



Center for the
Polyurethanes Industry



Diisocyanates
Panel

March 3, 2022

The Honorable Shane E. Pendergrass
Chair
Health and Government Relations Committee

The Honorable Joseline A. Pena-Melnyk
Vice-Chair
Health and Government Relations Committee

RE: Favorable with Amendment - Maryland House Bill Number 1381: An Act Concerning Environment – Fire-Fighting Training – Oriented Strand Board – Prohibition

Dear Delegate Pendergrass and Delegate Pena-Melnyk:

The American Chemistry Council's Center for the Polyurethanes Industry and Diisocyanates Panel (collectively hereafter referred to as "ACC") support efforts to protect firefighters from harmful chemicals and combustion by-products from chemicals or the products of chemistry. First responders are critical to the protection of lives, homes, and buildings. Firefighters are often working and training in extreme conditions, therefore special consideration should be given to their potential exposures to protect their health. A reasonable safety control is to ensure the products used in live-fire training exercises do not unnecessarily expose firefighters to harmful combustion by-products.

ACC opposes the specific reference to polymethylene diphenyl diisocyanate (pMDI) in HB 1381. ACC anticipates that this reference is related to a NIOSH study on oriented strand board (OSB) combustion by-products, not a study on sources of emissions. ACC appreciates the opportunity to provide our comments to the Health and Government Relations Committee.

- 1. The NIOSH study was designed to measure combustion byproducts from two types of OSB ("alpha" and "bravo"), simulated smoke, and pallet and straw fuel packages. The study did not investigate sources of potential combustion byproducts.**

We understand that a National Institute for Occupational Safety and Health (NIOSH) study on firefighter exposure to PAHs and Benzene during live training exercise served as the basis for a similar bill in Virginia – HB 2029 (2021). Both bills proposed a ban on the use of OSB coating pMDI binders during live training events for firefighters.¹

The NIOSH study concluded that live fire training exercises may expose firefighters and instructors to combustion byproducts containing hazardous chemicals. The exposure to combustion byproducts is dependent on the duration and frequency of exposure and the type of fuel package. The study does not conclude that pMDI binders cause additional emissions of hazardous emissions (i.e. PAHs or Benzene) that were associated with the combustion byproducts of one of the two OSB boards used in the study - "bravo OSB."

Bravo OSB is not representative of typical OSB. Bravo OSB is a specialty OSB that is not certified by an inspection agency for use in residential construction. The OSB board – "alpha OSB" is more representative of the OSB market. Bravo OSB is a 1/4" non-structural product not intended for building and construction, while alpha OSB is 7/16" product is certified by an agency as a structural product for

¹ Fent KW, Toennis C, Sammons D, Robertson S, Bertke S, Calafat AM, Pleil JD, Geer Wallace MA, Kerber S, Smith DL, Horn GP. [Firefighters' and instructors' absorption of PAHs and benzene during training exercises.](#)

use in residential wall sheathing. Alpha OSB had emissions that were very similar to the other fuel packages.

The increased emissions of PAHs and Benzene associated with the combustion byproducts from Bravo OSB cannot be attributed to pMDI without additional research. OSB products contain multiple components and potential hazardous combustion byproducts could be attributed to other components or manufacturing processes. As we understand it, UL's Fire Safety Research Institute is planning additional research in this area.

2. pMDI is not present in OSB.

pMDI binders are a raw material input to the OSB manufacturing process. During OSB manufacture, pMDI binders react to form polyurethane and polyurea polymers. pMDI is not present in OSB as a discrete ingredient.

OSB products contain multiple components, including binders, wax, and wood chips or strands. Generally, OSB products are over 95% wood. OSB contains an inner core and an outer layer. pMDI is often used as the binder for the inner core. The outer layer is often bound with phenolic or pMDI binders. Each component in OSB may produce combustion by-products.

3. Smoke and byproducts from fires are toxic regardless of the source of those fires and what is being burned.

pMDI binders cure to form polyurethane and polyurea polymers. Polyurethane and polyurea polymers do not create unique toxicity risks during fires. While a range of airborne chemicals may be emitted during fire events involving polyurethane products, all combustible materials produce toxic smoke when burned, including wood. In terms of hazard, carbon monoxide (CO) is typically the most abundant toxicant in fires under almost all combustion conditions.²

4. This legislative action is unprecedented and does not align with similar policy in Virginia.

Maryland would be the first state to enact legislation banning the use of OSB containing pMDI binders during live training events for firefighters. Based on the information outlined regarding the NOISH study, VA HB 2029 was amended and the reference to pMDI was removed. No other state has passed legislation to ban the use of OSB during live fire training exercises.

Accordingly, ACC recommends the following amendment to address our concerns:

(A) IN THIS SECTION, "ORIENTED STRAND BOARD" MEANS A WOOD PANEL THAT IS MANUFACTURED USING WOOD STRANDS AND ~~BINDER ADHESIVES CONTAINING POLYMETHYLENE-DIPHENYL-DIISOCYANATE.~~

(B) A PERSON MAY NOT SET ON FIRE OR BURN ORIENTED STRAND BOARD 20 FOR FIRE-FIGHTING TRAINING PURPOSES.

(C) A PERSON WHO VIOLATES THIS SECTION IS SUBJECT TO:

(1) FOR A FIRST VIOLATION, A CIVIL PENALTY NOT EXCEEDING \$500;

² [Question and Answer: Smoke Toxicity](#)

(2) FOR A SECOND OR SUBSEQUENT VIOLATION, A CIVIL PENALTY NOT EXCEEDING \$1,000.

(3) NO PROVISION OF THIS SECTION SHALL RESTRICT THE MANUFACTURE, SALE, USE, OR DISTRIBUTION OF PRODUCTS OR MATERIALS THAT CONTAIN ORIENTED STRAND BOARD FOR THE PURPOSES OUTSIDE OF FIRE-FIGHTER TRAINING ACTIVITIES.

These amendments align the Maryland and Virginia bills and ensure that the legislation is aligned with the NIOSH study on OSB emissions.

Another consideration could be developing a list of approved materials for training firefighters. It is difficult to ban all products that may expose firefighters to hazardous emissions. For example, there are many other products that are not on the ban list that might be equally or more hazardous to firefighters than the products listed. It might be more productive and improve firefighter safety if the focus is on the development of a list of suitable and safe materials for the training.

If you have any questions or need additional information, please contact me at Stephen_wieroniey@americanchemistry.com, or (202) 249-6617.

Sincerely,



Stephen Wieroniey
Director, Center for the Polyurethanes Industry



Sahar Osman-Sypher
Senior Director, Diisocyanates Panel

CC: Delegate Pat Young