

## Safer Building Materials Reference Guide

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This guide was developed by Healthy Building Network in conjunction with United Renters for Justice (IX) and resident members of the cooperative A Sky Without Limits. It provides background information on potential human and environmental health hazards of materials and provides high-level recommendations for resident organizations, building owners, contractors, building management companies, and others to use safer materials in their projects. This guide provides information specifically for safer paints, flooring, and cleaning and disinfecting materials. For more background information and recommendations for additional product categories, see the [HomeFree website](#).

All of the resources referenced in this guide are available in English, unless explicitly stated otherwise.

This document includes examples of products that meet HBN's safer material requirements based on information available at the time of review. These products are included for illustrative purposes, and their inclusion is not an endorsement or certification of the products. HBN's guidance is based on research about chemicals of concern that are commonly present or used in the manufacturing process of this product type. The contents of specific manufacturer products can vary widely within a product type.



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**Why Materials Matter**

The average person spends up to 90% of their time indoors. Most people think that the chemicals used in building products are strictly regulated or tested for their impacts on human health, but unfortunately, that is not the case. In fact, it is difficult to get clear and reliable information about product ingredients and their potential health impacts on building occupants, workers, and the communities in which they are manufactured or processed. Buildings, both old and new, can contain chemicals of concern that have impacts throughout the supply chain. From lead poisoning to asthma, our health can be impacted by the materials used in our buildings.

This guide includes recommendations that align with the healthier material guidance of Healthy Building Network (HBN)'s HomeFree initiative, to help ensure transparency regarding product content and the avoidance of highly toxic products. HBN's recommendations consider potential health impacts on residents and workers involved in the manufacturing, installation, disposal, recycling, and reuse of products. They also consider the burden on fence-line communities that surround manufacturing and processing facilities that may be exposed to toxic chemicals released during the manufacturing or end-of-life processes. Not all of the materials listed below are entirely free of hazardous chemicals, but they provide improvements toward reducing exposures throughout the product's life cycle.

## Paint Product Guidance

Paint is one of the most universal building materials, covering all of the walls and ceilings in a typical home. Unfortunately, a fresh coat of paint intended to brighten an apartment can inadvertently introduce hazardous chemicals into the home. This includes chemicals that have been shown to disrupt how hormones work in our bodies. Hormone disruptors are a group of chemicals that can have effects even in very small amounts and can cause a variety of human diseases. By choosing a safer paint, you can avoid chemicals of concern and reduce chemical exposures for your staff, residents, and contractors.

### Example Safer Paints

- **Benjamin Moore Eco Spec Premium Interior Paint (all sheens)\***
- **Benjamin Moore Ultra Spec 500 Interior Latex (all sheens)\***
- **ECOS Interior Wall Paint (all sheens)\***
- Sherwin Williams ProMar 200 Zero VOC Interior Latex (low sheen, low gloss egg-shell, egg-shell, and semi-gloss)
- Sherwin Williams Emerald Interior Acrylic Latex (all sheens)

*\*The products in bold are preferred because they publicly disclose their contents.*

These are just a few examples of safer paints that are available. There are some additional example products in the [HomeFree Paint Specifications](#) (in the APE-free, Low VOC Content, and Low VOC Emissions section). In addition, if you or your property managers or contractors want to find other safer paints, use the following criteria. The paint vetting worksheet linked in the Additional Resources section includes tips on how to identify paints that meet these criteria.

### Criteria for Selecting Safer Paint:

- Use paints free of alkylphenol ethoxylates (APEs).
- Use paints with both low VOC (Volatile Organic Compounds) content and low VOC emissions.
  - At a minimum, use paints with  $\leq 50$  g/L of VOC content, and prefer  $\leq 10$  g/L VOC content.
  - Use paints with colorants that do not increase the VOC content of the base paint when tinted.
  - Use paints certified to have low VOC emissions according to the requirements of the California Department of Public Health (CDPH) Standard Method for Testing VOC Emissions. Programs that certify the CDPH Standard for paint include:
    - Master Painters Institute (MPI) X-Green (Extreme Green)
    - GreenWise Gold
    - GreenGuard Gold
    - SCS Indoor Advantage Gold

- Berkeley Analytical ClearChem

Paints meeting these program standards will generally indicate this on the label and/or product data sheets.

- Avoid paints marketed as antimicrobial and claiming or implying a health benefit.
  - Claims specifically related to avoidance of mold or mildew are okay. Avoid products marketed as microbicidal, that call out specific disease-causing organisms, or that make other claims related to human health (e.g., “Kills 99% of Staph, MRSA, and E. coli”).
- Prefer products with full disclosure of content through Health Product Declarations (HPDs).

Additional Resources:

- [Paint Vetting Worksheet](#) - Use this worksheet to find the information necessary to vet any interior paint products against the above criteria.
- [Short Online Course: Selecting Healthier Paint](#) - Use this free online course to learn more about why these paint criteria matter and see an example of a vetted paint product.
- [Safer Paint Specifications](#) - Share this resource with specification writers or architecture firms you are working with on larger projects to include safer paints in project specifications.
- Do Antimicrobial Building Products Protect Against COVID-19? - [Use this resource](#) to learn more about why you should avoid building products with antimicrobial health claims.

### Flooring Product Guidance

Flooring is another building material that covers a significant portion of a building. Chemicals linked to health hazards such as cancer and developmental problems are found in some flooring products and can be released from products, exposing installers and residents. Young children are most vulnerable because they crawl on floors and often place their hands in their mouths. Due to the quantity used in buildings and its regular replacement, flooring provides an opportunity to reduce exposure to toxic chemicals between major renovation projects.

Example Safer Flooring Products:

- Linoleum
  - **Marmoleum by Forbo\***
  - **DLW Linoleum Flooring by Gerflor\***
  - Linoleum Harmonium XF<sup>2</sup> by Tarkett
- Ceramic Tiles

- **Crossville\***
- **Daltile (includes Marazzi, Ragno, American Olean, and Mohawk brands)\***
- PVC-free Resilient Flooring
  - **Zero and Xpression by UpoFloor\***
  - **Pivot Point by Mohawk\***
  - **Striations and Migrations BBT by Armstrong\***
  - **Cirro by Mannington\***

Carpet and rubber flooring are less preferred than the above types of products, but if you do choose to use carpet or rubber floors, select a product such as the ones listed below that avoid the chemicals of highest concern.

- Carpet Tile
  - **Adaptable, Academic View, Hidden Dimension, Urban Transit, Feather, and Flight by Mohawk\***
  - **Color Play or Blox by Shaw/Patcraft\***
  - Ethos Tile by Tarkett
- Sheet Carpeting
  - **Sketch Pad, Whip Stitch, Get Real II, Suburbia, or Welcome Pointe by Mohawk\***
  - Tailored Performer, Enduring Solid, Presidio Tweed, or Venture Tonal by Shaw/Patcraft
  - Sheet carpeting from manufacturers who have phased out PFAS: Engineered Floors, Interface, Shaw, Tarkett, or any product from Home Depot or Lowes. See the Carpets and Rugs section on [PFAS Central](#) for an up-to-date list.
- Rubber Flooring:
  - **AB Pure by American Biltrite\***
  - **True by Mohawk\***
  - **Harmoni by Mondo\***
  - Rubber Tile by Johnsonite/Tarkett
  - Norament Standard by Nora

*\*The products in bold are preferred because they publicly disclose their contents.*

These are just some examples of safer flooring materials. There are some additional safer products and product types in the [HomeFree Flooring Specifications](#). In addition, if you or your property managers or contractors want to find other safer flooring products, use the criteria below.

#### Criteria for Selecting Safer Flooring:

- Avoid vinyl flooring products.
  - If you do choose to use vinyl, specify phthalate-free and avoid products with hazardous or undefined recycled content.

- For rubber flooring, avoid post-consumer recycled content (crumb rubber).
- For carpets, look for products that don't use fluorinated stain-repellent treatments (also called PFAS). For carpet tiles, also specify backings that are vinyl-free and polyurethane-free and do not contain fly ash.
- For ceramic tiles, prefer those made in the USA, where most manufacturers have eliminated toxic lead compounds from ceramic tile glazes. Avoid post-consumer recycled content from CRTs (cathode ray tubes), which contain high concentrations of lead.
- Avoid products marketed as antimicrobial and claiming or implying a health benefit.
- Prefer mechanical installation or peel and stick adhesives when possible.
- Prefer products with low VOC emissions according to the requirements of the California Department of Public Health (CDPH) Standard Method for Testing VOC Emissions. Programs that certify the CDPH Standard for flooring include:
  - GreenGuard Gold
  - SCS Indoor Advantage Gold
  - Berkeley Analytical ClearChem
  - Resilient Floor Covering Institute FloorScore
  - Carpet & Rug Institute Green Label Plus
- Prefer products with full disclosure of content through Health Product Declarations (HPDs).

#### Additional Resources:

- [Flooring Product Guidance](#) - A simplified color spectrum (red to yellow to green) that ranks different types of flooring based on the chemicals used in their manufacturing and associated health hazards. Rankings consider potential impacts on building occupants and workers involved in the manufacturing, installation, disposal, recycling, and reuse of these products. They also consider the burden on fence-line communities who are exposed to toxicants released into the environment during the manufacturing process. Use the Spectrum to benchmark your current practice and take a step up to healthier options.
- [Safer Flooring Specifications](#) - Share this resource with specification writers or architecture firms you are working with on larger projects to include safer flooring products in project specifications.

### **Cleaning and Disinfecting Product Guidance**

Hazardous chemicals are common in cleaning and disinfecting products. People using these products, those present when they are used, and others who come in contact with residues of the products can be impacted. Some cleaning and disinfecting chemicals can cause or trigger asthma or have been linked to reproductive harm, including decreased fertility and birth defects. Women and Latinxs are disproportionately exposed to toxic chemicals in cleaning products at home and at work. Heavily fragranced products can contain harmful

chemicals, and that “clean” smell can actually be harmful. Disinfectants contain antimicrobial pesticides in order to kill germs, and these antimicrobials can be harmful to people, too. Avoiding disinfectants unless they are necessary and using safer cleaning and disinfecting products can protect both residents and those doing the cleaning.

### Example Safer Cleaning Products:

#### Cleaners

- Products that meet the [Environmental Protection Agency \(EPA\)'s Safer Choice standard](#) (available in Spanish)
- Products that meet the GreenSeal standard for [Industrial and Institutional Use](#) or for [Household Use](#)



#### Disinfectants

- Products that meet the [EPA's Design for the Environment standard](#)

### Criteria for Selecting Safer Cleaning Products:

For any cleaning or disinfecting product, always read and follow label instructions. Never mix cleaning products.

#### Cleaners

- When buying cleaning products, look for products with the EPA's Safer Choice label or a GreenSeal label by following the links above to access product lists or looking for products that have the above logos on their labels.
- If you can't use products with these labels:
  - Avoid or reduce the use of cleaning products with fragrance.
  - Avoid products that contain ammonia.
  - Look for cleaners packaged in pump-spray bottles, not aerosol cans.

#### Disinfectants

- Avoid disinfectants unless they are necessary, and always clean before disinfecting.
- If needed, use products that are certified by [EPA's Design for the Environment](#) whenever possible.
- If you can't use products with these labels:
  - Avoid or reduce the use of products with fragrance.
  - Look for safer active ingredients such as hydrogen peroxide, l-lactic acid, citric acid, or ethanol.

- Avoid chlorine bleach (sodium hypochlorite) and quaternary ammonium compounds.
  - Look out for these example quaternary ammonium compounds:
    - alkyl dimethyl benzyl ammonium chloride (ADBAC);
    - benzalkonium chloride;
    - dodecyl-dimethyl-benzyl ammonium chloride;
    - lauryl dimethyl benzyl ammonium chloride;
    - benzyl-C10-16-alkyldimethyl, chlorides;
    - benzyl-C12-16-alkyldimethyl, chlorides;
    - benzyl-C12-18-alkyldimethyl, chlorides;
    - benzyl-C16-18-alkyldimethyl, chlorides;
    - didecyl dimethyl ammonium chloride (DDAC); and
    - didecyl dimethyl benzyl ammonium chloride.

Additional Resources:

- Learn more about the importance of using safer cleaning products and EPA's Safer Choice program in this short video, [Why Choose Safer Cleaning Products](#).
- Women's Voices for the Earth [Cleaning Products and Reproductive Harm](#) and [Impacts on the Latinx Community](#) (available in Spanish)
- University of Washington School of Public Health [Safer Cleaning, Sanitizing and Disinfecting Strategies to Reduce and Prevent COVID-19 Transmission](#)
- Western States PEHSU [Green Cleaning, Sanitizing and Disinfecting: A Toolkit for Early Care and Education](#) (available in Spanish)

## Glossary

**Alkylphenol ethoxylates (APEs)** - APEs are a particular chemical group of concern and are a high priority to avoid. These chemicals are commonly used as surfactants in paints. They contain and break down into chemicals that interfere with how hormones work in the body.

**Antimicrobial** - Some paints or flooring products advertise that they can kill bacteria or other germs that can make us sick. Use of these products has not been shown to keep people healthier, but these products commonly include hazardous additives that can negatively impact human health.

**Health Product Declarations (HPDs)** - HPDs are a standard reporting tool for manufacturers to disclose a product's contents and associated health hazards. They are an inventory tool and do not provide explicit judgment on safer products. More information on disclosure and transparency is available [on HBN's HomeFree](#).

**Per- and polyfluoroalkyl substances (PFAS)** - Commonly used in stain-repellent treatments for carpets, PFAS are a high priority to avoid. Health hazard information is not available for all the individual chemicals within this large group, but as a whole PFAS are identified as chemicals of concern. They last for very long times in the environment, and some are known to be toxic and build up in the body. PFAS have been found in the environment and in the blood of most people.

**Volatile organic compounds (VOCs)** - In the context of building materials, VOCs are commonly defined as chemicals that are released into the air as gasses. VOCs may be hazardous to workers and residents who inhale them during or after installation. VOC content in paint is reported in grams per liter (g/L) and is impacted by both the base paint and the colorants used for tinting. Not all volatile chemicals that may be emitted from paints are included in VOC content testing. Some of these chemicals are captured by VOC emissions testing, which is commonly done 14 days after application for wet-applied products like paint and can also be performed on dry products like flooring.

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