



Rapid Response

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Rapid Response Research

Low VOC Paint Standards U.S. EPA Region 10

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Request

Carolyn Gangmark of U.S. EPA Region 10 is interested in finding out what the criteria is for calling a paint "Low VOC".

Background

Volatile organic compounds (VOC) can affect health, and offgas into interior spaces, or into the outside air in the case of exterior paints and finishes. Many paint suppliers now offer low-, or even zero-VOC paints.

Key Findings

The criteria for determining if a paint is "low VOC" depends on the end user and/or specified standards for the job. A customer may require a paint be below a certain threshold (typically measured in grams per liter or gpl or g/l) to an arbitrary number, but likely to no higher than the threshold limits set forth in Greenseal Standard GS 11 (shown below).

The Healthy Building Network researched and compiled a list of commercial interior paints (dated 5/07) whose total VOC content is listed below 20 g/l. <http://www.healthybuilding.net/healthcare/Low-VOC-Paint-Listing.pdf>

The Master Painter's Institute (MPI) has certification standards that specify VOC levels or odor levels. For example, MPI #145 (Titled Institutional Low Odor/VOC Interior Latex, MPI Gloss Level 3) includes a VOC limit of 10 g/L, and MPI #139 contains an odor specification. http://www.specifypaint.com/APL/paintinfo_APL/MpiNumber.asp?ID=145000

The excerpt from the Greenseal Standard GS 11 (below) provides a standard at which paints may be considered "low VOC" and meet the requirements of GS. The LEED certification credits for finishes stipulate paints that meet GS 11.

[Excerpt:

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:

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

Exterior Coatings:

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

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.

[End Excerpt GS 11].

Other Notes

There are numerous suppliers of low VOC paints.

One local store, Ecohaus carries several brands and provides feedback on the paint product and usage. (<http://www.environmentalhomecenter.com/home.shtml>).

Additional criteria for safer paints should also include odor and toxicity of other constituents, such as toxic, or heavy-metal colorants/pigments.

Conclusions

Low VOC paints will vary in VOC content, but most environmental standards are at or below 50 gpl for interior flat paint.

Additional Resources

Non-toxic paints. http://www.eartheasy.com/live_nontoxic_paints.htm