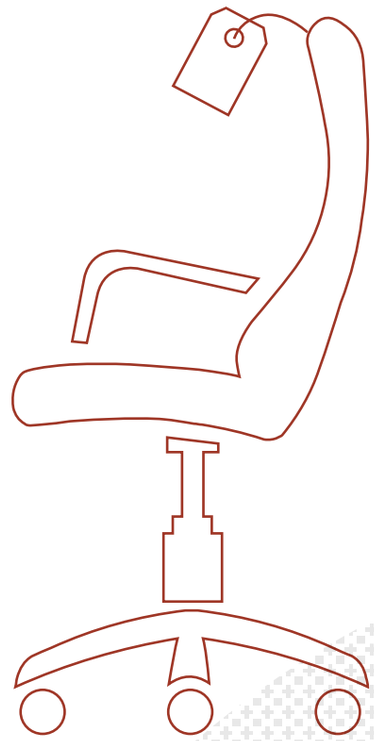
Kicking Toxic Chemicals Out Of Office Furniture

An Easy Guide for Choosing Healthier Furniture

CEH
center for environmental health

Introduction

Furniture is an unexpected reservoir for many hazardous and often unnecessary chemicals, including toxic flame retardant chemicals, volatile organic compounds (including formaldehyde), fluorinated chemicals, antimicrobials and toxic materials like polyvinyl chloride (vinyl). We refer to this group as the "Hazardous Handful" and are described further below:



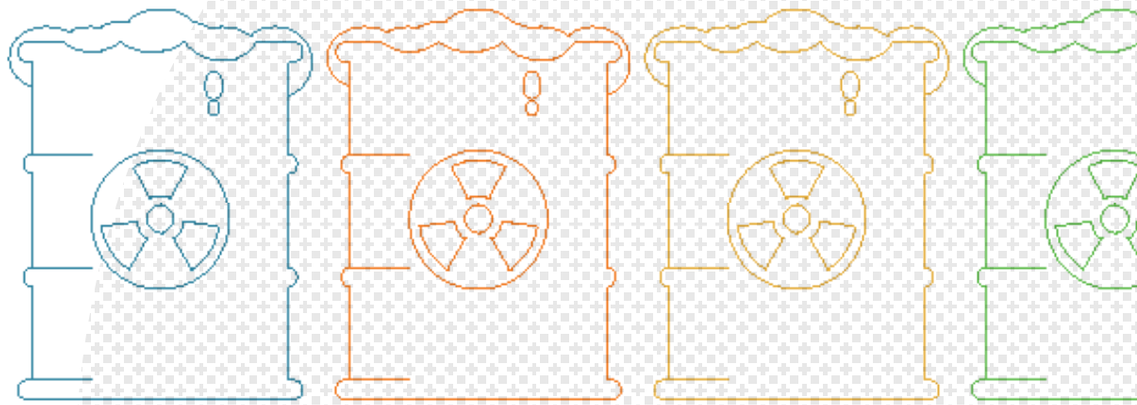
1. Flame retardants have been linked to cancer and other serious diseases, yet government studies say that these chemicals do not provide added fire safety benefits in furniture. Flame retardants escape out of furniture and get into our air, dust, the outdoor environment and our bodies.

2. Formaldehyde is an an example of a harmful volatile organic compound (VOC) that is known to cause cancer, yet is still often used in adhesives found in wood furniture.

3. Fluorinated chemicals, used in stain and/or water resistant treatments in furniture, are linked to serious health problems and can build up in our bodies and in the environment, where they can remain toxic for thousands of years without breaking down. Fluorinated chemicals have been found to migrate out of products and get into our air, dust, water and bodies.

4. Antimicrobials in furniture have not been shown to reduce the spread of infection, can pose hazards to human health and the environment, and may contribute to antimicrobial resistance.

5. Polyvinyl chloride, known as PVC or vinyl, is used in plastic parts of furniture and at times in fabric. PVC is often treated with harmful chemical additives like lead, flame retardants, or phthalates.



Why is this guide so important?

Furniture is an often-overlooked source of chemicals that affect our health. Several kinds of toxic and synthetic chemicals escape from furniture and make their way into our air, dust, and our bodies. Given the longevity of furniture products and the fact that we spend 90% of our time indoors[1] , your organization's purchasing decisions are an equally overlooked opportunity to promote a safe and healthy workforce and environment. By making a few simple and cost-neutral choices when purchasing furniture, you can seize a valuable opportunity to improve indoor air quality, protect employees' health, and broaden the market for safer products.

This guide offers a brief introduction to chemicals we call the "Hazardous Handful" and provides tips for how you can avoid these hidden health dangers when purchasing furniture for your office, business, or school.

The Center for Environmental Health is available to assist you in implementing these environmentally preferable purchasing practices.

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This guide was produced by:

Center for Environmental Health

Written by:

Judy Levin, Pollution Prevention Director

Alvaro Casanova, Environmental Scientist

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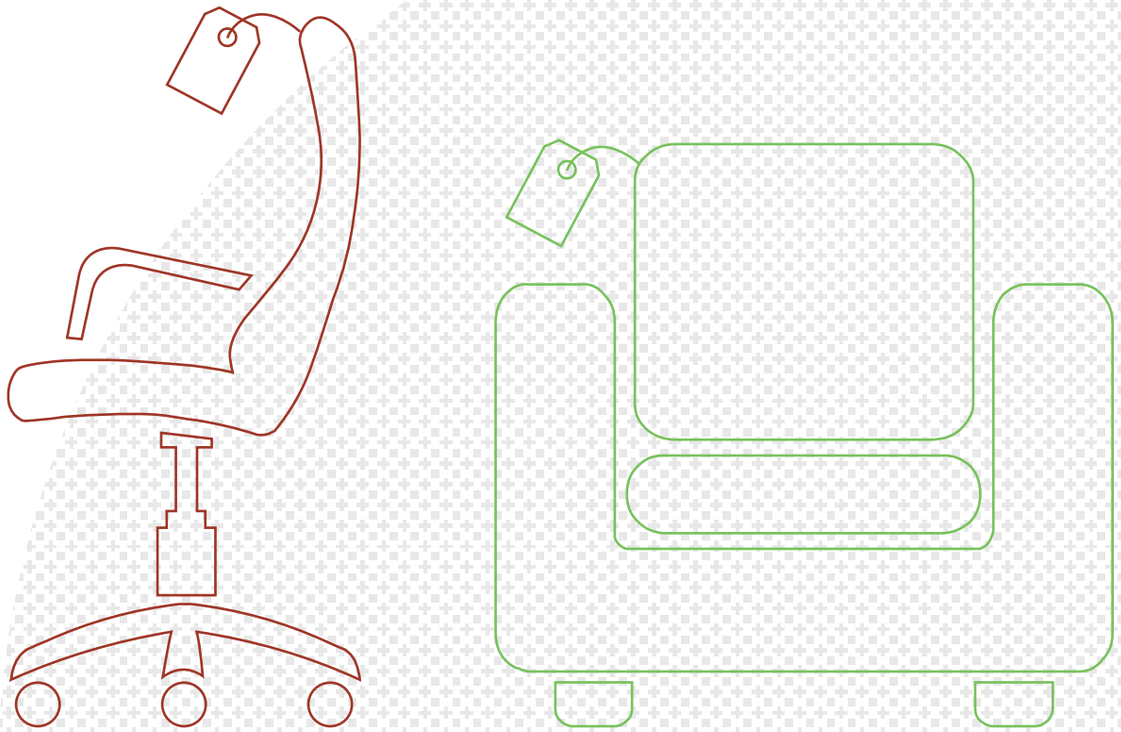


Manufacturers Selling Office Furniture Without the "Hazardous Handful" Chemicals

Agati	agati.com
Allseating	allseating.com
Allsteel	allsteeloffice.com
Arcadia	arcadiacontract.com
Artcobell	artcobell.com
Community	communityfurniture.com
David Edward	davidedward.com
Encore Seating	encoreseating.com
Enwork	enwork.com
Gunlocke	gunlocke.com
Haworth	haworth.com
HBF	hbf.com
Herman Miller	hermanmiller.com
Highmark	highmarkergo.com
HON	hon.com
Human Scale	humanscale.com
JSI	jsifurniture.com
Jasper Desk	jasperdesk.com
Keilhauer	keilhauer.com
Kimball Office	kimballoffice.com
Klem	klemhospitality.com
Knoll	knoll.com
Knú Contract	getknu.com/knu/Products
Kruger International	ki.com
La-z-Boy	lzbcontract.com
Martin Brattrud	martinbrattrud.com
Maxon	maxonfurniture.com
National	nationalofficefurniture.com
Nemschoff	nemschoff.com
Neudorfer	neudorfer.com
OFS Brands	ofsbrands.com
SitOnIt	sitonit.net
Stance	stancehealthcare.com
Steelcase	steelcase.com
Stylex	stylexseating.com
Teknion	teknion.com
Trendway	trendway.com
Versteel	versteel.com
Wieland	wielandhealthcare.com

Buyers should beware that

- Fabric choice often drives the use of fluorinated stain treatments, antimicrobials, PVC, and/or flame retardants. Ask your vendor to help you identify fabrics free of these chemicals. Many fabric manufacturers have removed these chemicals from a large number of their products.
- Upholstered office furniture products that need to meet certain flammability standards for furniture used in public occupancy spaces typically contain flame retardant chemicals in one or more of the components. (see page for more details).
- The manufacturers listed have self-reported this information and purchasers should ask the manufacturer to confirm all claims.
- For a list of which product lines meet the restrictions on the "Hazardous Handful" visit the State of Massachusetts's website and select the Furniture Table. Other products may be listed on the Healthier Hospital's list of products that meet the Healthy Interiors Goal. You can click on each manufacturer to see which products comply with the restrictions on the "Hazardous Handful."

But Aren't These Chemical Treatments Needed?

The use of the chemicals of concern in furniture are often unnecessary and any purported benefits do not outweigh the costs associated with their human and environmental health impacts. Below is a brief introduction to the chemicals of concern, "The Hazardous Handful", you should avoid while purchasing furniture for your office, business or school and how you can comply with safety regulations without their use.

1. Flame Retardants

Flame retardants have been widely used in furniture despite government studies showing that these chemicals provide no added fire safety benefits. The U.S. Consumer Product Safety Commission has stated that flame retardants as used in furniture do not provide "a practically significant greater level of open flame safety than did the untreated foams." [3]

Health & Environmental Effects

Flame retardant chemicals migrate out of furniture products and enter the air, dust, the environment, and our bodies. Flame retardants have been found in 97% of all Americans tested [4] and 100% of infants tested. As a class of chemicals, flame retardants have a tendency to be persistent (break down very slowly in the environment), bioaccumulative (build up in people and animals, often magnifying at the top of the food chain) and/or toxic. Some of the most studied flame retardants have been linked to cancer, decreased fertility, hormone disruption, lowered IQs, obesity, hyperactivity, and other serious health issues [5]. Many new flame retardants chemicals have been introduced as replacements for older, toxic chemicals, only to be found to be just as harmful to human and environmental health. Some of the "replacement chemicals" have been identified as carcinogens and others show problems with neurotoxicity, reproduction, development, and ecotoxicity.[6,7]

A Tale of Two Standards

Furniture is typically made to meet one of two furniture flammability standards:

- **TB 117-2013** is the standard that is used for most office furniture. TB 117-2013 is a standard that addresses the major cause of fires, smoldering sources (e.g. smoldering cigarettes) on fabric. This standard can be met without the use of flame retardant chemicals by using fabrics that are not smolder prone. While the standard does not necessitate the use of flame retardants, the standard also does not prohibit the use of these chemicals.

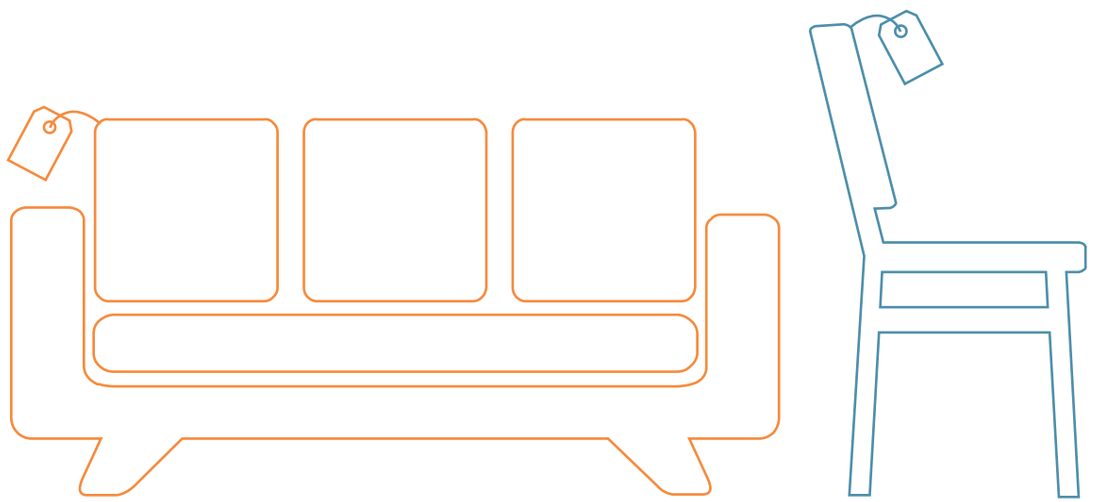
  To ensure that your product is free of flame retardant chemicals, look for the check box on the TB 117-2013 label that indicates whether a product does or does not contain flame retardant chemicals. The label is typically located on the bottom of the chair or under the cushion of a couch. Although this label is only required for products sold in the state of California, many manufacturers are using this label nationwide. Ask your manufacturer to provide this label to help you identify healthier furniture.

- **TB 133 and ASTM E1537** are flammability standards designed for "public occupancy" buildings. Furniture that meets TB 133 or ASTM E1537 is typically made with flame retardants in the foam, fabric and/or barrier material and is significantly more expensive than TB 117-2013 furniture. States vary in their definition of what they consider to be a "public occupancy" building, but the term usually includes health care settings and prisons. Auditoriums, public assembly areas of hotels and motels, dormitories and childcare centers may also be considered "public occupancy" buildings. Check with your local Authority Having Jurisdiction (AHJ) to learn what is considered a "public occupancy" building in your state and which flammability standard may apply to your regulated space.

Allowed exemptions to TB 133 and ASTM E1537:

In almost all jurisdictions, public occupancy buildings that are fully equipped with automatic fire sprinklers are allowed to meet TB 117-2013. The ability to comply with TB 117-2013 instead of TB 133 or ASTM E1537 is a financial and environmental win for your business. It is possible that a small number of jurisdictions may not allow certain public buildings to meet TB 117-2013 even if the building is fully fire sprinklered. Again, check with your AHJ for clarification in your area.

If you must buy furniture that meets TB 133 or ASTM E1537, specify furniture that does not contain "halogenated" flame retardant chemicals. Halogenated flame retardants contain bromine and/or chlorine. Many halogenated flame retardants have been found to be persistent, bioaccumlative and toxic. You can use the sample technical specifications to include the requirement for "non-halogenated" flame retardants when you are issuing Requests for Proposals or Invitations to Bid.



2. Volatile Organic Compounds (including formaldehyde)

Volatile organic compounds (VOCs) are gases emitted from certain solids and liquids and contaminate our indoor air. Concentrations of many VOCs are consistently higher indoors than outdoors by up to ten times[8]. VOCs include a variety of chemicals including formaldehyde,which is used mainly in the production of adhesives for wood products.[9]

Health & Environmental Effects

VOCs may have both short- and long-term adverse health effects. The US EPA notes that health effects from formaldehyde may include: eye, nose, and throat irritation; headaches, loss of coordination, and nausea; damage to liver, kidney, and the central nervous system. Exposure to formaldehyde also has been found to cause breathing problems, [10,11] Some VOCs are suspected or known to cause cancer in humans[12] and the International Agency for Research on Cancer (IARC) rclassified formaldehyde as carcinogenic to humans" in 2004.[13]

Recommendation

All furniture containing composite wood materials, including hardwood plywood, hardwood plywood veneer core, hardwood plywood composite core, particleboard, or medium density fiberboard, whether raw or finished, should comply with Phase 2 of California's Code of Regulations, Title 17 §93120.2 – Airborne Toxic Control Measure to Reduce Formaldehyde Emission from Composite Wood Products.

At a minimum, all furniture should meet the ANSI/BIFMA 7.6.1 and 7.6.2 criteria for indoor air quality. To ensure lower exposure to formaldehyde, furniture should additionally meet ANSI/BIFMA criterion 7.6.3 or California's Department of Public Health Standard Method v.1.2 (commonly known as Section 01350).

Products that meet SCS Indoor Advantage Gold certification may or may not achieve the lower level of formaldehyde emissions. Purchasers should request the SCS Indoor Advantage Gold certificate to determine what level of indoor air quality has been achieved.

3. Fluorinated Chemicals

Per-and poly-fluorinated compounds, often known as PFCs or PFASs, include surface treatments often found in furniture to provide stain, oil, and/or water resistance.

Health & Environmental Effects

Fluorinated compounds and/or their breakdown products have been found to migrate out of furniture and can get into our air, water, and wildlife, and can also accumulate in our bodies.[14] These chemicals are extraordinarily persistent and once in our environment, they are expected to persist for hundreds of years.[15] Many of these compounds are global pollutants and are carried by air and water currents around the world.[16] People are most likely exposed to these compounds by consuming contaminated water or food or by using products that contain these compounds.[17] Ingestion of contaminated dust may also be an important route of exposure, especially for children who ingest relatively higher levels of dust due to their frequent hand-to-mouth behaviors.[18] Highly fluorinated compounds, such as perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), have been associated with serious health problems including kidney and testicular cancer, thyroid disease, and obesity. [19,20]

Production of PFOA and PFOS has been phased out in the United States due to health concerns, but these chemicals have been replaced by a new generation of chemicals with similar problematic characteristics. Although the health effects of the "new generation" of replacement chemicals have not been studied thoroughly, emerging studies are showing that the replacements are persistent and may pose similar health risks. [21]

Recommendation

Avoid purchasing furniture fabric that contains fluorinated stain treatments and instead choose fabrics that are easily cleaned with non-toxic cleaners. You may wish to select fabrics with patterns that can help to minimize the appearance of stains.

4. Antimicrobials

The Center for Disease Control defines antimicrobial agents as any agent that kills or suppresses the growth of microorganisms.[22] They are marketed and widely added to many household, personal care, and consumer products, including furniture. There are a wide variety of antimicrobials, including metallic compounds (such as silver and copper), chlorinated organic antimicrobials, and others.

Health & Environmental Effects

There is no evidence to show that antimicrobials in furniture produce significant health benefits or a reduction in the spread of infection through contact with furniture.[23] But as one expert on antimicrobials has stated, the increasing use of products containing these chemicals "may further increase the risk of antibiotic resistance, engender a false sense of security with reduced attention to cleaning and disinfection, and increase costs of products and materials." [24] In December 2015, leading health care provider Kaiser Permanente announced that it was banning 15 antimicrobial chemicals from use in its facilities, including furniture.

[25]We are exposed to antimicrobials via ingestion and through skin absorption. Some antimicrobials are associated with endocrine, thyroid, and reproductive problems, as well as increased allergies in children.[26,27]

Recommendation

Given the potential for harm to humans and the environment, and the added unnecessary cost, purchasers should specify furniture that does not contain added or built-in antimicrobials

5. Polyvinyl Chloride (PVC)

Polyvinyl chloride, also known as PVC or vinyl, is a plastic that is used in virtually every home and building in thousands of different applications. In furniture, PVC may be used for plastic parts or sometimes as an upholstery fabric.

Health & Environmental Effects

There are toxic concerns around PVC throughout the lifecycle of the plastic. PVC can release dioxin, a known carcinogen, during manufacturing, through disposal by incineration, and if it catches fire during use.[28] PVC is often treated with phthalates, lead, and flame retardants—these additives are not chemically bound to the PVC and can migrate out of the plastic and get into dust, which can be ingested and inhaled.

Phthalates, which are commonly used to soften PVC, have been shown to leach, migrate, and off-gas from furniture. Phthalates cause a wide range of toxicities in animals; the most sensitive is harm to the development of the male reproductive system.[29] Human studies also suggest that maternal phthalate exposure during pregnancy may contribute to adverse developmental effects in children, including reproductive and neurobehavioral impacts.[30]

According to the National Library of Medicine, exposure to consumer products containing PVC, including furniture, can lead to exposure to PVC dust and associated phthalates, which can cause adverse health effects such as endocrine disruption and asthma[31].

Recommendation

Specify furniture, including fabric, which does not contain PVC. Furniture companies increasingly are seeking alternatives to PVC and related additives such as phthalates. Some of the safer alternatives include: polyurethanes (PU), PVC-free and plasticizer-free urethane-based thermoplastic elastomer (TPE), and nylon films. Some products may contain a very small amount of PVC (less than 1% by weight) in plastic parts where safer alternatives are not yet available. Products withthis small amount of PVC are acceptable, but buyers can encourage manufacturers with small amounts of PVC to seek safer alternatives.

Reducing Risks in the Office from the “Hazardous Handful”

1. Buy Products Free of the “Hazardous Handful”

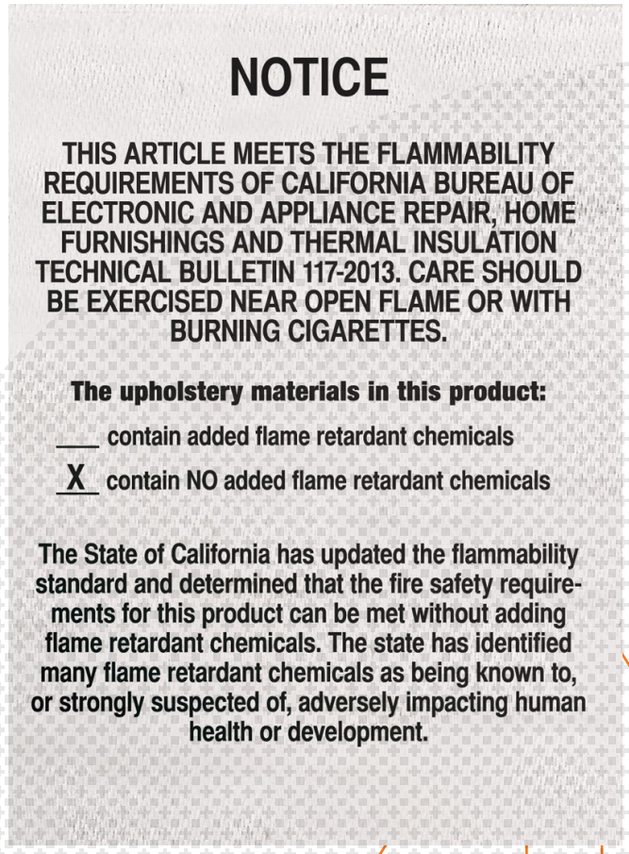
The single best way to protect yourself and your employees from harmful chemicals is not to purchase products containing them in the first place. Once these chemicals escape into the work environment, they are difficult to remove.

2. Minimize Contact with Dust

Wash your hands often, especially before eating. If possible, open your windows frequently for good ventilation. Wipe down your desk and other surfaces regularly with a wet sponge or towel to reduce dust levels. Encourage your organization to have your office vacuumed regularly, preferably with a HEPA filter.

3. Look for the Labels

TB 117-2013 can be met without flame retardant chemicals, but the standard does not prohibit their use. To ensure that your product is free of flame retardant chemicals, look for the check box on the TB 117-2013 label that indicates whether a product does or does not contain flame retardant chemicals. The label is typically located on the bottom of the chair or under the cushion of a couch. Although this label is only required for products sold in the state of California, many manufacturers are using this label nationwide. Ask your manufacturer to provide this label to help you identify healthier furniture.



Multi and Single Attribute Certification Programs and Standards for Furniture

Cradle to Cradle TM

Cradle to Cradle is a multi-attribute eco-label that includes: Material Health, Material Reutilization, Renewable Energy and Carbon Management, Water Stewardship, and Social Fairness. Product certification is awarded at five levels (Basic to Platinum), in which products are certified to the lowest level achieved in each of the five categories. It is recommended that you specify products that are rated as Silver or above since the lower levels of basic and bronze have minimal requirements. These lower levels are often used by companies who are at the beginning stages of their sustainability efforts and wish to signal to purchasers that they are on the road to improving the way their product is made. It is not until the Silver level that assessed materials are required to "not contain carcinogenic, mutagenic, or reproductively toxic (CMR) chemicals in a form that may result in plausible exposure." Visit the website for more information.

Healthier Hospitals Healthy Interiors Goal

The Safer Chemicals Challenge is one of six pillars of activity in Healthier Hospitals, a program of Practice GreenHealth. Within the Safer Chemicals Challenge, the Healthy Interiors goal aims to promote public and environmental health and to help accelerate the transformation of the furnishings market to develop safer products, while also reducing disposal costs and liability. Products that meet the Healthy Interiors goal contain restrictions on the use of the following chemicals/materials of concern above specified levels: formaldehyde, perfluorinated compounds, polyvinyl chloride (PVC), antimicrobials, and flame retardant chemicals. See the Guidance to Achieve HH Safer Chemicals Challenge for Healthy Interiors, Version 2.0, December 2015, for more information, and visit the Healthier Hospitals website for a list of products that meet these requirements.

BIFMA level® Certified

The BIFMA level® multi-attribute certification is a certification based on the ANSI/BIFMA e3 standard, which addresses material use, energy, and atmosphere, human and ecosystem health, and social responsibility at the product, facility, and organizational level. The certification is based on a points system with three different levels of achievement (1,2,3), based on the number of requirements met in the standard. Purchasers should contact the manufacturer for the product scorecard to understand the attributes of each product. There is currently no mandatory requirement within this certification that restricts the use of the "hazardous handful." CEH and Health Care Without Harm worked with BIFMA to develop a new optional criterion for the soon to be revised 2017 BIFMA standard that, if approved, would require that all products that claim this new criterion (7.4.3) comply with the CEH/HCWH specifications restricting the use of the "Hazardous Handful." As of this writing, this revised standard has not yet been approved, but voting should be completed in 2017. Once approved, purchasers should begin to request products that meet 7.4.3.

See website for more information and for a listing of products that are level® certified.

Single Attribute Certifications and Standards Indoor Air Quality

California Department of Public Health Standard Method v1.2 (commonly known as Section 01350):

The California Department of Public Health sets and oversees many health-related standards, including the Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.2 (2017) (also known as California Section 01350), which includes environmental specifications for low emitting building and furniture products. The standard practice has become widely adopted by industry, manufacturers, and the US Green Building Council's LEED program for conducting VOC testing in small-scale environmental chambers. This is not a certification, but a standard set of VOC criteria to which third-party certifiers or qualified independent test labs test and verify.

See specification for more information.

California Formaldehyde Emissions Standards from Composite Wood Products (CCR, Title 17) - Phase 2 Compliance:

The California Air Resources Board (CARB) approved the airborne toxic control measure (ATCM) to reduce formaldehyde emissions from composite wood products including hardwood plywood, particleboard, medium density fiberboard, thin medium density fiberboard (thickness ≤ 8mm), and also furniture and other finished products made with composite wood products. This standard is a state regulation. See the Frequently Asked Questions for Consumers:

Reducing Formaldehyde from Composite Wood Products from CARB for more information.

GREENGUARD Gold

Greenguard Gold is a certification program developed by GREENGUARD and operated by UL Environment, which provides a third-party testing program for manufacturers and a registry of interior products and materials that have low chemical emissions. The program addresses chemical emissions that affect indoor air quality. There are two levels of certification: the Basic level and the Gold level. Only GREENGUARD Gold is equivalent to the reduced VOC and formaldehyde emission requirements of California Department of Public Health Standard Method v1.2 (or newer), Section 01350. These are the most health protective standards and should be specified whenever possible.

See website for more information.

SCS Indoor Advantage Gold

SCS Indoor Advantage Gold is a certification program developed by Scientific Certification Systems (SCS) for the chemical emissions of furniture that affects indoor air quality. There are two levels of certification, the Basic and the Gold level. At this time, products that meet the Gold level may or may not meet the reduced formaldehyde levels required by the California Department of Public Health Standard Method v1.2 (Section 01350). Ask for the product certificate to determine the level of reduced emissions met by the product. You should see compliance with ANSI/BIFMA criteria 7.6.1, 7.6.2 and 7.6.3 noted.

See website for more information.

Sustainably Sourced Wood

Forest Stewardship Council (FSC)

The FSC's mission is to promote environmentally sound, socially beneficial, and economically prosperous management of the world's forests. This third-party certification program ensures forest products used in certified furniture are managed and harvested responsibly. For wood to maintain its FSC certification, each participant in its supply chain must be FSC Chain of Custody certified.

See website for more information.

The Health Product Declaration® (HPD)

The HPD program is an open standard consisting of a defined format and rules for reporting about the contents of building products along with the potential associated hazards and other related information. A completed HPD is created and published by companies/manufacturers about their products. The HPD allows varying levels of information disclosure regarding the product. A fully-completed HPD will include a report of hazard associations, based on the HPD Priority Hazard Lists, the GreenScreen List Translator, and when available, full GreenScreen assessments. HPDs allow for the reporting of these hazard screening results, even when the underlying chemical substances may not be fully disclosed due to intellectual property and/or other concerns. See website for more information.

California Technical Bulletin 117-2013 Labeling of Upholstered Furniture for Flame Retardant Chemicals:

The State of California passed legislation that requires the labeling of upholstered furniture that meets the furniture flammability standard (Technical Bulletin 117-2013) to clearly indicate the presence or absence of flame retardant chemicals in the product. Although this label is required only for products sold within the State of California, a large number of office furniture manufacturers are labeling their products sold nationwide in accordance with this requirement. Products that meet the furniture flammability standard and are labeled as not containing flame retardant chemicals are preferred. Clear product labeling may assist purchasers in identifying flame retardant-free products. See the Senate Bill (SB) 1019: Upholstered Furniture, Flame Retardant Chemicals Industry Advisory for more information.

Making the Business Case

So you're bought in and ready to make the case to the leaders of your company. The following 5 reasons will help you justify the allocation of time, attention, and resources and make this a priority for your company.

- **Choosing furniture free of chemicals can save you money.**

  Flame retardant-free furniture which offers modern, science-based fire safety at no extra cost, is more durable and has a more comfortable "sit." Increased longevity of furniture equals added cost savings. Cost savings may also occur from avoiding antimicrobials as well as fluorinated compounds that often increase a product's price. **There are a large number of healthier furniture options to choose from.**

- **There are a large number of healthier furniture options to choose from.**

  Leading manufacturers are already offering products without the "Hazardous Handful." Both small and large companies, selling a wide range of product types and lines have already transitioned to furniture without these chemicals of concern.

- **3. These chemicals often do not work as advertised:**

  Government studies have consistently shown that flame retardants as used in furniture have not been found to improve fire safety. Additionally, there is no data to support the efficacy of added antimicrobials in furniture in reducing the spread of infection. As knowledge about chemicals of concern grows, it becomes increasingly clear that they are unnecessary and that healthier alternatives exist

- **Purchasing healthier furniture can also help you obtain points toward LEED certification:**

  Purchasing healthier furniture can contribute toward a project's LEED certification: The LEED ID+C, IEQc4.5 Low-Emitting Materials – Systems Furniture and Seating credit promotes the use of low-emitting furniture that meets stringent indoor air quality standards. By meeting this credit the furniture can contribute toward valuable LEED points in addition to contributing to a healthier interior environment.

  A second LEED credit, LEED Healthcare MRc5, awards 1 – 2 points for avoiding the use of specific chemicals of concern including fluorinated stain treatments, added antimicrobial treatments, urea formaldehyde, heavy metals and hexavalent chromium in plated finishes. Both LEED credits can also be used as Innovation Points for any LEED rating system (beyond the use of LEED ID+C for IEQc4.5 or LEED Healthcare for MRc5).

- **Making the transition to healthier furniture would be a major success story for your sustainability efforts.**

  Purchasing furniture without toxic chemicals can help you create a healthier and more sustainable work environment. This effort would be a great sustainability success story for your annual report.

- **Many large purchasers have helped shift the market away from the "Hazardous Handful".**

  We can advance this work by increasing the number of purchasers that have purchased furniture without the "Hazardous Handful". By choosing furniture without these toxic chemicals, you would be joining leading organizations such as Kaiser Permanente, LinkedIn, Genentech, the City and County of San Francisco, the City of Portland, HDR Architecture, Perkins + Will, University of California Santa Cruz, Partners HealthCare, and others who have already taken action to purchase furniture without the "Hazardous Handful". Through your purchasing power your institution can be at the forefront of shifting the market to healthier furniture.

Making It Easy for Purchasing

Purchasing furniture without the "Hazardous Handful" is a simple and great way to improve the health of your indoor office environment. CEH can help you at every step along the way. Below is a list of resources that we have created that will

1. Vendor Letter

You can use this model vendor letter to alert your suppliers of your desire to procure furniture without these chemicals of concern. These types of communications can motivate companies to make the transition to safer products more quickly. Click here for vendor letter.

2. Technical Specifications

CEH, in partnership with Health Care Without Harm, developed technical specifications for furniture that detail the restrictions on the key chemicals of concern. Purchasers can use these technical specifications in Requests for Proposals, Requests for Information, or in contracts. These specifications can also be shared with your suppliers so that they know the details of what you will be preferring. Click here for specs.

3. Reason to Prefer Furniture Without The "Hazardous Handful"

This handout offers a great and concise list of why your business or organization should prefer furniture that is free of the "Hazardous Handful". Share it with other businesses to see how their employees and business can benefit from making this shift. Click here for document.

4. Purchaser Pledge

Gain institutional support for the procurement of healthier furniture by having your administration sign the CEH "Purchaser Pledge to Prefer Healthier Furniture." Click here for pledge.

5. Links to Two Databases of Products without the "Hazardous Handful"

The Center for Environmental Health and the Commonwealth of Massachusetts teamed up to survey the State's major office furniture vendors. The results of that survey can be found in the furniture table and is easily searchable to find the furniture that meets your organization's or business's needs. Health Care Without Harm also offers lists of products organized by supplier that meet the Healthy Interiors Goal through the Healthier Hospitals Program.

6. Educational Webinars

This recorded webinar presentation was offered for the National Association of Educational Procurement (NAEP). The webinar discusses the chemicals and materials of concern used in furniture, the latest information on new flammability regulations, and ways to reduce exposure to these toxic chemicals. In addition, The Center for Environmental Health reviews many of the eco-labels in the marketplace and provides concrete purchasing tips. Lastly, Harvard University provides a case study with general guidelines for how to easily procure flame retardant free furniture. While the audience for this webinar was higher education, the principles in the webinar are pertinent for purchasers from other sectors.

End Notes

[1] The Inside Story: A guide to Indoor Air Quality, https://www.epa.gov/indoor-air-quality-iaq/inside-story-guide-indoor-air-quality, Accessed May 2017

[2] "Buildings and their Impact on the Environment: A Statistical Summary". Revised April 22, 2009, http://www.epa.gov/greenbuilding/pubs/gbstats.pdf

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