Harmonization of California's Formaldehyde Regulation

**Joint Industry Workshop
on the U.S. EPA Formaldehyde Rule
Colfax, North Carolina**

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Air Resources Board

Overview

- Background
- Summary of CARB regulation
- Requirements for industry sectors
- Efforts to harmonize with U.S. EPA regulation
- Comparison of international emission standards
- Status of CARB enforcement
- Emissions testing
- Questions

Background

- In 1992, the California Air Resources Board (CARB) listed formaldehyde as a toxic air contaminant

- Majority of formaldehyde emissions in California are from vehicle exhaust

- Highest air concentrations of formaldehyde are indoors

- Many sources of indoor formaldehyde, but primary indoor source historically has been composite wood products

Summary of CARB Regulation

- CARB's Composite Wood Products Airborne Toxic Control Measure (ATCM) to reduce public exposure to airborne formaldehyde was finalized in 2008

- ATCM established formaldehyde emission standards for hardwood plywood (HWPW), particleboard (PB), & medium density fiberboard (MDF)

Summary
(continued)

- Two phases of formaldehyde emission standards
  - Most stringent Phase 2 standards became effective between 2010 and 2012

- Phase 2 standards
  - HWPW-VC = 0.05 parts per million (ppm)
  - HWPW-CC = 0.05 ppm
  - PB = 0.09 ppm
  - MDF = 0.11 ppm
  - Thin MDF = 0.13 ppm

Summary
(continued)

- Applies to products sold, supplied, used, imported for sale, or manufactured for sale in California

- Requires finished goods (e.g., furniture, flooring, cabinets, etc.) to be made from compliant HWPW, PB, and MDF panel material

- Industry sectors affected by ATCM include:
  - Panel manufacturers
  - Fabricators of finished goods
  - Distributors, importers, and retailers of panels and finished goods

Summary
(continued)

- Implementation of regulation began in 2009

- Collaborative interaction with CPA, HPVA, AHFA, KCMA, BIFMA, IWPA, RVIA, and retailers association

- Outreach efforts to assist businesses
  - Established Composite Wood Products ATCM website
  - Advisories, fact sheets, and FAQs
  - Maintain current list of certified panel manufacturers
  - Translated regulation and fact sheets into 5 languages
  - Participated in numerous meetings and gave presentations to inform industry groups

Requirements for Industry Sectors
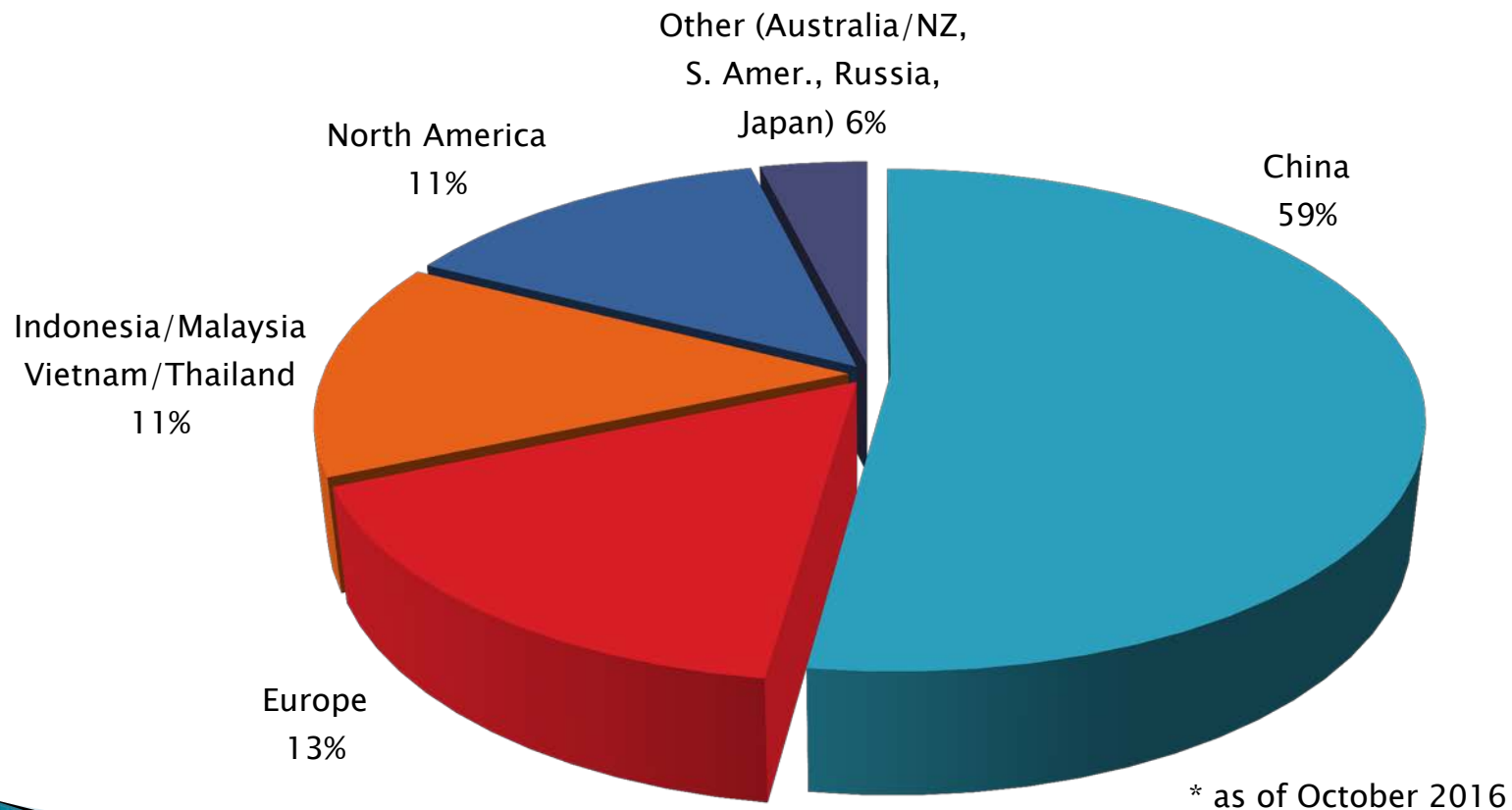## *Panel Manufacturers*

- Must be third party certified by CARB-approved TPCs
  - TPCs provide two main services:
    - Process verification & emissions testing
  - 42 CARB-approved TPCs worldwide (North America, Europe, & Asia)
  - About 1,200 certified mills worldwide

Requirements for Industry Sectors
Panel Manufacturers (continued)

Certified Mills Worldwide*

Other (Australia/NZ, S. Amer., Russia, Japan) 6%

North America 11%

Indonesia/Malaysia Vietnam/Thailand 11%

Europe 13%

China 59%

* as of October 2016

Requirements for Industry Sectors
Panel Manufacturers (continued)

- Routine emissions testing
- Keep records
- Label panels or bundles
- Provide statement of compliance on invoice or bill of lading to customers

Requirements
Panel Manufacturers (continued)

- ## NAF/ULEF Program

  - Regulation allows exemption from third party certification for panel manufacturers using no-added formaldehyde (NAF) or ultra-low-emitting formaldehyde (ULEF) resin systems

  - Manufacturers must apply to CARB for approval

  - About 230 CARB-approved NAF and ULEF mills worldwide

Requirements
Fabricators

- Use certified Phase 2 compliant composite wood material to make finished goods for sale in California
- Obtain statement of compliance from suppliers
- Verify compliance statements
- Keep records
- Label finished goods or boxes
- Provide statement of compliance on invoice or bill of lading to customers

Requirements
Importers, Distributors, & Retailers

- Purchase Phase 2 compliant composite wood panels and finished goods for sale in California
- Take reasonable prudent precautions
- Keep records
- Provide statement of compliance on invoice or bill of lading to customers

Requirements
Labeling

- CARB regulation requires labeling of panels and finished goods
- Panels
    - Manufacturer name
    - Product lot or batch number
    - Compliance level (i.e., Phase 2, NAF, or ULEF)
    - TPC number
- Finished goods
    - Fabricator name
    - Production date
    - Compliance level (e.g., Phase 2)

Requirements
Labeling (continued)

- CARB recently updated labeling advisory
- Key update is to clarify that labels for finished goods should not include third party certifier (TPC) number
  - Misleads customers that TPC verified emissions of finished good
  - Only panels are required to be TPC verified

Requirements
Labeling (continued)

- CARB will accept U.S. EPA TSCA Title VI labeled panels and finished goods after Dec. 12, 2017
- Finished goods containing less than 144 square inches of composite wood material are exempt from U.S. EPA labeling
  - not exempt from CARB labeling requirement

Requirements
Labeling (continued)

- Confusion with California Proposition 65 labeling requirements
  - Voter initiative passed in 1986
  - Requires businesses to warn of significant exposure to chemicals listed by California OEHHA that cause cancer, birth defects, or reproductive harm
  - Warning required unless exposure below OEHHA's "safe harbor" levels
  - Many companies label products to protect against lawsuits, even when no expected harm
  - Such labels alarm consumers

Efforts to Harmonize with U.S. EPA Regulation

- Numerous discussions since 2010 between U.S. EPA and CARB staff in effort to harmonize regulations
- U.S. EPA regulation based on CARB ATCM
- Several differences between federal and state regulations
  - Laminated products made by fabricators
  - Recordkeeping requirements
  - Testing requirements for third party certifiers
  - Quality control test methods used by panel manufacturers

Efforts to Harmonize
(continued)

- CARB staff expects to amend regulation to clarify requirements and align CARB regulation with U.S. EPA regulation, where appropriate
- Goal to improve clarity, enforceability, and to better ensure compliance of imported products
- CARB public workshop on proposed amendments
    - Tentatively, latter half of 2017 or early 2018

Comparison of International Emission Standards

- CARB & U.S. EPA standards are identical
- Canada
  - in 2016, adopted standards identical to CARB
- Mexico
  - in 2016, proposed less stringent standards (similar to CARB Phase 1)
- Europe (voluntary)
  - in 2016, proposed PB standard more stringent than CARB
  - HWPW standard is slightly less stringent than CARB
  - MDF standard is more stringent than CARB
- Japan
  - construction standards allow mixture of products that are more and less stringent than CARB

Status of CARB Enforcement

- Inspections conducted at panel retailers, distributors, & retailers of finished goods

- Products inspected for compliance with labeling requirements

- Documentation reviewed regarding statement of compliance

- Samples collected for emissions testing

- March 2016, CARB settled case against Lumber Liquidators for selling noncompliant laminate flooring (labeled Phase 2 compliant) imported from China – penalty of $2.5 million

- CARB will continue to investigate other businesses

Emissions Testing

- Purpose is to determine if composite wood panels and composite wood material in finished goods comply with emission standards as part of enforcement

- Sample preparation procedures for panels and finished goods

- Emissions testing using CARB's small chamber test method (ASTM D6007)
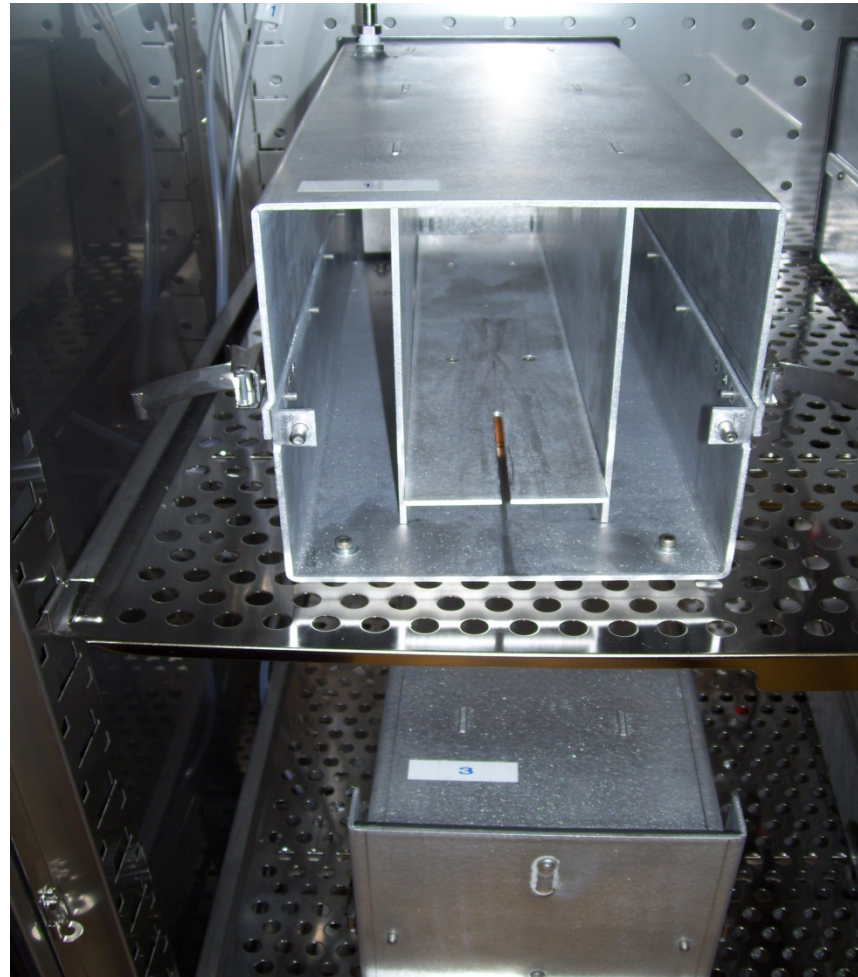
Emissions Testing
Sample preparation of finished good – sanding off laminate

Emissions Testing
CARB's small testing chamber

Emissions Testing
(continued)

- Extensive testing conducted to develop sample preparation procedures
  - Procedures finalized in 2013
  - Posted to Composite Wood Products ATCM website

- CARB accounts for uncertainty associated with sample preparation & emissions testing when considering whether to take enforcement action

- Only CARB has authority to determine compliance

Questions

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- Composite Wood Products ATCM website:
  http://www.arb.ca.gov/toxics/compwood/compwood.htm