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Toxic-Free FUTURE

Exploring Flooring:

Our Current Standard is Unsustainable

Presented by CEH & TFF

Featured Speakers

Mike Schade

Senior Director of Programs and Strategy at Toxic-Free Future

Jose Aguayo

Senior Program Manager of Green & Clean Procurement at CEH

The Center for Environmental Health (CEH)

- Non-profit organization working to reduce exposure to toxic chemicals in our air, water, soil, food, and the products we use every day.
- Expertise in sustainable non-toxic built environment products (furniture, flooring & foodware).
- Developed sustainable furniture resources to help institutional purchasers select safer products.

The State of the Flooring Market

Our Current Standard is Unsustainable

- Luxury Vinyl Tile (LVT) dominates the market
  - $23.8 billion in 2024
  - Over $43 billion by 2031
- Largely used because:
  - Price
  - Finish
  - Maintenance
- LVT is a marketing term for polyvinyl chloride (PVC) created by industry

Our Current Standard is Unsustainable

- LVT has several adverse health effects associated with it
  - Cancer
  - Developmental problems
- Manufacture results in harmful emissions
  - Greenhouse gases
  - Toxic chemicals
- Transportation of raw materials and disposal endangers fenceline communities
  - East Palestine train derailment
  - Landfills and incinerators

Alternative Materials are Available

- Alternative materials have become more prevalent in recent years
  - Increased purchaser demand
  - Understanding of the environmental harms of PVC
- Second part of *Exploring Flooring* series will highlight these alternatives
  - June 26, 2:00 pm ET/11 am PT
  - Register here

Deep Dive into PVC

Vinyl Plastic Flooring

Environmental Health and Justice Impacts, Business Risks

Mike Schade

Senior Director of Programs and Strategy

Toxic-Free FUTURE

What we do

Scientific Research

Policy Advocacy

Market Transformation

Why we are concerned about PVC (vinyl) Plastic flooring

Hazards in all phases of its life cycle:

Production

Use

Disposal

Vinyl flooring: hazardous to produce

Production

- Numerous hazardous feedstocks, such as vinyl chloride, ethylene dichloride, chlorine gas
- Environmental justice
- Climate impacts of extraction and production

Vinyl chloride explosion at Formosa Plastics **vinyl flooring plant in IL** that killed five workers and seriously injured others

Photo credit: U.S. Chemical Safety Board

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Why are we concerned about vinyl chloride

- Classified as a known human carcinogen
  - International Agency for Research on Cancer (IARC), U.S. Department of Health and Human Services (HHS), and the U.S. Environmental Protection Agency (EPA)
- Associated with liver cancer, lung cancer, brain cancer, lymphoma, leukemia, breast cancer, and numerous other health problems
- Poses serious hazards to both workers and communities
- 99% of vinyl chloride used to make PVC plastic

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The pollution from the OH disaster was not an isolated incident

- **Nineteen vinyl chloride and PVC** resin factories operate in the U.S.
- Between **10-20 billion pounds of vinyl chloride** produced in the U.S. in a year
- These PVC plastics plants reported releasing **more than 414,803 pounds of vinyl chloride into the air in 2021**

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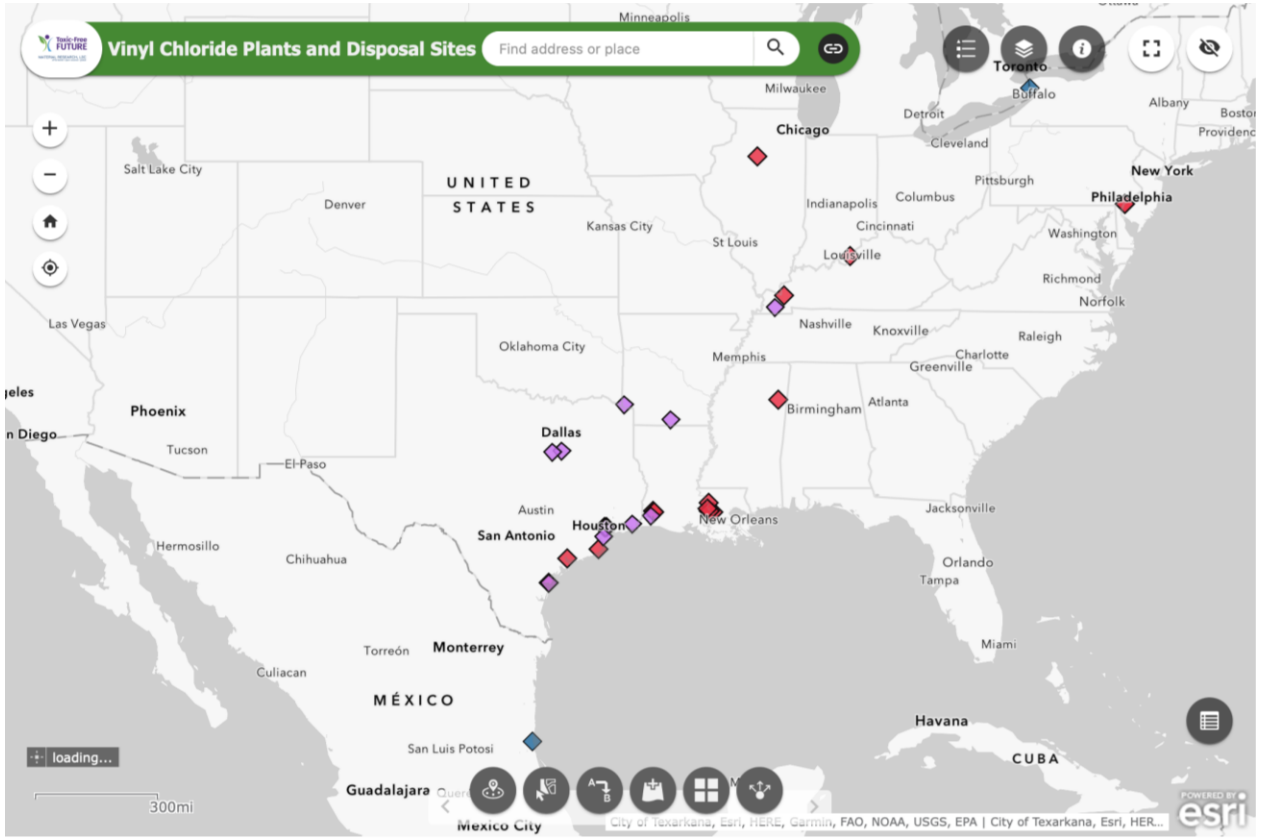
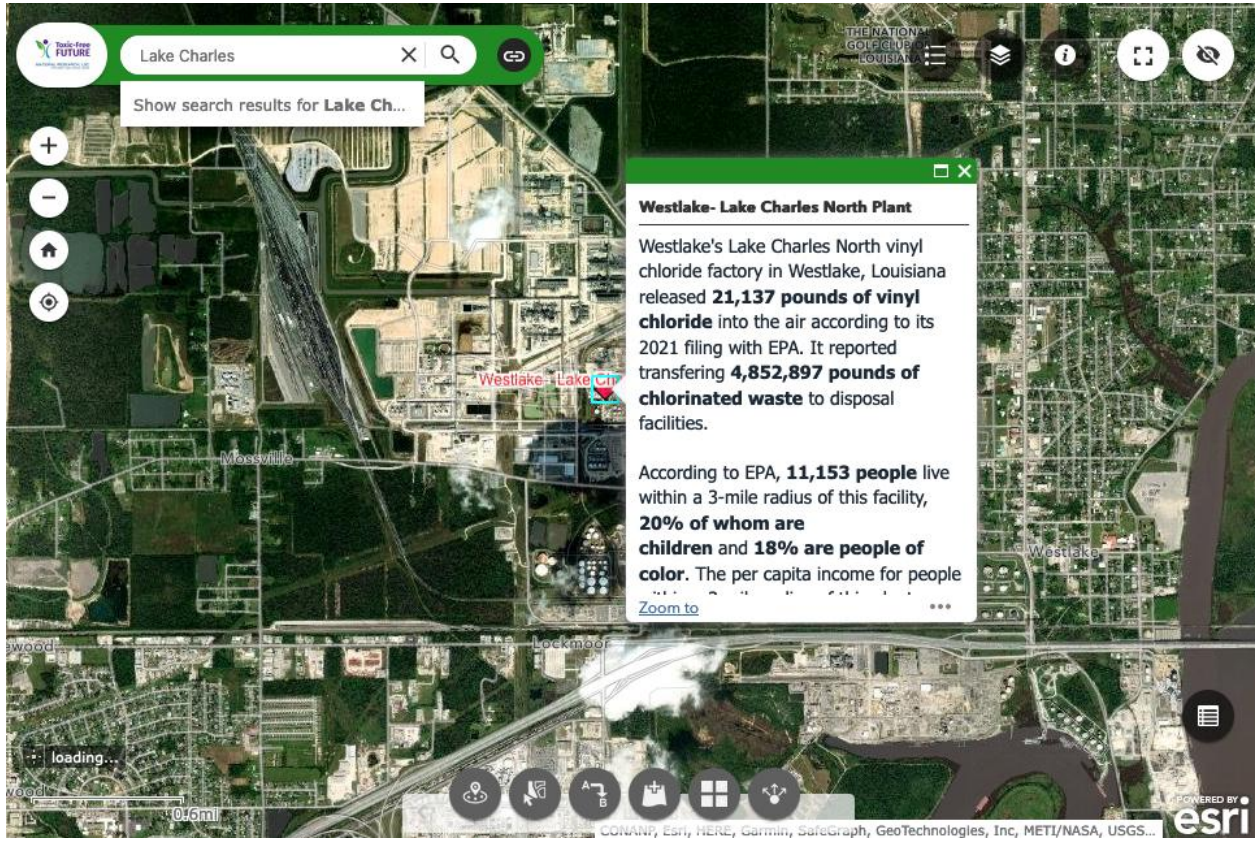
Interactive Map:
Where are the largest vinyl chloride producers and disposal sites located?





View the map:
https://toxicfreefuture.org/research/pvc-poison-plastic/map-where-are-the-largest-vinyl-chloride-producers-and-disposal-sites-located/

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Vinyl plants release cancer-causing chemicals into low-income communities of color

- **373,262 U.S. residents** live within three miles of a vinyl chloride, PVC manufacturing, or PVC waste disposal facility
- Among the people living within a three-mile radius of these plants, **63% are people of color, compared to 41% nationwide**
- Residents of these areas earn an average **of $23,747 per capita, which is 37% below the national average**

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This could happen again.

Massive amounts of vinyl chloride are regularly shipped by rail across the country, putting more than 3 million people at risk from Texas to New Jersey.

Photo: National Transportation Safety Board

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Massive amounts of vinyl chloride shipped by rail

- Up to **36 million pounds** of vinyl chloride travels on **more than 200 rail cars** across nearly 2,000 miles of U.S. railways at any given moment.
- These shipments supply OxyVinyls and Orbia PVC plastics **factories in New Jersey, Illinois, and Niagara Falls, Ontario.**
- Over the course of a year, an **estimated 8,595 rail cars carry approximately 1.5 billion pounds of vinyl chloride** from OxyVinyls, the nation's top producer of the chemical, to these plastics plants.

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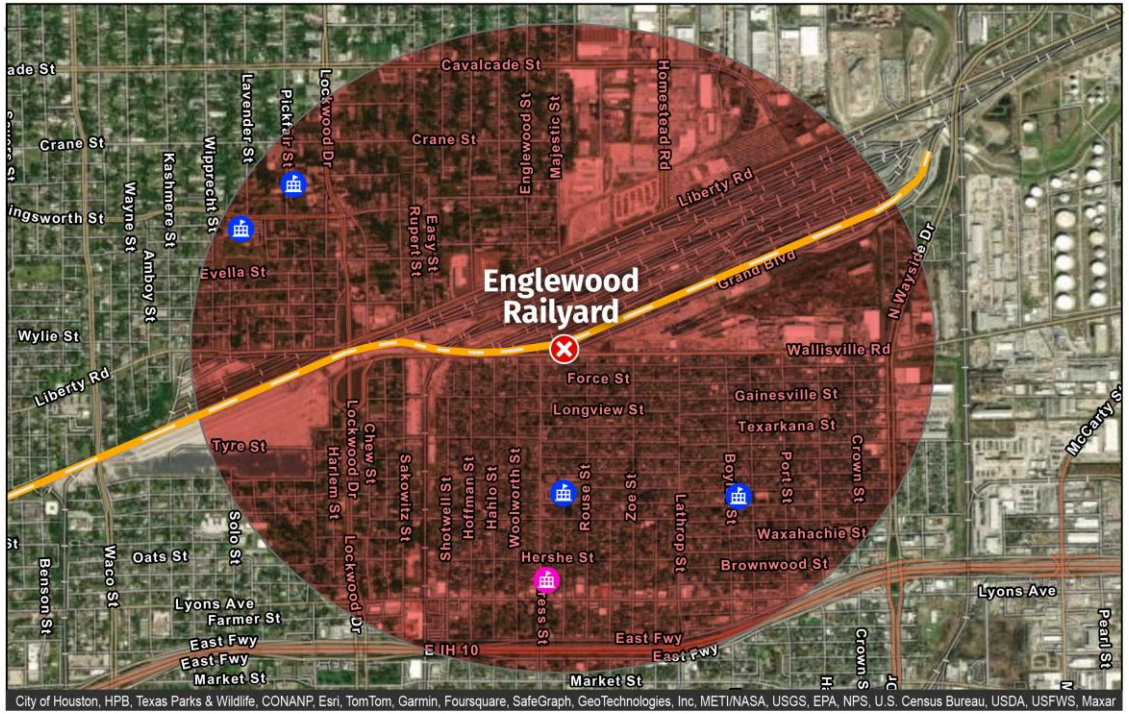
Englewood Railyard in Houston, TX

Along the OxyVinyls Train Route – Demographic Analysis



In a one-mile radius:

Population: **14,631**

People of Color: **97%**

Schools: **4 public, 1 private**

- Englewood Railyard
- OxyVinyls Rail Route
- Private Schools
- Public Schools
- One-mile Radius

0 0.25 0.5 1 Miles

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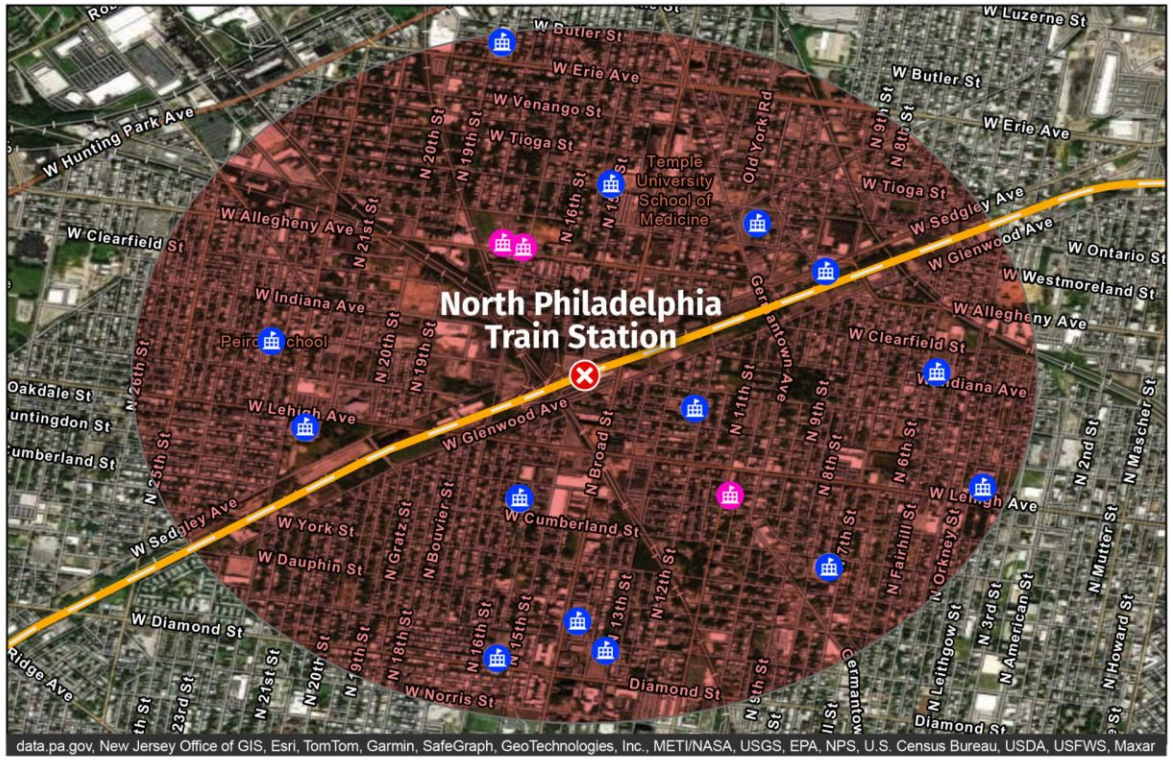
MATERIAL RESEARCH L3C

North Philadelphia Train Station in Philadelphia, PA

Along the OxyVinyls Train Route – Demographic Analysis



In a one-mile radius:

Population: **60,432**

People of Color: **95%**

Schools: **15 public, 3 private**

- North Philadelphia Rail Station
- OxyVinyls Rail Route
- Private Schools
- Public Schools — Two schools are located at 5070 Parkside Avenue.
- One-mile Radius

0 0.25 0.5 1 Miles

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MATERIAL RESEARCH L3C

Toxic additives in PVC plastic can expose consumers to harmful chemicals

- **Plasticizers** – dozens of phthalates such as DEHP and DINP
- **Flame retardants** – chlorinated paraffins, organophosphate esters (OPEs)
- **Stabilizers** – lead, cadmium, organotins

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Incineration, landfilling and accidental building fires: releases toxic combustion byproducts

"Due to intrinsic hazards, we support efforts to identify and use alternative building materials that do not pose as much a risk as PVC to firefighters, building occupants or communities"

-International Association of Firefighters (IAFF)

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Risk:

- Reputation
- Regulation
- Legal & Financial

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Risks:
Reputation

- **300+ stories/mentions** on our PVC Toxic Cargo report released in 2024
  - Hallie Jackson's NBC News Now aired nationally
  - NBC daily show story aired in **more than 120 cities** around the U.S.
- Estimated potential reach of **525 million** viewers


The Washington Post
Democracy Dies in Darkness

Millions of Americans face risk of a toxic 'bomb train'

A new report estimates trains carrying toxic chemicals run past millions of people, including in major population hub

By Amudalat Ajasa

Updated January 29, 2024 at 11:34 a.m. EST | Published January 29, 2024 at 6:00 a.m. EST

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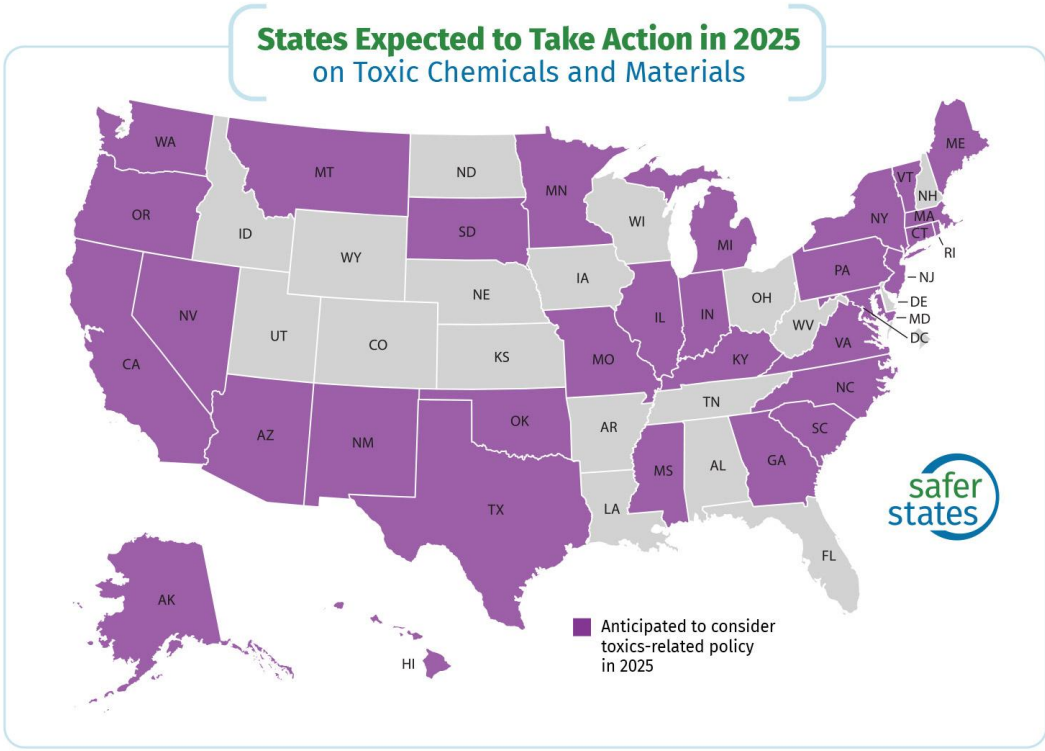
Risks:
Regulation

State:

- Plastic packaging containing chlorinated substances (PVC, PVDC) finalized as high priority products in WA state
- Plastics in packaging bans: Approx. 17 states (e.g. CA, MA, NY) expected to consider bills in 2025
- Procurement: Cities and states including NY and SF restricting PVC in governmental procurement



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Risks:
Regulation

Federal

Under evaluation for possible bans through TSCA:

- Ethylene dichloride, used to make vinyl chloride
- Vinyl chloride
- Some plasticizers and flame retardants

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Risks:
Regulation

International:

- **Europe:** PVC and additives in PVC being considered for regulation under REACH
- **Global Plastics Treaty:** PVC under consideration for restriction

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Risks:
Legal & Financial

- **EU disclosure requirements** – new regulations requiring companies to publicly report on financial metrics related to toxic chemicals of concern
- **SASB standards for Building Products and Furnishings -** Management of Chemicals in Products criteria
- **Investors –** shareholder resolutions filed in recent years at Amazon, Costco, Disney, Home Depot, and Westlake Chemical on chemicals or plastics

Risks:
Legal & Financial (cont.)

- **Proposition 65 and product testing:** PVC products increasingly being tested for toxic additives (e.g. phthalates, metals), leading to lawsuits under prop 65
- **State Attorney Generals beginning to take legal action on plastic pollution** (e.g. NY Attorney General and PepsiCo)

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Safer solutions are within reach.

Benchmarking retailers on PVC, toxic additives, and safer solutions

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The 2024 Retailer Report Card

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Ban the Bad:
Goals

Percent of retailers with public, time-bound goals to reduce or eliminate:

- Chemicals & plastics: 44%
- PFAS: 30%
- PVC plastic: 20%

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Solutions: Informed™ - Scientific Rigor, Easy to Use

- Best in Class
- Better
- Good
- Reduce
- Avoid
- Worst in Class
- Undetermined

Flooring

- Linoleum
- Solid Wood Floors (pre-finished)
- Ceramic Tiles (no added lead)
- Solid Wood Floors (site-finished)
- Cork Floors (pre-finished)
- PVC-free Resilient Flooring
- Engineered Wood Floors (pre-finished)
- Rubber or Rubber/Cork Floors (made without tire-derived crumb rubber)
- Laminate
- Carpet (with no fly ash, no vinyl or polyurethane backing, and no PFAS)
- Vinyl Floors (no phthalates or hazardous recycled content)
- Carpet (containing fly ash, vinyl or polyurethane backing, and PFAS)
- Vinyl Floors (containing phthalates, hazardous stabilizers, and hazardous recycled content)

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Thank you

Mike Schade

Senior Director of Programs and Strategy

Toxic-Free Future

mschade@toxicfreefuture.org

ToxicFreeFuture.org

Questions?

THANK YOU!

Thank you for joining us today.

Thank you to our wonderful speakers. We will be sharing a copy of the slides and the presentation recording with all attendees by 6/5.

Keep the conversation going online using

#CEHExploringFlooring

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