test that will give the overall performance of a laundry product. That is why the detergent must be tested under several conditions (i.e., for cleaning and for color care). So it is unlikely that a poorly performing detergent will pass both tests even if the swatches chosen in color care are resistant to fading. Therefore, no changes were made.

Comment: I am also opposed to visual comparisons. It is too subjective. There is plenty of economical options to use Image Analysis Software to get quantitative results. Everyone has a digital camera now (iphone), and software like Adobe Photoshop or the open source ImageJ can be used to calculate results.

Response: Green Seal acknowledges these comments. At this time Green Seal's research has indicated that the methods and test result analyses presented in the standard are the best available and allow flexibility in testing, especially if an alternative performance method is used. Therefore, the standard will not be changed.

GS-48, Section 2.1.2, Stain and Spot Removal Performance

Comment: Should this be clarified further by a changing the end of the soil list to the following: "…including any additional stains marketed for use by the product." As written one could assume that you would need to do 4 from the list in addition to those soils listed for the product.

Or it could read this way: "for a minimum of four of the stains marketed for use by the product or any of the following: tea blueberry grass ballpoint pen ink used motor oil blood wine coffee mustard"

GS Response: Thank you for this comment. We support the further clarification of this criterion in both standards. The revised section now includes the following revised language (revision in red):

2.1.2 Stain and Spot Removal Performance.[6] *Stain removing products* and *bleaching products* shall demonstrate performance equivalent to or better than an appropriate *benchmark product* in their category for removing stains on manufacturer recommended laundry (e.g., cotton, polyester, or cotton/polyester blend) using ASTM D4265, with instrumental or visual analysis for four of the following stains: tea, blueberry, grass, ballpoint pen ink, used motor oil, blood, wine, coffee, mustard, spaghetti sauce, gravy, makeup, chocolate syrup, grape juice, or and a modified Spangler artificial sebum soil. Any stains marketed for use by the product shall be included in the four stains.

GS-48 and GS-51, Section 2.1.1.3, Fabric Appearance

Comment: I have no opposition to the removal of Fabric Appearance, I never felt it was the detergent that damages fabrics. The mechanical action of the washer & dryer is likely the real cause of damage. An option may be to retain it specifically for products that make claims of fabric protection. (Stretching, wrinkle, piling etc)

Green Seal Response: Thank you for your comments.

Section 6.0, Labeling

GS-48, Section 6.6 and GS-51, Section 6.7, Fragrance and Allergen Labeling

Comment: These standards do not detail or provide a definition of allergens for these purposes. Additionally, the requirement to list a fragrance allergen on the SDS is inappropriate as the fragrance may not drive the hazards of the product as outlined by OSHA's Hazard Communication regulations.

Proposed revision: "***shall also indicate allergen components (defined in the list of allergens contained in the EU Detergents Regulation) in the product present at or above recommended labeling levels.***"

> **Green Seal Response:** Thank you for your comments on the definition of "allergen" and the labeling requirements. A definition for allergens is necessary for clarity in these standards.
>
> Both GS-48 and GS-51 already include the following definition of the term "allergen" that matches the stakeholder's suggestion.
>
> > **Allergen.** Allergenic substances included in Annex III of the European Union Regulation 1223/2009 on Cosmetic Products, 30 November 2009, and those listed by the FDA (including food allergens Food Allergen Labeling and Consumer Protection Act of 2004 (Public Law 108-282, Title II).
>
> Therefore, no changes were made in response to this comment.
>
> This definition is included in Annex A of the standards. Annex A was not included in the standard development Rationale because there were no proposed revisions to this section. In future standard development projects, Green Seal will consider including references to Annex A in order to provide the full context.

GS-48 Section 6.6.2, and GS-51, Section 6.7.2, Fragrances

Comment: We would like to provide some clarification regarding the list of fragrance materials on the IFRA website. The International Fragrance Association (IFRA) is responsible for setting Standards which form the basis for the globally accepted and recognized risk management system for the safe use of fragrance ingredients. The IFRA Standards are based on risk assessment carried out by an independent expert panel. IFRA also publishes the IFRA Code of Practice, of which the Standards are a component. The IFRA website contains a list of fragrance ingredients used by IFRA affiliated members around the world, from which fragrances are formulated, often referred to as the "Transparency List." IFRA does not approve individual fragrance materials or formulations, but develops the Standards and Code of Practice that direct the safe use of these fragrance materials.

Proposed revision: ***The general term 'fragrance' may be used for fragrance components; as long as***

1. ***The use of the fragrance is in compliance with the IFRA Code of Practice and Standards***

OR

2. ***Alternatively, the product label may provide a link to the IFRA list of fragrance materials, or a subset of this list.***

Green Seal Response: Thank you for your comment.

GS-48 and GS-51, Section 3.19 already require "compliance with the IFRA Code of Practice," so no change is necessary.

> **3.19 *Fragrances.** All *fragrances* used shall be produced and handled following the code of practice of the International Fragrance Association (IFRA).

The criterion language will be changed to accurately reference IFRA's "Transparency List" as an option for this labeling requirement. Green Seal has updated the criterion as follows:

> **GS-48, 6.6.2 Fragrances.** The general term 'fragrance' may be used for *fragrance components*; in this case, the product label shall direct end-users to additional information. A list of the *fragrance components* that are present in the product at 0.01% or more shall be made available to end-users in an easily accessible means, such as the company website or technical data sheet. Chemical class descriptors may be used to protect trade secret information. Alternatively, the product label may provide a link to the ~~list of fragrance materials approved by IFRA~~ IFRA Transparency List[16] or a subset of this list.
>
> [16] IFRA's Transparency List, http://www.ifraorg.org/en-us/ingredients#.VjpTmitWLxw
>
> **GS-51, 6.7.2 Fragrances.** The general term 'fragrance' may be used for *fragrance components*; in this case, the product label shall direct end-users to additional information. A list of the *fragrance components* that are present in the product at 0.01% or more shall be made available to end-users in an easily accessible means, such as the company website or technical data sheet. Chemical class descriptors may be used to protect trade secret information. Alternatively, the product label may provide a link to the ~~IFRA list of fragrance materials~~ IFRA Transparency List[16] or a subset of this list.
>
> [16] IFRA's Transparency List, http://www.ifraorg.org/en-us/ingredients#.VjpTmitWLxw

GS-48, Section 6.6.2, and GS-51, Section 6.7.2, Fragrance Labeling

Comment: In the rationale for this section, it states: "The current requirement that fragrance composition be provided for all intentionally added fragrance components is not practicable for proprietary fragrance mixtures."

We disagree with this assertion, and do not believe it represents the thinking of cleaning product manufacturers which are leading in the area of ingredient disclosure. There are several cleaning product manufacturers including SC Johnson and Seventh Generation who do find it practicable to disclose fragrance components - on a product-specific basis. This ingredient disclosure is of tremendous benefit to consumers who react to certain fragrances, but have never before had the information to understand which fragrance ingredients are actually the triggers for their symptoms. This allows consumers to avoid fragranced products that are problematic, and enjoy fragranced products that do not contain the ingredients of concern to them.

Companies and brands receiving the Green Seal should also be held to the highest standards of disclosure to move the whole industry forward. While some fragrance manufacturers may still claim that a list of ingredients in a fragrance is proprietary information, the reality of today's world with sophisticated GC-MS technology, is that any competitor can independently manufacture that list of ingredients from a fragranced product quite easily. A list of ingredients simply does not meet the definition of trade secret given the ability to discern it by independent means. And given the tremendous public health benefit to the disclosure of fragrance ingredients to the consumer, Green Seal should be leading in this area, rather than supporting the continuance of outdated and unnecessary practices which prevent a consumer's right to know what they are being exposed to when using a product.

Response: Thank you for your comments. We understand the usefulness of ingredient disclosure, and acknowledge that a number of cleaning product manufacturers choose to provide full disclosure as a response to consumer concern. Consumers who react to certain fragrances may prefer to choose fragrance-free or full-disclosure products. Green Seal's standards define the characteristics of an environmental leadership product that is available on today's market, focusing on the major life-cycle impacts of the products, and are not intended to address all possible impacts. In our standard development process, we consider the product formulations, identify which hazardous chemicals should be prohibited or restricted, transportation of the products, the packaging materials, and product labeling. In our certification process, trace levels of fragrance ingredients are evaluated by Green Seal to ensure that they meet all of the requirements in the standard (see below), removing the need for additional full disclosure on the label. For our mission, a product can be designed at environmental leadership levels without having full ingredient disclosure on its label.

Green Seal reviews each intentionally added ingredient in a product regardless of the amount added or its level of concentration in the product. We also look at any contaminant that exists in the product above .01%. For our laundry care product standards, we verify that none of the intentionally added ingredients or contaminants are phthalates, formaldehyde donors, carcinogens, mutagens, reproductive toxins, triclosan, specific heavy metals, or ozone depleting compounds. If consumers choose to purchase a Green Seal-certified product, they will not necessarily know each ingredient in the product, but can be confident that each ingredient has been reviewed according to the standard. For example, Section 6.7 in GS-48 and GS-51 also requires that the product label disclose the presence and identity of any allergen that exists in the product at any level. The full review of products and the labeling disclosure for fragrances and allergens ensure that Green Seal's mission of identifying leadership products that are protective of health and the environment is achieved.

Therefore, no changes were made.