PANELISTS

- Robert Courtnage, Associate Chief of the Fibers and Organics Branch of the US Environmental Protection Agency https://www.epa.gov/formaldehyde/resources-and-guidance-materials-translations-formaldehyde-emission-standards-composite

- Kimberly Wise White, Senior Director of the American Chemistry Council's Chemical Products & Technology Division www.americanchemistry.com

- David Jones, Director of Project Services for Benchmark International, an EPA and CARB approved third party certifier www.benchmark-intl.com

- Cindy Squires, Esq. Executive Director of the International Wood Products Association www.iwpawood.org

American Chemistry Council | Formaldehyde Panel

NWFA EXPO – PANEL DISCUSSION
Regulations and Science

April 13, 2018

American Chemistry Council | Formaldehyde Panel

- UNDERSTANDING EXPOSURE AND CHEMICAL ASSESSMENT
- REGULATORY LANDSCAPE
- THE FORMALDEHYDE PANEL

Formaldehyde occurs naturally and is all around us

Formaldehyde is found in every living system -- from plants to animals to humans. It metabolizes quickly in the body, breaks down rapidly, is not persistent and does not accumulate in the body.

Humans Produce Formaldehyde

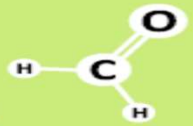
Formaldehyde is a naturally occurring substance made of carbon, hydrogen and oxygen. Humans produce about 1.5 ounces of formaldehyde a day as a normal part of our metabolism. Inhaled formaldehyde is rapidly metabolized and ultimately converted to carbon dioxide and exhaled. Formaldehyde does not accumulate in the body.

A Natural By-Product

Formaldehyde also occurs as a by-product from all combustion processes, such as forest fires, automotive exhaust and cooking. Low levels of formaldehyde occur naturally in a variety of fruits and vegetables, including apples, carrots and bananas. It does not accumulate in the environment or within plants and animals.

Human Exposure to Formaldehyde

The general effects of formaldehyde on the human body are well-known. Everyday exposures to inhaled formaldehyde do not reach the lungs or other distant sites in the body. According to the large body of research available, the levels of formaldehyde to which the public is exposed are not high enough to cause adverse any health effects.



One of the Most Studied Chemicals In Use Today

Formaldehyde is found naturally in rural, urban and indoor air, and can be found at very low levels in many household products such as latex paint, furniture and cabinets. Formaldehyde levels in typical indoor environments are well below concentrations that could trigger sensory irritation in most people. **The World Health Organization has set protective indoor air guidelines for formaldehyde at 80 ppb.** Typical household formaldehyde concentration levels are between 16 and 32 ppb.

As one of the most-studied chemicals in use today, formaldehyde has been researched extensively to scientifically support that the current standards and safeguards are protective.

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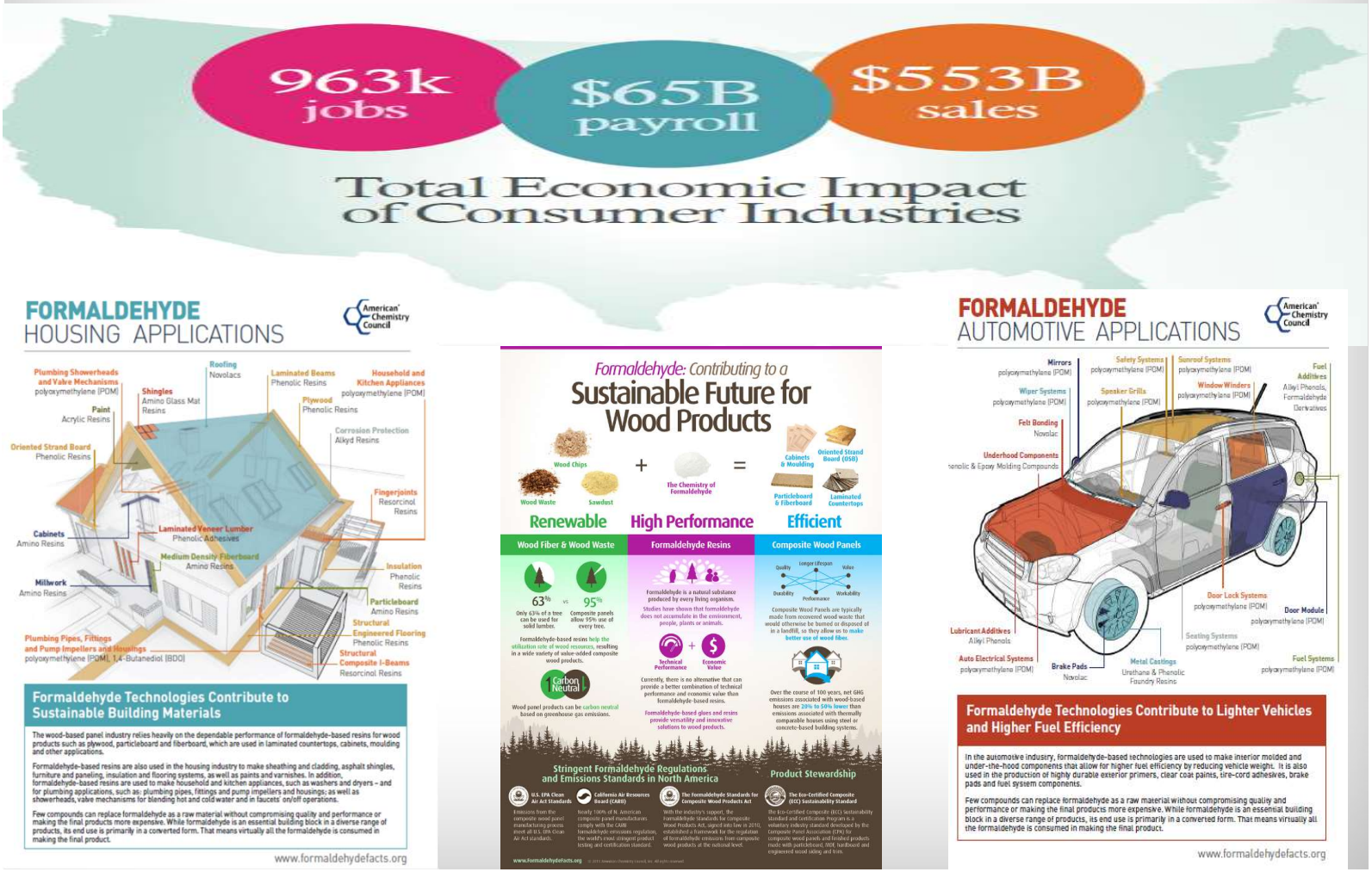
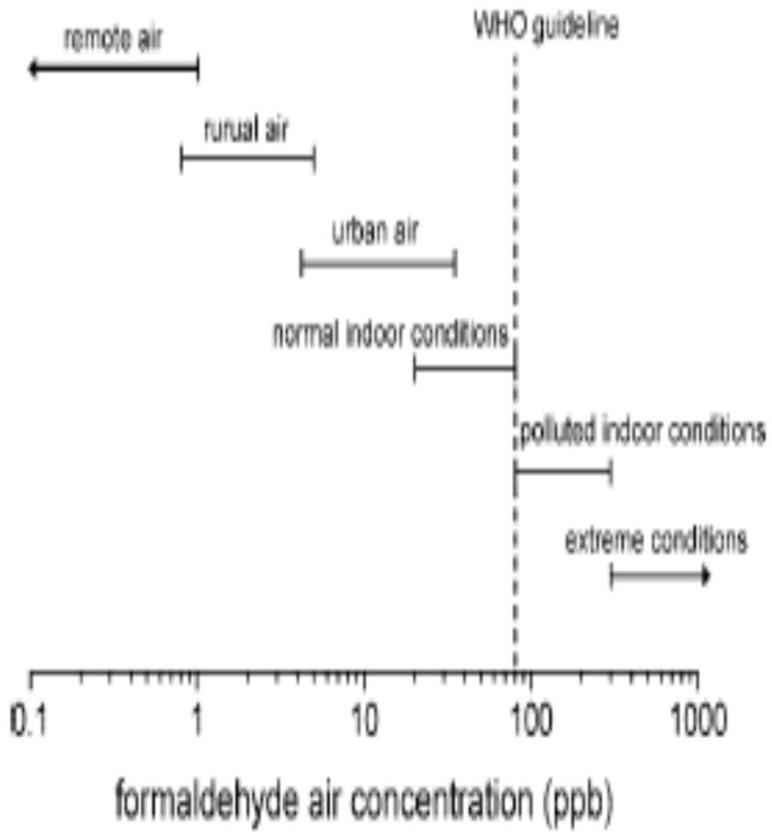
Formaldehyde: An Economically Important Chemical



UNDERSTANDING ENVIRONMENTAL EXPOSURE TO FORMALDEHYDE



Excerpted from Salthammer et al 2010. Formaldehyde in the indoor environment. Chem Rev. Apr 14;110(4):2536-72.

Recent 2017 Publication Assessing Indoor Formaldehyde Exposure

- ❑ Evaluated approximately 32,000 badge samples from more than 19,000 residences
- ❑ Approximately 91% had formaldehyde concentrations ≤81ppb (WHO Guideline);
- ❑ Substantial majority were <40 ppb

Data from Sheehan et al 2017 . Potential Exposure and Cancer Risk from Formaldehyde Emissions from Installed Chinese Manufactured Laminate Flooring. Risk Anal. Nov 15.

US Chemical Evaluations of Formaldehyde

Formaldehyde is the subject of governmental assessments that seek to determine if there is a connection between formaldehyde and certain health effects, including cancer.

Evaluations

- A 2012 Review by the International Agency for Research on Cancer (IARC) classified formaldehyde as carcinogenic to humans.
- A 2012 European Chemical Assessment Agency Committee for Risk Assessment review found that the there is limited evidence of carcinogenicity in humans
- A 2012 National Toxicology Program (NTP) Report on Carcinogens (RoC) classified formaldehyde as known to be a human carcinogen
- EPA Integrated Risk Information System (IRIS) assessment evaluating formaldehyde and potential impacts to human health

Formaldehyde Emission Regulations - World-Wide

Standard	Japan	European Union (E1)	California – ARB (Phase I – 2009)	California – ARB (Phase II – 2011)	U.S. EPA – TSCA
Maximum Emission Limit	▪ F***0.09 ▪ F****0.05	▪ Hardwood Plywood - 0.14 ▪ Medium-Density Fiberboard - 0.10 ▪ Particleboard - 0.14	▪ Hardwood Plywood - 0.08 ▪ Hardwood Plywood – Composite Core - 0.08 ▪ Medium-Density Fiberboard - 0.21 ▪ Thin Medium-Density Fiberboard - 0.21 ▪ Particleboard - 0.18	▪ Hardwood Plywood – Veneer Core - 0.05 ▪ Hardwood Plywood – Composite Core - 0.05 ▪ Medium-Density Fiberboard - 0.11 ▪ Thin Medium-Density Fiberboard - 0.13 ▪ Particleboard - 0.09	▪ Hardwood Plywood – Veneer Core - 0.05 ▪ Hardwood Plywood – Composite Core - 0.05 ▪ Medium-Density Fiberboard - 0.11 ▪ Thin Medium-Density Fiberboard - 0.13 ▪ Particleboard - 0.09

Canadian Composite Wood Rule Activities

- On March 18, 2017, a Notice of Intent to develop regulations respecting formaldehyde
- Introductory webinars held on April 5 and April 19, 2017
- Voluntary data gathering questionnaire launched on April 5, 2017introductory webinars were launched on April 5 and April 19, 2017 and a voluntary data gathering questionnaire was launched on April 5, 2017
- Multi-stakeholder workshop on September 6, 2017
- Proposed regulations expected in 2018

The 1976 Toxic Substances Control Act regulated the production & use of industrial chemicals in commerce

New Chemicals:

Any chemical introduced or a significant new use of an existing chemical required notice and/or EPA review before commercialization. Generally viewed as effective.

Existing Chemicals:

All chemicals in commerce when TSCA was enacted were "grandfathered" - no EPA review was required for the chemicals to remain in use. Became a greater source of debate.

Lautenberg Chemical Safety Act: Protect Americans' health and the environment

- Subjects all chemicals in commerce to an EPA review for the first time
- EPA must review and make an affirmative safety determination before a new chemical can come to market
- Requires EPA to consider vulnerable groups like infants, pregnant women, and the elderly when reviewing chemicals for safety
- Requires EPA to prioritize chemicals so those that need it most are reviewed first
- Makes it easier for EPA to require more safety testing of chemicals
- Gives EPA clear authority to manage risks posed by chemicals, including labeling requirements, use restrictions, phase-outs, or bans
- Sets aggressive deadlines for EPA to complete its work

LCSA Goal: Strengthen federal oversight to ensure a robust, uniform national chemical management system that promotes the safe use of chemicals & public confidence in chemical safety.

EPA's final decisions will preempt existing & future state chemical laws and regulations…

EXCEPT in certain cases:

- *State laws enacted before Aug. 31, 2003*
- *State rules pertaining to a chemical enacted before April 22, 2016 – unless & until EPA acts on the same chemical*

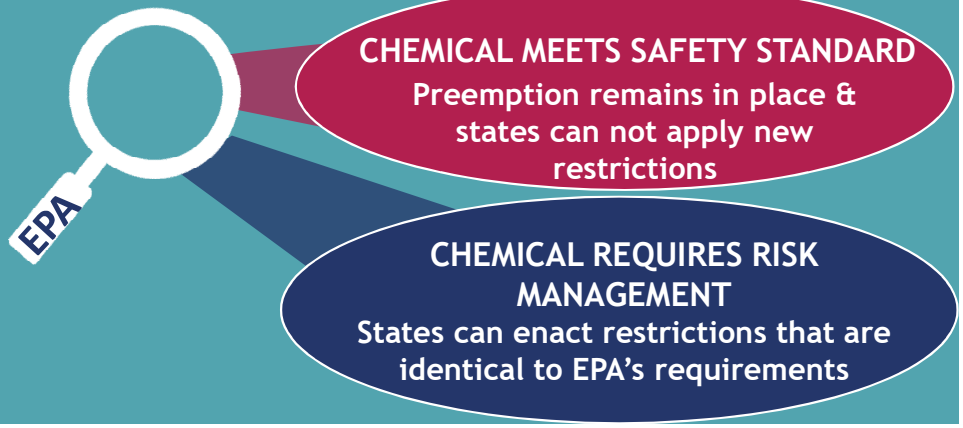
As of 2016, 15 states had chem laws

*Preemption is limited to the scope of EPA's evaluation i.e., the same conditions of use

States can continue to act on chemicals EPA has not evaluated
* Including low priorities

Once EPA publishes the scope of a risk evaluation, states' ability to place new restrictions on that chemical is PAUSED while EPA conducts its work.

*States can apply for waivers from PAUSE & final preemption



The Formaldehyde Panel

Formaldehyde Panel Science To Inform Chemical Assessment

- Evaluation of differences between effects caused by formaldehyde in the environment vs what the body produces naturally
- Understanding and bounding risk from formaldehyde exposure
- Analysis of how conservative models can over predict risk for formaldehyde exposures
- Evaluation of exposure thresholds
- Evaluation of formaldehyde workers and risk of nasopharyngeal cancers
- Evaluation of respiratory endpoints and formaldehyde exposure

COLLABORATE AND ENGAGE

- ✓Coordinate and join the Formaldehyde Panel to be kept up to date on the most relevant information impacting formaldehyde regulations.
- ✓Support scientific research through the Foundation for Chemistry Research and Initiatives to ensure regulations are science-based.
- ✓Share information and best practices.
- ✓Engage in legislative and regulatory activities.

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