CALL FOR COMMENTS

Proposal for Revisions to the GS-11 Standard for Paints, Coatings, Stains, and Sealers

February 17, 2021. Green Seal® is inviting feedback on proposed revisions to the GS-11 requirements for volatile organic compounds (VOCs) and prohibited chemicals. We are seeking comments from all stakeholders including industry experts, public health researchers, product designers, raw material suppliers, product testing laboratories, purchasers, end users, and the public. Instructions for submitting comments are on Page 3 of this document.

Summary of Proposed Revisions:

> **Updates to VOC Content Limits and VOC Definition:** All products must comply with the VOC content limits defined in California Air Resources Board (CARB) Suggested Control Measures for Architectural Coatings (2007).
>
> **New Criterion: Emissions Evaluation:** A VOC emissions evaluation must be conducted according to the State of California's Department of Public Health Standard Method "CDPH v1.2." Products must meet VOC limits specified in the CDPH Standard.
>
> **Updates to Prohibited Ingredients:** Methylene chloride and perchloroethylene are prohibited from being intentionally added at any level. These chemicals are currently prohibited at or above 0.01 percent due to their classifications as carcinogens and hazardous air pollutants, and their categorization as halogenated solvents.

Green Seal® is the leading U.S. ecolabel, symbolizing transparency, integrity, and proven environmental leadership. We develop life-cycle-based standards and certify products and services that can prove they meet our strict criteria for human health, reduced environmental impacts, and effective performance. Operating as a nonprofit since its founding in 1989, Green Seal has certified thousands of products and services in over 450 categories, and is specified by countless schools, government agencies, businesses and institutions.

Document Guide

Section I. Instructions for Submitting Comments

Green Seal develops standards though an open, transparent process that prioritizes public and stakeholder input. Public comment periods are carried out to solicit input and define Green Seal's intended outcomes for product certification against the new or revised criteria.

Guidelines for Submitting Comment

- Comments should be specific in nature.
- Comments should include a technical or market-focused justification.
- Comments should include references from reputable sources.
- Comments should include actionable solutions.

Public Comment Closing Date

This comment period is open for 30 calendar days. The comment period closes on March 19.

Submit Comments via Email

Submit all comments to standards@greenseal.org using the subject line: "GS-11 Standard Revision."

Requests for Comment Period Extension

Any request for comment period extensions should be submitted via email to standards@greenseal.org. If granted, extensions will be publicly announced on Green Seal's website.

Comment Review Process

Upon receiving comments, Green Seal will confirm receipt and may reach out to schedule a brief conference call to request clarifications.

Within 90 days of the close of the comment period, Green Seal publishes a Response to Comments document which includes the text of all written comments submitted during the Public Comment Period and summarizes any actions taken or justifications for inaction regarding the changes to the standard.

For Questions About this Process

For other inquiries, contact Director of Science and Standards, Brie Welzer, at bwelzer@greenseal.org.

Section II. Proposal Overview

GS-11 Standard Edition 1.0 was issued in 1993. Since then, GS-11 has undergone revisions and expansions to reflect changes in science, technology, and industry practices, and to improve the efficiency of the certification process. The current version, Edition 3.2, issued in 2015, covers paints, coatings, stains, and sealers which are intended for use on interior or exterior surfaces of buildings and other structures.

In 2019, Green Seal evaluated the GS-11 Standard and identified several improvements that would result in a more accurate definition of sustainability leadership products on the North American market. Green Seal also identified improvements that would put the GS-11 Standard in alignment with the Low Emitting Materials requirements of the LEED and WELL building certification programs.

In 2020, Green Seal conducted outreach to a diverse range of stakeholders to gauge support for these changes, to confirm that these changes will allow the standard to accurately reflect leadership on today's markets, and to verify feasibility of the standard for manufacturers of various sizes. The results of the work conducted in 2019 and 2020 are defined, herein. Below is a summary of the proposed revisions to the GS-11 Standard:

VOC Content Limits: All products must comply with the VOC content limits defined in California Air Resources Board (CARB) Suggested Control Measures for Architectural Coatings (SCM 2007). In the current edition of this standard, six product types are granted exceptions to the CARB limits; this revision proposes a deletion of those exceptions.

New Criterion: VOC Emissions Evaluation for Interior Products: A VOC emissions evaluation must be conducted according to the State of California's Department of Public Health Standard Method "CDPH v1.2." Products must meet the emissions limits for the 35 target VOCs specified in that standard method. This additional requirement is intended to increase health protections for building occupants and result in overall healthier indoor environments.

Chemicals Prohibitions: Methylene chloride and perchloroethylene are prohibited at or above 0.01 percent. Green Seal proposes to prohibit these two chemicals from being intentionally introduced to products at any level.

Section III. Red-Lined Tracked Changes

The boxed text in this section provides a tracked-changes view of the proposed revisions.

The red text illustrates proposed additions. The text ~~with strikethrough lines~~ illustrates proposed deletions.

VOC Content Limits, Alignment with CARB Suggested Control Measures

GS-11, Edition 3.2, Criterion 3.4 includes exceptions for six product types.

Green Seal proposes to delete all exceptions, thus requiring all product types to comply with the VOC content limits set by the CARB Suggested Control Measures (2007). Information on Green Seal's intended health and environmental outcomes for setting VOC content limits can be found in Section IV of this document.

3.4 Volatile Organic Compounds (VOCs) Content Limits. The *VOC* content of the product shall not exceed the ~~current~~ content limits for its product category as set by CARB Suggested Control Measure for Architectural Coatings (2007). ~~unless specified otherwise in this standard.~~

- ~~*Floor paints* shall meet the *VOC* limits established by CARB for *floor coatings*.~~
- ~~*Anti-corrosive coatings* shall meet the *VOC* limits established by CARB for rust preventative coatings.~~
- ~~*Intumescent coatings* shall meet the *VOC* limits established by CARB for *fire resistive coatings*.~~
- ~~*Sealers* and *waterproofing sealers* labeled for use on wood or metal substrates shall meet the *VOC* limits established by CARB for wood coatings.~~

~~**Exception:** For the following product types, the VOC limits listed in the table below will be used instead of the applicable CARB limits:~~

~~**Product Type**~~	~~***VOC* level (g/L)~~
~~*Reflective Wall Coatings*~~	~~50~~
~~*Reflective Roof Coatings*~~	~~100~~
~~*Varnishes*~~	~~350~~
~~*Conjugated Oil Varnish*~~	~~450~~
~~*Lacquer*~~	~~550~~
~~Clear *Brushing Lacquer*~~	~~680~~

New Requirement for Interior Products: VOC Emissions Evaluation

Green Seal proposes an additional requirement to verify protections for human health and indoor environmental quality. Green Seal proposes that all interior products shall be required to undergo an evaluation emissions in accordance with the California Department of Public Health (CDPH) Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2 (2017), commonly referenced as "CDPH Standard Method v1.7." The test method states allowable concentrations for 35 target VOCs.

Information on Green Seal's intended health and environmental outcomes for requiring emissions testing can be found in Section IV of this document.

3.6 VOC Emissions Evaluation. Products intended for interior application shall be tested according to, and meet the emissions limits[17] specified in, the California Department of Public Health (CDPH) Standard Method v1.2 (2017). As specified by the CDPH Standard Method, product specimens must undergo testing for the full the 14-day (336 hours) period.

Products marketed for use in school classrooms must be evaluated using the classroom scenario. Products marketed for use in other spaces must be evaluated using the default private office scenario.

Laboratories that conduct the tests must be accredited under ISO/IEC 17025 for the test methods they use.
Note: See Appendix 3 for CDPH v1.2 emissions limits, i.e., maximum allowable concentrations.

[28] Products intended to be applied to substrates within the building's waterproofing membrane
[29] See Appendix 3, herein, for maximum allowable concentrations specified in the CDPH Standard Method v1.2.

For demonstrating conformance to this requirement, manufacturers would submit a test report or similar documentation, including the chosen scenario, product emission results for the 35 target VOCs, the total VOC at 14-day, and evidence of the laboratories accreditation under ISO/IEC 17025.

Additionally, for simplicity, clarity, and transparency, in the case that the Emissions Evaluation requirement is enacted into the GS-11 Standard, Green Seal will insert a new informational appendix with an excerpt of the CDPH Standard Method: "Table 4-1," which lists the threshold limits.

APPENDIX 3 – CDPH v1.2 Emissions Limits / Target CREL VOCs (Informative)

Below is an excerpt of the CDPH Standard Method, v1.2 (2017).

Table 4-1 Target CREL VOCs and their maximum allowable concentrations

No.	Compound Name	CAS No.	Allowable Conc.[a] ($\mu g/m^3$)
1	Acetaldehyde	75-07-0	70
2	Benzene	71-43-2	1.5 [b]
3	Carbon disulfide	75-15-0	400
4	Carbon tetrachloride	56-23-5	20
5	Chlorobenzene	108-90-7	500
6	Chloroform	67-66-3	150
7	Dichlorobenzene (1,4-)	106-46-7	400
8	Dichloroethylene (1,1)	75-35-4	35
9	Dimethylformamide (N,N-)	68-12-2	40
10	Dioxane (1,4-)	123-91-1	1,500
11	Epichlorohydrin	106-89-8	1.5
12	Ethylbenzene	100-41-4	1,000
13	Ethylene glycol	107-21-1	200
14	Ethylene glycol monoethyl ether	110-80-5	35
15	Ethylene glycol monoethyl ether acetate	111-15-9	150
16	Ethylene glycol monomethyl ether	109-86-4	30
17	Ethylene glycol monomethyl ether acetate	110-49-6	45
18	Formaldehyde	50-00-0	9 [c]
19	Hexane (n-)	110-54-3	3,500
20	Isophorone	78-59-1	1,000
21	Isopropanol	67-63-0	3,500
22	Methyl chloroform	71-55-6	500
23	Methylene chloride	75-09-2	200
24	Methyl *t*-butyl ether	1634-04-4	4,000
25	Naphthalene	91-20-3	4.5
26	Phenol	108-95-2	100
27	Propylene glycol monomethyl ether	107-98-2	3,500
28	Styrene	100-42-5	450
29	Tetrachloroethylene	127-18-4	17.5
30	Toluene	108-88-3	150
31	Trichloroethylene	79-01-6	300
32	Vinyl acetate	108-05-4	100
33-35	Xylenes, technical mixture (m-, o-, p-xylene combined)	108-38-3, 95-47-6, 106-42-3	350

[40]https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/CDPH%20Document%20Library/CDPH-IAQ_StandardMethod_V1_2_2017_ADA.pdf

Prohibition of Methylene Chloride and Perchloroethylene

To further ensure human health protections and incentivize safer supply chains, Green Seal proposes to prohibit these two chemicals from being intentionally introduced to products at any level.

To certify against this requirement, Green Seal would verify that these two chemicals were not intentionally added at any level and do not exist as contaminants at, or above, 0.01% in the final product.

3.2 Prohibited Ingredients. The product shall not contain the following *ingredients*:

- 1,2-dichlorobenzene
- Alkylphenol ethoxylates
- Formaldehyde donors
- *Hazardous air pollutants*
- Halogenated *solvents*
  - Additionally, methylene chloride[15] and perchloroethylene[16] shall not be *intentionally added* to the product.
- *Ozone-depleting compounds*
- Heavy metals: lead, mercury, cadmium, hexavalent chromium, and antimony in the elemental form or compounds
- The phthalate esters:
  - di (2-ethylhexyl) phthalate
  - butyl benzyl phthalate
  - di-n-butyl phthalate
  - di-n-octyl phthalate
  - diethyl phthalate
  - dimethyl phthalate
- Triphenyl tins and tributyl tins
- Triclosan

[15] CAS Number: 75-09-2, EC Number: 200-838-9
[16] CAS Number: 127-18-4, EC Number 204-825-9

Section IV. Intended Outcomes

Overview. Green Seal's current version of GS-11 Standard, Edition 3.2, provides a strong foundation for verifying paints and coatings with leadership attributes that result in protections for human health and the environment. The following tables illustrate the Intended Outcomes of the GS-11 Standard and the intended goals of the proposed updates.

GS-11 Standard, Edition 3.2 (2015)	
Intended Outcome	**Standard Requirement**
Preventing outdoor air pollution and smog formation.	VOC content limits based on CARB regulations, with noted exceptions.
Protections for human health via safer product formulations.	Prohibitions of chemicals classified as carcinogens, mutagens, and reproductive toxins.
	Prohibitions of alkylphenol ethoxylates, which are known to form endocrine-disrupting chemicals.
	Prohibition of halogenated solvents.
Low-impact packaging made from safer materials.	Reduced or recycled packaging, or a manufacturer take-back program; prohibitions on phthalates and heavy metals in packaging materials.
Building awareness of safe product application and responsible product disposal.	Consumer education resources.
Ensuring healthier, greener products function as well or better than conventional products.	Product functional performance requirements.

GS-11 Standard, Edition 4.0, Proposal Overview	
Intended Outcome	**Proposed Updates to Requirements**
New Intended Outcome: Healthier indoor environments.	**Proposed Update:** The addition of an emissions evaluation requirement (CDPH v1.2).
Preventing outdoor air pollution and smog formation.	**Proposed Update:** Deletion of exceptions to CARB VOC content limits for certain product types, thus, requiring all product types to meet CARB SCM 2007 VOC content limits.
Protections for human health via safer product formulations.	**Proposed Update:** Prohibition of halogenated solvents will be expanded to include the prohibition of two highly hazardous chemicals - methylene chloride and perchloroethylene – prohibited from being intentionally introduced at any level.

Intended Outcomes by Lifecycle Phase

Green Seal develops standards using a lifecycle assessment methodology in accordance with select guidelines defined by the ISO 14040 Standard (2006).

	Manufacturing Phase	**Use Phase**			**Disposal / End of Life Phase**
Intended Outcomes	**Safer Product Design**	**Indoor Air Quality**	**Preventing Ambient Air Pollution**	**Verification of Product Functional Performance**	**Safer Product Use and Responsible Disposal**
GS-11 Standard	Prohibitions: Carcinogens, mutagens, reproductive toxins	-	VOC Content Limits	Adhesion, Hiding Power, Washability,	Manufacturers must provide consumer education resources.
Proposed Revisions	Expanded Requirement: Perchloroethylene and methylene chloride at any level.	New Requirement: VOC emissions evaluation.	Deletion of exceptions to CARB. All products shall meet CARB VOC content limits.	No proposed changes.	No proposed changes.

Note: The table above includes a select group of the current requirements set in GS-11.
To see all requirements, please download the full GS-11 Standard at www.greenseal.org/gs11

Section V. Research Record

VOCs in Paints and Coatings. VOCs are compounds that have high vapor pressures at normal environmental conditions (i.e., room temperature, pressure, and humidity levels). Their chemical structures allow for vaporization, often referred to as "off-gassing," when in contact with air molecules.

In paints and coatings, VOCs are solvents and thinners which are designed to evaporate as the product cures.[1] Over the last several decades, the paints and coatings industry has made major strides in designing low-VOC ("water-based") products that perform as well as higher VOC ("solvent-based") formulations in durability, dry time, water sensitivity, and other important functional attributes.[2]

Leading brands on the North American markets developed low VOC product lines in response to strong demand for environmentally preferable products, lower odor levels, safer production and storage, and the increased adoption of green building certifications and practices. Low VOC product claims are sometimes misinterpreted as a distinction for products that are, overall, less hazardous to human health. As summarized below, products claiming low VOC content are designed to be protective of outdoor (or ambient) air quality. However, a low VOC claim is not a strong indicator that the product is designed to provide greater[3] protections for indoor air quality and the health of building occupants.

Ambient Air Pollution. Paints, coatings, and other products that off-gas may be designed with chemicals, or have contaminants, that are "photo reactive," i.e., cause the formation of ground-level ozone and, indirectly, smog and particulate matter (as secondary reactants). These ambient pollutants are associated with higher rates of respiratory diseases and skin sensitizations, learning deficits in animal models, decreased yields of agriculture crops, and stunted growth of wild plant species. Studies also show that the presence of ground-level ozone and smog can slow the rates of photosynthesis in vegetation, reducing growth and biomass, and increasing susceptibility to diseases.[4] These impacts on vegetation are critical considerations for US and global food production.

A common and meaningful indicator of products that are designed to result in lower levels of ambient air pollution are those with verified low VOC content claims. VOC content is defined in grams per liter, i.e., the summed mass (weight per volume) concentration of certain volatile (emissive) ingredients that are known to participate in photochemical reactions, i.e., to form ground-level ozone. Products with lower VOC content, as defined by the US EPA (below), are less likely to cause the formation of outdoor air pollution including ground-level ozone, smog, and secondary particulate matter. A commonly referenced state regulatory program that sets limits on VOC content for consumer products and architectural coatings is the California Air Resources Board (CARB). CARB VOC limits for architectural coatings are lower, i.e., more protective, than the national limits set by the Architectural Coatings Rule via the US federal Clean Air Act (CAA).[5]

Volatile chemicals that do not cause the formation of ozone are "exempt" from federal air quality standards, as specified in the National Primary and Secondary Ambient Air Quality Standards, set by the US EPA: "Volatile organic compounds (VOC) means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates and ammonium carbonate,

[1] Low-VOC, Low Toxicity Alternatives, https://www.irta.us/reports/Consumer%20Products%20DTSC.pdf
[2] https://www.paint.org/coatingstech-magazine/articles/waterborne-coating-technologies-steadily-advance-despite-challenges/
[3] Compared to convention products or those not making that particular environmental claim.
[4] Impacts of ozone on trees and crops, 2007, External Geophysics, Climate and Environment https://globalchange.mit.edu/sites/default/files/MITJPSPGC_Reprint07-21.pdf
[5] https://www.epa.gov/sites/production/files/2015-11/documents/aim_coatings_detailed_factsheet.pdf

which participates in atmospheric photochemical reactions, except those designated by EPA as having negligible photochemical reactivity." [6]

Indoor Air Quality. Exposure to VOCs inside buildings and homes can pose significant health risks, even at low levels. A study published in 2018 identified consumer products, including paints and coatings, as a large source of indoor air VOCs and other pollutants.[7] Other common sources of VOCs and VOC precursors include cleaning products, combustion activities (heating appliances and gas stove cooking), furniture, and personal care products.[8] Health effects associated with acute inhalation exposure to VOCs include irritation of eyes and upper airways ("sensory irritation"), [9] decreased lung function,[10] low energy levels, headaches, and impaired mental focus. Chronic exposure to hazardous VOCs can lead to neurological disorders, including dementia and tremors.[11] The WHO estimates 3.8 million deaths occur each year due to indoor air pollution from VOCs, carbon monoxide, particulate matter, and aerosols.[12]

Chronic or daily exposures to hazardous emissions from products can occur in homes and buildings, especially in areas with lower air exchange rates, as VOCs essentially becoming trapped, leading to higher concentrations of these chemicals in the air. [13] An emerging field of science is the monitoring and modeling of indoor air chemistries to address the potential formation of hazardous byproducts that form due to mixtures of wet-applied product emissions, material emissions, microbial emissions, and outdoor air pollution, such as ozone, which may enter the building or home.[14] A practical, feasible approach to reducing and preventing adverse health effects from indoor air pollutants is source control, i.e., to eliminate or reduce anthropogenic sources of VOC emissions.

Verifying Low Emissions of Hazardous Air Contaminants Emitted from Paints and Coatings. Low VOC product claims, relevant to ambient air pollution, are sometimes misinterpreted as an indicator that the products are safer and healthier. For example, methylene chloride, a highly toxic chemical via inhalation, is a chemical that is not restricted in ambient air quality standards because it is not known to cause the formation of smog and ground-level ozone. Therefore, to recognize and find paints and coatings that are less hazardous to human health, particularly in indoor environments where inhalation exposure is a critical consideration, a different verifiable product attribute is necessary.

In the 1990s, the California Department of Public Health (CDPH) developed a standard method for testing products and set emissions limits to provide a benchmark indicator of respiratory health protection in indoor environments. The California Department of Public Heath Standard Method, v1.2 (2017),

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[6] https://www.epa.gov/indoor-air-quality-iaq/technical-overview-volatile-organic-compounds#2
[7] Volatile chemical products emerging as largest petrochemical source of urban organic pollutants, *Science*, 2018 https://science.sciencemag.org/content/359/6377/760
[8] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4057989/
[9] Indoor air pollutants in office environments: assessment of comfort, health, and performance, *International Journal of Hygiene and Environmental Health*, https://www.ncbi.nlm.nih.gov/pubmed/22954455
[10] Exposure to volatile organic compounds and airway inflammation, *Environmental Health* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6081941/
[11] Health risk assessment of volatile organic compounds, *BMC Public Health*, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5910572/
[12] WHO Household Air Pollution and Health. https://www.who.int/en/news-room/fact-sheets/detail/household-air-pollution-and-health.
[13] Introduction to Indoor Air Quality, US EPA, https://www.epa.gov/indoor-air-quality-iaq/introduction-indoor-air-quality
[14] https://cen.acs.org/environment/pollution/Chemists-move-indoors-measure-air/97/i46

abbreviated as "CDPH v1.2" [15] identifies 35 "target VOCs" which are known to be common, hazardous indoor air pollutants. Examples include formaldehyde, benzene, toluene, and xylene. The VOC limits established in the method are referred to as "maximum allowable concentration levels."

CDPH v1.2 has been specified by many groups over the past five to ten years including the Living Building Challenge (LBC), the US Green Building Council LEED v4 (2013), the National Green Building Standard, the WELL Building Standard, and several US state's environmentally preferable purchasing programs, including Massachusetts and Minnesota.

The CDPH testing method was designed to provide an indicator of occupant exposure to product-emitted VOCs. This test method was not designed to model the VOC exposures for building construction and maintenance workers in the immediate vicinity during the curing process, which is anticipated to be when VOC off-gassing is at the highest rates.[16]

Safer Product Use and Design. Two chemicals of concern have been identified by public health and environmental protection organizations as priorities for elimination in paints and coatings products: perchloroethylene and methylene chloride. These chemicals may be ingredients in paint and coating products as solvent carriers,[17] though they are more widely known as ingredients in paint removers (methylene chloride) and conventional dry-cleaning facilities (perchloroethylene).

In 2019, the US EPA announced a ban on methylene chloride in consumer products in response to the deaths of 17 individuals who were applying these products. The fatalities were the result of inhalation exposure in low ventilation spaces.[18] [19] The federal ban on these chemicals in household products therefore provides an important level of protection but it does not fully address the health risks to workers and those in occupational settings who are supplied with products sold for professional, commercial, and institutional projects.

Both chemicals are classified as probable human carcinogens (2A IARC) [20] [21] and neurotoxins.[22] "Consistent with other chlorinated solvents…exposure to dichloromethane results in decreased motor activity, impaired memory, and changes in responses to sensory stimuli in mice and rats…Results from experimental studies in humans indicate that acute neurobehavioral deficits." According to US EPA, "the primary effects from chronic (long term) inhalation exposure [to perchloroethylene] are neurological, including impaired cognitive and motor neurobehavioral performance." [23]

Perchloroethylene does not quickly breakdown in the air, water, or soil, causing environmental contamination. The chemical is a known drinking-water contaminant and is not easily filtered from wastewater facilities. [24] Methylene chloride, while lethal at high concentrations via inhalation, is not an

[15] https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/CDPH%20Document%20Library/CDPH-IAQ_StandardMethod_V1_2_2017_ADA.pdf
[16] https://www.buildinggreen.com/feature-shorts/why-zero-voc-was-never-enough
[17] https://www.epa.gov/sites/production/files/2017-02/documents/perchloroethylene.pdf
[18] https://www.edf.org/media/long-delayed-methylene-chloride-ban-finalized-still-leaves-workers-risk
[19] https://www.osha.gov/Publications/OSHA3883.pdf
[20] https://www.epa.gov/sites/production/files/2016-09/documents/tetrachloroethylene.pdf
[21] https://monographs.iarc.fr/wp-content/uploads/2018/06/mono110-04.pdf
[22] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4314245/
[23] https://www.epa.gov/sites/production/files/2016-09/documents/tetrachloroethylene.pdf
[24] https://www.who.int/water_sanitation_health/dwq/chemicals/tetrachloroethene.pdf

environmental hazard due to its rapid evaporation and low effect on the formation of ground-level ozone.[25]

Since 2009, GS-11 has prohibited both chemicals at, or above 0.01 percent (100 ppm), in the final product due to their classifications as probable carcinogens. For stronger transparency and to further encourage the elimination of these chemicals across the supply chain, we propose a prohibition of intentionally adding methylene chloride or perchloroethylene at any level in the final product.

Alignment with Green Building Standards. If accepted into GS-11 Standard, the Edition 4.0 will fully align with the low-emitting materials requirements the US Green Building Council's LEED v4 & LEED v4.1, in addition to the WELL building certification, which reference the LEED requirements for these products.

Project managers seeking these certifications have requested support from Green Seal since the release of LEED v4 to translate the Low Emitting Materials requirements. Anecdotally, project managers shared their challenges of identifying products that work effectively and protect their workers and building occupants, as needed. GS-11, Edition 4.0 will address these issues, increasing the benefits of the certification for manufacturers with leadership products and reducing the complexity for project teams and consumers seeking health-protective products.

[25] http://apps.sepa.org.uk/spripa/Pages/SubstanceInformation.aspx?pid=72