Comments of the
Federal Wood Industries Coalition

Regarding

Draft Scope of the Risk Evaluation for Formaldehyde

Docket ID HQ-OPPT 2018-0438

June 1, 2020
I. Introduction

These comments are submitted in response to the “Draft Scope of the Risk Evaluation of Formaldehyde” (the “Draft Scope”) by the Federal Wood Industries Coalition (“FWIC”), a group of industry trade associations representing the manufacturers of composite wood panels, suppliers to the industry and users of these products in applications such as furniture, fixtures, cabinets and construction.1

FWIC appreciates the exclusion in the Draft Scope for composite wood panels already regulated by both the United States Environmental Protection Agency (“EPA”) and California pursuant to their respective authorities in Title VI to the Toxic Substances Control Act (“TSCA”)2 and the California Composite Wood Product Regulation.3 Title VI of TSCA enjoyed bipartisan support in Congress, reflecting the support of a wide range of stakeholders, including the Sierra Club, Healthy Homes, the American Academy of Pediatricians, the United Steel Workers and various industry associations. It provides effective regulation of composite wood panels and the products made from them.

Congress and EPA have already addressed formaldehyde in composite wood panels and related products, in a process dating back to 2008 and consuming a great deal of energy from Congress, EPA, the regulated community and public interest groups.4 Hence, excluding composite wood panels and their downstream uses in construction, component parts and finished goods from the risk evaluation is reasonable and wholly consistent with EPA’s statement of managerial policy noted in the Draft Scope:

In complying with TSCA, EPA plans to efficiently use Agency resources, avoid duplicating efforts taken pursuant to other Agency programs, maximize scientific and analytical efforts, and meet the statutory deadline for completing risk evaluations.5

There have been five separate rulemakings to fully implement and clarify TSCA Title VI requirements (collectively, the “Formaldehyde Standards Regulations”). A substantial amount of agency resources has already been expended over a nine-year period. The regulatory system is working, and EPA appropriately acknowledged this by excluding composite wood panels.

However, there is a need for EPA to clarify that the exclusion in the Draft Scope covers composite wood panels (as defined in TSCA Title VI) and their downstream uses in

1FWIC members endorsing these comments are listed on the last page.
3 17 CCR § 93120-93120.12
construction, component parts and finished goods. Accordingly, we submit these comments to underscore our support for the exclusion, to urge clarification of the exclusion’s scope and to suggest certain modifications to recognize the exemptions embodied in TSCA Title VI and the existing Formaldehyde Standards Regulations. As such:

- EPA should retain the exclusion for panels, but remove the reference to “in panel form only” from the section on “Activities Excluded from the Scope of the Risk Evaluation.” The phrase introduces unnecessary ambiguity into the scoping that we believe EPA did not intend.

- Similarly, EPA should confirm its intention to exclude from the scope of the risk evaluation composite wood panels incorporated as component parts in finished goods. The downstream uses of panels are likewise subject to Title VI, reflect the predominant use of the panels, and are addressed by the regulations.

- Further, EPA should reconsider its approach and exclude from the scope of the risk evaluation other “composite,” “engineered,” or “pressed” wood products. Laminated products and hardboard are covered by TSCA Title VI and should therefore be excluded. Other engineered wood products should be excluded because TSCA Title VI expressly recognizes they are not subject to the formaldehyde limits because their emissions are insignificant.

II. The Exclusion of Composite Wood Panels is Appropriate, but Should be Clarified

A. Congress Granted EPA Authority to Exclude Certain Uses Regulated Under Title VI of TSCA

As EPA recognized in the Draft Scope, the Agency has authority to consider excluding certain uses during the risk evaluation process. More specifically, EPA has the authority to exclude from the Draft Scope those uses that the agency already regulates under TSCA. TSCA has long mandated that EPA “shall coordinate actions taken under this chapter with actions taken under other Federal laws administered in whole or in part by [EPA].” That authority was left intact when Congress amended TSCA in 2016. With this provision, Congress has instructed EPA to conduct risk evaluations in concert with its other authorities and granted the agency the ability to rely on those authorities instead of additional measures imposed through the risk evaluation process.

Formaldehyde is unique among the high-priority substances currently under review, because TSCA Title VI already regulates formaldehyde in composite wood products. The U.S. District

Draft Scope at 28.
15 U.S.C. § 2608(b) (emphasis added)
Court for the Northern District of California recognized this congressional effort in considering a challenge to a delay in implementing the Formaldehyde Standards Regulations. As such, EPA need not further regulate through the TSCA Title I risk evaluation process. TSCA Title VI and the Formaldehyde Standards Regulations already accomplish what follows the risk evaluation process—such as requirements on manufacturing, labeling and recordkeeping.

In its final scoping for formaldehyde, EPA should enumerate the substantial resources that have been invested in creating an effective framework for regulating formaldehyde in composite wood products through the Formaldehyde Standards Regulations, as well as the substantial benefits that are achieved from relying on those existing requirements to protect against potential risks.

B. The Existing Regulatory Framework Reflects More than a Decade of Review and Extensive Stakeholder Engagement

Industry trade groups have worked diligently over the years to reduce formaldehyde emissions and have worked cooperatively with various governmental bodies in addressing their concerns. In working through those concerns, stakeholders have recognized that while formaldehyde is used in many products, it also is found naturally in wood and other vegetative materials and as a natural constituent of outdoor ambient air. It is a natural metabolite in human cells and is found in our exhalation.

The collaboration in developing formaldehyde standards stretches back to the 1990s, including a Cooperative Research and Development Agreement entered into with EPA and its contractor Versar in the early 1990s to collect and study emissions in model homes. FWIC members have also worked closely with EPA over the years in refining and clarifying the Formaldehyde Standards Regulations.

In 2008, after extensive technical review, the California Air Resources Board (“CARB”) promulgated comprehensive new regulations that lowered allowable formaldehyde emissions and introduced the Airborne Toxics Control Measures (the “ATCM”), which includes a third-party certification system with elaborate requirements for supervision of plant quality control,

---

8 *Sierra Club v. Pruitt*, 293 F. Supp. 3d 1050, 1058 (N.D. Cal. 2018) (the court found “that Congress was foremost concerned with the expeditious implementation of emission standards designed to protect both the health of vulnerable populations affected by the use of composite wood products as well as domestic manufacturers who were, in large part, compelled to abide by California emissions levels and not able to compete fairly with imported goods that had not been subject to the same manufacturing standards.”).

9 Id.

10 See § 2605(a)(1)-(7).

11 § 2608(b).

12 See [https://archive.epa.gov/epapages/newsroom_archive/newsreleases/e6b07aa520b4e9a88525644d005c9bef.html](https://archive.epa.gov/epapages/newsroom_archive/newsreleases/e6b07aa520b4e9a88525644d005c9bef.html).
inspection, and independent testing to ensure compliance. Although those regulations only related to sales and manufacture in California, the American and Canadian panel industry made CARB-compliant panels for virtually all of the United States market. Shortly thereafter, the panel industry in partnership with the Sierra Club and several other industry, environmental and other NGO organizations sought the introduction and passage of bipartisan legislation to limit emissions on a nation-wide basis. As noted by the EPA:

The national emissions standards in the law are designed to reduce exposures to formaldehyde, avoid harmful health effects, and mirror the emission standards previously established by the California Air Resources Board (CARB) for products sold, offered for sale, supplied, used or manufactured for sale in California.14

This system was initially implemented in 2016 when EPA first promulgated the Formaldehyde Standards Regulations. That rule and its associated programs are in place and working effectively. With these considerations in mind, EPA noted the following exclusion in the Draft Scope:

Additionally, EPA has determined that three types of composite wood products in panel form only (hardwood plywood, particleboard, and medium density fiberboard [including thin-medium density fiberboard] currently regulated under the Formaldehyde Emission Standards for Composite Wood Products final rule (i.e., 40 CFR 770) will not be included in the scope of this evaluation because these products are manufactured domestically and/or imported only after meeting the Congressionally mandated emission standards, which are verified through an actively managed EPA third-party certification program. . . . EPA has determined that other non-TSCA Title VI regulated “composite,” “engineered,” or “pressed” wood products will be included in the scope of this evaluation.16

We commend this decision to exclude composite wood panels, but recommend clarification in several areas, as outlined below.

13 17 C.C.R. § 93120 et seq.
15 40 C.F.R. Part 770; see 81 Fed. Reg. 89674 (Dec. 12, 2016) (“The purpose of TSCA Title VI is to reduce formaldehyde emissions from composite wood products, which will reduce exposures to formaldehyde and result in benefits from avoided adverse health effects.”)
16 Draft Scope at 28.
C. **EPA’s Proposed Limitation of the Exclusion to Composite Wood Products “In Panel Form” Should be Removed Because it Introduces Ambiguity**

The meaning and intent of “composite wood products in panel form only” introduces substantial ambiguity. We believe that the exclusion should cover all TSCA Title VI regulated products. As such, EPA should delete “in panel form only” from the Draft Scope, because it confuses the nature and scope of Title VI regulations by arbitrarily disregarding that not only panels are subject to the regulations.

For one, the use of “panel form only” raises questions about how the Draft Scope intends to address a panel that is subsequently cut or machined, either at the panel manufacturer’s facility or by a downstream fabricator. The Formaldehyde Standards Regulations provide that even if cut into smaller pieces, it remains a panel, because the rules define “panel” as:

> [A] thin (usually less than two inches thick), flat, usually rectangular piece of particleboard medium-density fiberboard or hardwood plywood … Cutting a panel into smaller pieces, without additional fabrication, does not make the panel into a component part or finished good . . . .

Removing the phrase “in panel form” would fit with that established definition, remove unnecessary ambiguity, and avoid arbitrary conflicts with EPA’s existing regulations.

Likewise, the phrase “in panel form only” raises questions about whether the Draft Scope intends to cover the fabricator who cuts the panel into a component part. Some may question whether an MDF panel excluded under the Draft Scope would no longer be excluded if a fabricator cuts the panel into a cabinet door component. The product is identical as to the issue at hand—its formaldehyde emissions. Such a distinction would undermine the exclusion and run counter to the approach used to regulate these products for over 40 years. In light of these considerations, we urge that the phrase “in panel form only” be deleted.

---

17 40 C.F.R. § 770.3.

18 See, e.g., *West Deptford Energy, LLC v. FERC*, 766 F.3d 10, 20 (D.C. Cir. 2014) (“It is textbook administrative law that an agency must provide[] a reasoned explanation for departing from precedent or treating similar situations differently”) (internal quotation marks and citations omitted).

19 See, e.g., *West Deptford Energy, LLC v. FERC*, 766 F.3d 10, 12 (D.C. Cir. 2014) (vacating agency action because, *inter alia*, the agency ‘provided no reasoned explanation for how its decision comports with . . . prior agency practice’).
III. Both Panels and Their Use in Finished Goods Should Be Excluded

Throughout the Draft Scope there are general references to “furniture and furnishings not otherwise covered.” When coupled with the use of the phrase “in panel form only,” the Draft Scope could be read to imply that composite wood panels, when used in finished goods, are not excluded. We understand that that was not EPA’s intent. Indeed, it would be inconsistent to exclude from the scope a product in its panel form, but include it when that exact same panel is used in a downstream product.

If finished goods were not within the scope, then the exclusions would largely be illusory. At the same time, we recognize that certain elements in finished products are not composite wood products (such as finishes or coatings) and thus would not be part of the exclusion based on TSCA Title VI. As such, FWIC urges EPA to revise the Draft Scope and add language to clarify and confirm that all TSCA Title VI regulated products are excluded from the scope of the risk evaluation.

A. Finished Goods Are Properly Excluded Because They Are Regulated by TSCA Title VI

The exclusion in the Draft Scope is grounded on the premise that “these products are manufactured domestically and/or imported only after meeting the Congressionally mandated emission standards, which are verified through an actively managed EPA third-party certification program.” It is undeniable, however, that TSCA Title VI and its implementing regulations cover more than panels. The “Scope and Applicability” section of 40 C.F.R. Part 770 provides:

This part contains formaldehyde emission standards, testing and certification provisions and other requirements for the manufacture (including import), distribution, and sale of composite wood products, component parts that contain composite wood products, and finished goods that contain composite wood products.

Although the primary responsibility for emission control lies with the panel manufacturers, downstream products are regulated—their fabricators have responsibilities to procure and use
compliant panels in their component parts and finished goods. They have enumerated duties in Section 770.30 (responsibilities of “importers, fabricators, distributors and retailers”), Section 770.40(d) (recordkeeping) and Section 770.45(c) (labeling). As such, to give full effect to TSCA Title VI and the Formaldehyde Standards Regulations, the exclusion should reflect the breadth of those provisions.

B. Finished Goods Constitute a Major Use of Composite Wood Products

A review of the end uses of panel products underscores the appropriateness of excluding finished goods and construction applications. To include finished goods within the Draft Scope because these downstream products use composite wood panels would eviscerate the exclusion. Panels are rarely used as panels in their end uses. They are typically cut, machined, coated or finished, and incorporated into finished goods and construction. Without language confirming the exclusion extends to those applications, few panels would in fact be covered by the language.

The Composite Panel Association collects various data on the usage of particleboard and MDF from its Canadian and American members and publishes a Shipment and Downstream Market Report, the most recent of which contains information on 2018 shipments.25

Total shipments of particleboard in 2018 were 3.298 billion square feet; 2.247 billion square feet of MDF (both on a ¾” basis). The categories of usage and relative percentages of the market in 2018 for particleboard and MDF are:

<table>
<thead>
<tr>
<th>Category</th>
<th>Particleboard %</th>
<th>MDF %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flooring</td>
<td>0.4</td>
<td>21.0</td>
</tr>
<tr>
<td>Millwork &amp; Moulding</td>
<td>0.9</td>
<td>23.2</td>
</tr>
<tr>
<td>Shelving, Siding and Paneling</td>
<td>2.9</td>
<td>1.0</td>
</tr>
<tr>
<td>Office Furniture</td>
<td>6.5</td>
<td>1.4</td>
</tr>
<tr>
<td>Door Components</td>
<td>6.2</td>
<td>6.9</td>
</tr>
<tr>
<td>Retail/Store Fixtures</td>
<td>6.3</td>
<td>6.5</td>
</tr>
<tr>
<td>Household Furniture</td>
<td>13.6</td>
<td>10.9</td>
</tr>
<tr>
<td>Cabinets, Vanities &amp; Countertops</td>
<td>34.3</td>
<td>10.9</td>
</tr>
<tr>
<td>Other (not elsewhere categorized</td>
<td>31.6</td>
<td>18.1</td>
</tr>
</tbody>
</table>

Many of the shipments in the “Other” category may also end up in finished goods applications because they are largely sold through distributors. The end user is not known to the panel manufacturer.

From a review of these applications, one realizes that the use of panels, per se, is very limited. For EPA to provide any meaningful exclusion of composite wood panels, the Draft Scope must include usages in downstream applications.

25 The report captures 95.2% of particleboard volume and 99.4% of MDF volume.
C. Regulation of Finished Goods and Component Parts Has Historically Been Through Limitations of Emissions from Their Constituent Panels

Further, EPA should confirm that the exclusion extends to finished goods and component parts that use compliant panels to conform to historic agency practice—and to square with simple common sense. Through the years, some stakeholders have asked why finished goods are not regulated directly through their own assigned emission limitations, as those products are used in the home or office environment. Such an approach would capture the emission characteristics of the finished piece including the effect of any barrier added to the panel, such as a thermally fused laminate, high density laminate, vinyl, liquid finish or other treatments.

The simple answer is that there is no normalized way to accommodate the infinite variety of furniture and cabinet offerings in a rational and enforceable standard. There are literally millions of different stock-keeping units (SKUs) offered by these industries—different sizes, different construction materials and different interactions of emissions between pieces in a room. One furniture piece may contain many different components—hardwood plywood, particleboard and MDF. Furniture may also include pieces of solid wood and engineered wood products exempt from EPA regulation. Sizes, and thus loading, of composite wood components may vary substantially across SKUs. There are infinite permutations.

Thus, even though it would have been favorable for panel manufacturers to receive the substantial credit for emission reductions that in fact do occur due to barriers added to the panels, direct regulation of emissions from furniture or cabinet units was wisely deemed unworkable. The only alternative was to establish standardized restrictions on the underlying panels. The regulations included not only emission limitations, but also methods and tests to evaluate compliance. A variety of approved compliance tests (E1333 and D6007) and quality control tests26 each prescribe test parameters including loading, conditioning, temperature, relative humidity and testing equipment so that emission performance can be determined on a normalized basis.

Such testing and enforcement would be simply impossible across the full range of offerings of finished goods.27 For this reason, CARB, CPSC, HUD and EPA have all approached potential regulation of home and office formaldehyde emissions through control of panel emissions and subsequent requirements on finished goods to be made from these compliant panels. Finished goods are regulated, but in a manner that efficiently limits emissions at the initial source. We understand that EPA recognizes this historic approach by excluding composite wood products used in finished products and construction applications under its Draft

---

26 See 40 C.F.R. § 770.20(b)(1) for allowable quality control methods.

27 One FWIC member association, the Business and Institutional Furniture Manufacturers Association, has established testing regimens for various seating and office furniture units in ANSI/BIFMA Standard X7.1. However, these units are more homogeneous in loading and thus more susceptible to normalized evaluation.
Scope. We urge the agency to confirm this established practice by explicitly excluding those products and applications in the final scope.

IV. Other “Composite,” “Engineered,” or “Pressed” Wood Products Should Also Be Excluded from the Draft Scope

EPA concluded its description of the exclusion with the following sentence:

EPA has determined that other non-TSCA Title VI regulated “composite,” “engineered,” or “pressed” wood products will be included in the scope of this evaluation.28

We urge EPA to reconsider this approach, which misses the fact that TSCA Title VI covers other products. Indeed, the statement would include in the risk evaluation a variety of products, each with its own characteristics, considerations and uses; but as a general matter many of these products are regulated under TSCA Title VI, and others were consciously exempted because of their demonstrated lower or insignificant emissions. Exempted products with lower emissions than the regulated products a fortiori should also be exempt from the evaluation.

A. Laminated Products

By regulation, EPA defines “Laminated products” as

[A] product in which a wood or woody grass veneer is affixed to a particleboard core or platform, a medium-density fiberboard core or platform, or a veneer core or platform . . . .29

These products are regulated by TSCA Title VI in several different ways. Most laminated products are a subset of hardwood plywood with two distinguishing features: (1) they are made by fabricators, and (2) they are incorporated into finished goods or component parts.30 This unusual provision was added to TSCA Title VI and the Formaldehyde Standards Regulations to accommodate furniture and cabinet makers who routinely laminate veneers onto substrates in their facilities as part of the integrated process of creating finished goods. This step in the ongoing manufacturing process presented unique burdens which were deemed to justify somewhat different treatment or delayed implementation compared to commercial hardwood plywood.

28 Draft Scope at 28 (emphasis added).

29 40 C.F.R. § 770.3. The definition is essentially the same as that of “hardwood plywood,” which is “a hardwood or decorative panel that is intended for interior use and composed of . . . an assembly of layers or plies of veneer, joined by an adhesive with a lumber core, a particleboard core, a particleboard core, a medium density core, a hardboard core, a veneer core, or any other special back material.” Id.

30 “[H]ardwood plywood includes laminated products except as provided at § 770.4.” 40 C.F.R. §§ 770.3.
Nonetheless, these products are regulated by TSCA Title VI. First, manufacturers of laminated products are “fabricators” who must comply with all the requirements of 40 C.F.R. sections 770.30, 770.40(d) and 770.45(c). This notably includes procuring compliant cores for use in their laminated products, recordkeeping and labeling.

The Formaldehyde Standards Regulations also bifurcate laminated products between those that use no added formaldehyde (NAF) or phenol-formaldehyde resins to attach the veneers onto the substrate and those that use other formaldehyde-based resins. With respect to the latter group:

After March 19, 2024, producers of laminated products must comply with the requirements of this part that are applicable to hardwood plywood panel producers (in addition to the requirements of this part that are applicable to fabricators) . . . .31

The requirements referenced are testing and third-party certification. This quotation does not, however, indicate that the products are unregulated. On the contrary, it is an effective date provision. The additional hardwood plywood requirements for certification and testing will be in effect in early 2024, around the time that the evaluation of formaldehyde is due.

With respect to products that use NAF or phenol-formaldehyde resins to attach the veneer to a laminated product, the requirements are somewhat different.32 Manufacturers of these products are also currently deemed “fabricators” with all the attendant responsibilities that go with that designation, including use of compliant substrates. However, pursuant to Section 770.4, they will not be required to have third-party certification of their laminated products, reflecting the lower emissions of the NAF and phenol formaldehyde resins used in the glue line.

B. Hardboard

Hardboard is a high-density fiber panel product that has historically been excluded from formaldehyde regulation because of its extremely low emission potential. EPA subsequently modified this approach slightly, as described below, by introducing a rebuttable presumption that hardboard with emissions in excess of 0.06 ppm was to be regulated as thin MDF. EPA should recognize this in the Draft Scope and exclude hardboard from the risk evaluation.

Hardboard can be manufactured through a variety of processes: (1) a wet process in which the primary bond is achieved through the lignin of the furnish with some additives, (2) a dry process, or (3) a wet-dry process. In some instances in the past, there has been confusion in the market between the dry-process hardboard product and thin MDF. In order to clarify this

31 40 C.F.R. § 770.2(e)(2).
32 The Formaldehyde Standards Regulations allow parties to petition to have other resin types included in this exempt category. 40 C.F.R. § 770.4(b).
situation, industry suggested two additions which EPA adopted. First, dry process hardboard was defined as one “[using] a phenolic resin, or a resin system in which there is no formaldehyde as part of the resin cross-linking structure . . . .” 33 Second, a provision was added that “[t]here is a rebuttable presumption that products emitting more than 0.06 ppm formaldehyde . . . are not hardboard.” 34

In addition, much of the hardboard category is made up of exterior products referred to as “engineered wood siding” and “engineered wood trim” that are covered, respectively, by ANSI Standards A135.6 and A135.7. Outdoor exposures from these products are necessarily of lower concern, because they will diffuse in a way that, for instance, indoor occupation exposures may not. 35

We believe that these factors justify hardboard being excluded, because EPA has already addressed it through the Formaldehyde Standards Regulations.

C. Other “Engineered” Wood Products

We assume that the references in the Draft Scope to other “composite,” “engineered,” or “pressed” wood products relate to construction materials such as oriented strand board (“OSB”), structural (softwood) plywood, composite I-joists, glued laminated timber (“glulam”), structural composite lumber and other materials. TSCA Title VI acknowledges the different nature of these products, as the statute expressly provides they are not subject to formaldehyde emissions limits. 36 This includes products excluded from the definition of “hardwood plywood,” such as military-specified plywood and curved plywood, as well as structural plywood products specified in the PS1 standards for Structural Plywood and structural panels as specified in PS 2 standard for Wood-Based Structural-Use Panels. 37 These products were specifically exempted from the California ATCM after extensive review of technical information during the regulatory development. The products were also exempted from TSCA Title VI.

As noted above, these products are primarily under the ambit of APA – The Engineered Wood Association, which will be submitting separate comments on the properties of these materials. However, we note that excluding these products is appropriate. One common feature of these products is the requirement for use of moisture-resistant adhesive systems because of wide-scale usage in exposed construction environments. This has led to usage of resin binders other than conventional urea-formaldehyde adhesives. Phenol formaldehyde and polymeric

33 40 C.F.R. § 770.3.
34 Id.
35 These “engineered wood products” should be distinguished from other construction products such as oriented strand board, softwood plywood, I-joists and others under the jurisdiction of APA-The Engineered Wood Association.
36 15 U.S.C. § 2697(c) (“Exemptions. The formaldehyde emission standard … shall not apply to” listed products).
37 15 U.S.C. § 2697(a)(3)(B) and (c); see also 40 C.F.R. § 770.3.
diphenyl methane diisocyanate resins with minimal formaldehyde emissions are the most common adhesive systems used in these products, and EPA has already recognized the safety of some of these materials:

[M]any of the products excluded from the CARB ATCM, and later from TSCA title VI, such as hardboard, oriented strand board, structural plywood, structural panels, and structural composite lumber, were so excluded because CARB determined that they were already being made with resins with limited formaldehyde emissions potential. . . . EPA agrees with CARB's determination that composite wood products made with phenol-formaldehyde resins are much less likely to emit formaldehyde than products made with urea-formaldehyde resins. 38

This supports the conclusion that these products should be excluded from the risk evaluation.

The historic bases for exempting these materials from regulation is sound. Hence, EPA should carry over the exemptions for these materials in TSCA Title VI and the Formaldehyde Standard Regulations into the current Draft Scope.

D. Solid Wood Should Not Be Considered

Throughout the Draft Scope there are references to the contributions of “wood and engineered wood products.” 39 It is ambiguous as to whether the first use of “wood” stands alone, or it is also meant to modify “products.” In either event FWIC believes that solid wood, in any form, should not be included within the scope of the risk evaluation.

It has long been recognized that wood, as it comes from a tree, contains no added formaldehyde, but can emit some small amounts of naturally occurring formaldehyde. 40 Although emissions are accentuated when the wood is subjected to very high temperatures, such as during pressing of the furnish in composite wood panel manufacturing or in artificial laboratory conditions, they can be measured under normal conditions of use. As noted by Salem et al.:

Formaldehyde is also detectable even if wood has never been heated as well as under more or less ambient conditions. The presence of formaldehyde in the emissions from wood that does not contain adhesive resin has been explained by

---

38 81 Fed. Reg. at 89682.
39 See, e.g., Formaldehyde Conceptual Model for Consumer Activities and Uses: Consumer Exposures and Hazards at 39 (Table 2.8) (emphasis added).
40 See, e.g., Mohamed Salem and Martin Bohm, Formaldehyde from Wood, 8 BioResources 4775 (2013); Martin Weigl et al., Wood-borne formaldehyde varying with species, wood grade, and cambial age, 59 Forest Products Journal 88 (2009).
thermal degradation of polysaccharides in the wood. The emission levels of formaldehyde depend on factors such as wood species, moisture content, outside temperature, and time of storage.\(^{41}\)

The authors also included test results from a 1996 study by Meyer and Boehm, which analyzed a variety of species with different characteristics using various test methodologies:

<table>
<thead>
<tr>
<th>Wood</th>
<th>Moisture content (%)</th>
<th>Testing period (hr.)</th>
<th>Gas analysis concentration (ppb)</th>
<th>Perforator value ($\mu g/m^2 h$)</th>
<th>Flask value $\mu g/100$ g dry board</th>
<th>3 hr.</th>
<th>24 hr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beach</td>
<td>53</td>
<td>360</td>
<td>2</td>
<td>114</td>
<td>359</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>336</td>
<td>3</td>
<td>34</td>
<td>155</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Douglas-fir</td>
<td>117</td>
<td>384</td>
<td>4</td>
<td>397</td>
<td>517</td>
<td>4</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>240</td>
<td>5</td>
<td>82</td>
<td>207</td>
<td>6</td>
<td>75</td>
</tr>
<tr>
<td>Oak</td>
<td>63</td>
<td>360</td>
<td>9</td>
<td>431</td>
<td>597</td>
<td>17</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>360</td>
<td>4</td>
<td>51</td>
<td>188</td>
<td>6</td>
<td>44</td>
</tr>
<tr>
<td>Spruce</td>
<td>42</td>
<td>384</td>
<td>4</td>
<td>133</td>
<td>334</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>336</td>
<td>4</td>
<td>71</td>
<td>277</td>
<td>19</td>
<td>132</td>
</tr>
<tr>
<td>Pine</td>
<td>134</td>
<td>240</td>
<td>5</td>
<td>195</td>
<td>217</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>360</td>
<td>3</td>
<td>86</td>
<td>233</td>
<td>16</td>
<td>80</td>
</tr>
</tbody>
</table>

Note that chamber values are exceptionally low, ranging from two to nine ppb. These different species reflected different moisture conditions, chemical make-up and porosity. The test results do not equate to ambient home levels. Additionally, these trace amounts would not be additive to the emissions from other sources in the living space but would be subject to the “back pressure” of those other sources.

The cited laboratory study, and others,\(^{42}\) were all conducted on “raw” wood prepared and conditioned for the testing. This does not reflect how wood is used in consumer settings. Interior applications of wood and wood products, such as furniture, mantels and beams are typically finished with some coating to inhibit degradation during use. Most of these finishes and coatings present effective barriers to emission. Construction applications such as wall framing or ceiling joists are typically behind gypsum wallboard or other sheathing products, which also inhibit direct transmission into the living space.

Moreover, to the extent that there are trace emissions from solid wood into living spaces, they are captured in both the modeling that EPA has conducted\(^{43}\) and in actual measurements of

\(^{41}\) Salem, supra at 4775.

\(^{42}\) E.g., Weigl, supra.

\(^{43}\) “Inputs to the FIAM-pwp model include the formaldehyde background concentration (intended to reflect the contribution of formaldehyde outdoors as well as indoor sources other than PWP) . . . .” EPA, Formaldehyde from Composite Wood Products; Exposure Assessment for TSCA Title VI at 3 (Mar. 2016).
home ambient levels. The difficulty of analyzing the *de minimis* contribution from wood would be daunting. What species would be evaluated? What moisture content? What assumptions would have to be made about the finishes and coatings and their restriction of emissions? The permutations and unknowns of this task would be overwhelming.

A number of comments submitted by industry associations over the years have pointed out the emissions of formaldehyde from wood, but this was done not to show the significance of those emissions, but rather to show that the many modern panel products are consistent with the emission levels of natural wood.

We understand that there have been some discussions as to the treatment of “white wood” in connection with the Draft Scope. Although there are numerous definitions of this term, we believe in this context it refers to the unfinished, laid-up panels made by some fabricators as part of furniture or cabinet manufacturing process. These are “laminated panels” in the parlance of the Formaldehyde Standards Regulations and should be treated as such.

FWIC respectfully submits that whatever emissions emanate from solid wood or unfinished solid wood products are already captured by existing ambient air studies and exposure models through background formaldehyde assumptions. These numbers account for unquantifiable contributions to the living environment from such influences as outside ambient formaldehyde levels, personal body emanations, cooking fumes, and other *de minimis* sources. Background assumptions should be used by EPA, rather than taking on the quixotic task of characterizing solid wood emissions.

E. **The Risk Evaluation Does Not Apply to Non-Formaldehyde Emitting Materials**

Applied to the Excluded Composite Wood Panels

It is axiomatic that the scope of this risk evaluation only should cover formaldehyde-emitting materials. If a finished good does not contain any formaldehyde-emitting coverings, coatings or other materials other than the exempt composite wood panels or solid wood, it should necessarily not be subject to the risk evaluation.

A perfect example of this situation is thermally fused panels. This value-added product is made by pressing an impregnated paper under heat and pressure onto a particleboard or MDF panel. The pressed overlay does not emit formaldehyde. A wide variety of foils, papers, high density synthetic laminates and other covering materials are used in different applications to

---

44 The term is often used to describe unfinished solid wood furniture. Such products should not be within the scope of the evaluation, as described above. The term is also sometimes used in cabinetry to describe a secondary, utility lumber, used for unseen things like toe kick framing, cleats, brackets, webbing, etc. The solid wood discussion would equally apply to this usage.
provide different aesthetic effects. Non-formaldehyde-emitting coatings and finishes would similarly fall into this analysis.

A generic statement should be added to the Draft Scope to the effect that materials that do not add formaldehyde emissions when used with excluded composite wood panels in finished goods are not subject to the evaluation. In that instance, only material emitting formaldehyde would be reviewed under the risk analysis.

V. Inconsistencies in the Draft Scope Should be Eliminated

There are inconsistencies in the Draft Scope that make the exclusion of products addressed by TSCA Title VI unclear. EPA should address these inconsistencies in the final scoping.

A. Reference to Decay from Pre- and Post-TSCA Title VI Panels Is Inappropriate

The Draft Scope contains a statement regarding consideration of emissions from panels covered by the Formaldehyde Standards Regulations that directly contradicts the exclusion of those panels. In discussing various aspects of “co-location” and “co-residence,” the Draft Scope explicitly states that variable emissions from TSCA-regulated panels will be reviewed:

General population exposure for co-located and co-residence scenarios resulting from offgassing may need to consider variable emission rates due to the promulgation of regulations under TSCA which limits formaldehyde content in certain composite wood products (as defined by the regulation). The regulation was promulgated in 2016, so consideration of offgassing products before and after this date may need to be evaluated separately since offgassing can be ongoing for more than 4 years. Screening level analysis may be applicable in this situation to identify if off-gassing after 4 years can lead to acute or chronic exposure levels or concerns. Further consideration of this approach will be reviewed throughout the risk evaluation process.

The “certain composite wood products (as defined by the regulation)” are the three products specifically excluded from the current evaluation—hardwood plywood, particleboard and medium-density fiberboard (including thin medium density fiberboard). There is no reason to evaluate the decline in emissions (the so-called “decay” phenomenon) from these excluded products, whenever manufactured.

45 Many of these coverings actually provide effective barriers to emissions, thus lowering even further the low, regulated formaldehyde levels in the excluded substrates. See, e.g., CPA Technical Bulletin, VOC Emission Barrier Effects of Laminates, Overlays and Coatings for Particleboard, Medium Density Fiberboard (MDF) and Hardboard (2003), https://www.compositepanel.org/userfiles/filemanager/82/.

46 Draft Scope at 57 (emphasis added).

47 The statement is also factually inaccurate—the 2016 date cited in the Draft Scope has no relevance. American, Canadian and many imported composite wood panels complied with emission limits of the California ATCM
B. It Should be Made Clear That the Composite Wood Panel Exclusion Applies Throughout the Document

Section 2.2.4 of the Draft Scope (“Overview of Conditions of Use and Lifecycle Diagram”) provides textual and diagrammatic guidance on how EPA will analyze the conditions of use. It appropriately notes that “[t]he activities that EPA determined are out of scope [TSCA Title VI products and others] are not included in the life cycle diagram [Figure 2.7].”48 FWIC strongly urges that this concept be made clearly applicable to other sections of the Draft Scope.

Figure 2.7 provides flow-chart guidance as to how the life cycle of the products will be analyzed by EPA for the uses of the chemical (from which the excluded products are not considered) represented by the blue boxes that flow upwards into the “Industrial, Commercial and Consumer Uses.” These separate uses are further described in the schematics of Industrial & Commercial Activities/Uses in Table 2.8 and of Consumer Activities/Uses in Table 2.9. These latter tables are essentially extensions and elaboration of the general description in Table 2.7. Excluded products are not within the scope of the analysis, and we urge that references to the exclusion on page 28 make this clear not only as to Table 2.7, but also as to the other tables and Appendices.

***

We appreciate the opportunity to comment on the Draft Scope and would be happy to supply any clarifications or additional information regarding our joint comments. Individual signers many also wish to highlight issues of particular concern to their industries in separate comments.

FEDERAL WOOD INDUSTRIES COALITION

ACC Formaldehyde TSCA Risk Evaluation Consortium
American Forest & Paper Association
American Home Furnishings Alliance
American Wood Council
APA – The Engineered Wood Association
Association of Woodworking & Furnishings Suppliers
Business and Institutional Furniture Manufacturers Association
Composite Panel Association
Decorative Hardwoods Association
International Wood Products Association
Kitchen Cabinet Manufacturers Association
National Wood Flooring Association

beginning in 2009 (Phase 1) and 2010 (Phase 2). The Formaldehyde Standards Regulations’ emission limitations, which are identical to CARB Phase 2, became technically effective on June 1, 2018, pursuant to an order in Sierra Club v. Pruitt, 293 F.Supp.3d 1050 (N.D. Cal. 2018). See also EPA, Court Order; Compliance Date; Formaldehyde Emission Standards for Composite Wood Products, 83 Fed. Reg. 14375 (Apr. 4, 2018).

48 Draft Scope at 28.