TASK FORCE ON CADMIUM IN CHILDREN'S JEWELRY

Meeting Minutes
Wednesday, July 31, 2014
2:00 PM in Room 2D of the LOB

I. CONVENE MEETING

a. The meeting was convened at 2:15 PM

II. REMARKS BY THE CHAIRS

a. Rep. Baram outlined the timeline for the meeting and the presentations.

III. PRESENTATIONS BY:

a. Alan Kaufman, Senior Vice President of the Toy Industry Association provided his background and involvement in developing the ASTM (American Society for Testing & Materials) standards. He also provided information regarding the thought process of developing these standards.

b. Rep. Urban asked him about testing the products when damaged. Alan Kaufman responded that he felt the bioavailability of cadmium would not be substantially different unless there is sub-straight or coating. Rep. Urban asked about the soluble testing timelines. Alan Kaufman stated that average residence time in the body is 6 hours, but some items could stay in the system for several days. He added that their standard indicated anything beyond 24 hours in the stomach would not cause any additional damage or exposure. He added that the 300 parts-per-million (PPM) was put in place to make sure items weren't being tested that couldn't make enough cadmium bioavailable to be a potential health issue. Rep. Urban asked Alan Kaufman about how much the industry could reduce the use of cadmium in these pieces of jewelry before a product fails. Alan Kaufman stated he would have to defer his response to the jewelry industry, as he does not directly work with jewelry manufacturer. Rep. Urban's asked Alan Kaufman about European standards. Alan Kaufman responded that he believed the standard to be 75 parts-per-million (PPM) soluble.

c. Rep. Baram asked Alan Kaufman about the conversion of soluble and total content standards. Alan Kaufman responded that variables in each testing model make it difficult to convert. He detailed the key variables being the matrix the product is contained in affecting the rate at which the acids in the stomach can attack the product and the compound of the metal with other components that have different solubility levels interacting. Rep. Baram inquired as to whether there is a list of children who have ingested the material and the reactions they've had. Alan Kaufman responded that there is data on what would pose an acute toxic dose, but most of the data is on occupational exposure. Rep. Baram asked about the jewelry association's task force that studied cadmium, its composition, and its goals, as well as details regarding the U.S. product safety commission endorsing/adopting this standard. Alan Kaufman responded that the committee was diverse in both industry and consumer advocates, as well as members of federal and international organizations, but voting members had to pay an annual fee. Rep. Baram inquired as to the vote that recommended 300 PPM. Alan Kaufman responded that it would be best to check with ASTM, but believed it was nearly unanimous, with dissenting votes arguing for total content standards. Rep. Baram asked about a toy standard vs. jewelry standard. Alan Kaufman responded the toy standard was started in the 1970s and is aligned with the European Union standards. Alan Kaufman added the toy standard met the EU standard to keep costs down while ensuring child safety.

d. Dr. Gary Ginsberg asked if Alan Kaufman had read the report done by Dr. Weidenhamer. Alan Kaufman responded that he read it when it was initially published. Dr. Ginsberg asked about the 24-hour period of testing being adequate and the results of the tests done by Dr. Weidenhamer, which followed ASTM standards. Alan Kaufman responded that the high variability would likely be the result of plating over a substrate which contained a large amount of cadmium. Dr. Ginsburg asked if Alan Kaufman thought the plating would be that different between products, as well as how reliable the 24-hour test might be if it is random and off a retail shelf. Alan Kaufman responded that the 24-hour test was the result of empirical data developed by the CPSC. He added that since Dr. Weidenhamer's article was published a widespread adoption had been undertaken, which would likely produce different results today. Dr. Ginsberg asked what has changed since 2011. Alan Kaufman responded the standard is being adopted more strictly by industry. Dr. Ginsberg asked if the state adopted ASTM and found a product with 1,000 PPM using an X-Ray Fluorescence (XRF) test, what you would do after that. Alan Kaufman responded you would apply the 24-hour test to the product. Dr. Ginsberg asked if that would be there would need to have a lab contracted out and paid for by the state to undertake this test. Alan Kaufman responded that the state would, but if the state were to adopt a total content and utilize only the XRF, the tests could get higher rates of false

positives. Dr. Ginsberg responded that the wet chemistry wouldn't mean an extraction test, but instead undertaking a solubility test a number of times at the expense of the state. Alan Kaufman responded that you would have to verify the XRF by doing a full digestion in concentrated acid, which would be a comparable cost. Alan Kaufman stated if there were no total content test, he would not rely on the results of XRF to determine whether something was passing or failing.

e. Brent Cleaveland asked for further clarification about paint and surface coating cadmium content standards. Alan Kaufman responded that it is the same as what was used in the toy standard.

f. Rep. Louis Esposito asked about any difference in stomach acid between children and adults. Alan Kaufman responded that he is not aware of any substantial differences between the types of stomach acid. Rep. Esposito asked if there was cadmium in the toys that were tested. Alan Kaufman responded that at one time there were cadmium pigments in plastics, but the industry has moved away from cadmium. Rep. Esposito asked if any toys that have metal in them or metal parts. Alan Kaufman responded toys would have a form of steel, nickel, or die cast as zinc and aluminum alloy. Rep. Esposito asked if the test takes into account the flushing of the digestive system. Alan Kaufman responded that it could, but believes it would reduce the absorption rate, as it would dilute the stomach acid. The test they engage in would be the worst case scenario of an empty stomach, with the first hour agitating the item. Alan Kaufman stated in the 24-hour test it assumes that items have moved system with an average residence time of six hours.

g. Sen. Witkos asked about the effect a combination of chemicals would have on cadmium and testing products. Alan Kaufman responded that there can be some interference, although cadmium is not terribly subject to it. He further explained tests that can be done between elements and wet chemistry. Sen. Witkos asked when Alan Kaufman recommend those test should be done. Alan Kaufman responded when it breaks the 300 PPM with an XRF test that you would go for a soluble test.

h. Rep. Urban introduced Dr. Jeffrey Weidenhamer. Dr. Weidenhamer provided an overview of his work testing children's products, and then went into discussion about his more recent research regarding cadmium and the ASTM standards.

i. Rep. Urban asked about the necessity of cadmium in jewelry products. Dr. Weidenhamer stated he did not feel it was essential, but depends on the source material for the jewelry and whether it is in solders. Rep. Urban asked about alternatives to cadmium. Dr. Weidenhamer noted zinc and copper, but noted the use of cadmium makes products shinier and more malleable.

j. Rep. Baram asked about the importance of content levels in a product, assuming the likelihood any product with wear and tear would have higher migration rates for any chemicals in the product. Dr. Weidenhamer responded that if standards test for levels of exposure to items like cadmium, but do not test products after wear and tear, then the content level is important. Rep. Baram asked for further clarification whether leeching levels occur at a similar rate if two products with different levels of cadmium are given identical levels of damage. Dr. Weidenhamer replied that he has seen that the content level does matter, particularly for cadmium. He went on to explain how the blend of different metals or alloys can also affect the leeching levels, and that having a threshold of cadmium before it is blended with other alloys is needed to protect against health issues in children. Rep. Baram asked for Dr. Weidenhamer's opinion on the ASTM's decision on the industry standard. Dr. Weidenhamer responded that while he could not make a direct opinion on which number is ideal, the inherent issue is that the ASTM does not factor products that experience wear and tear over time, as well as proof the industry/ASTM standards are being adopted in the marketplace.

k. Rep. Urban asked for clarification on the purpose of his study, the lack of products with wear/tear, and the duration of jewelry in a child's digestive system. Dr. Weidenhamer responded that the wear and tear is a very clear concern for children's health.

l. Dr. Ginsberg asked for clarification regarding the ASTM standard and the impact of his study on risk. Dr. Weidenhamer responded that the jewelry he studied would have had the ability to pass the ASTM standard but still have substantially higher levels after being damaged. Dr. Ginsberg asked why there was so much variability in the data. Dr. Weidenhamer responded the biggest factor towards the variability is the content of other alloy metals such as zinc in the piece of jewelry along with cadmium. He added that it becomes difficult on a regulation basis to set a standard on how much cadmium can be in a product based on other alloys blended in with it to reduce overall health risks. Dr. Ginsberg asked Dr. Weidenhamer how many times we would have to run the ASTM test a product to be confident in a pass/fail result. Dr. Weidenhamer responded that it depends on the

conditions of the test. He added that he tested 6 of each product to find how much variability there was and he felt items would need to be tested multiple times both for abrasions/wear and tear and/or those without.

m. Anne Hulick inquired of Dr. Weidenhamer whether the level of damage he made to the jewelry could be done by a child. Dr. Weidenhamer responded that his testing did provide a worst-case scenario of damage inflicted upon a piece of jewelry; however the damage they made is possible for a child to inflict. She then asked him for clarification on the definition of bioaccumulative as a buildup of a chemical overtime in the body. Dr. Weidenhamer confirmed the cadmium does have the ability to build up in the body over time, stating it's half-life in the body is 20 to 30 years.

n. Sen. Witkos asked if the ASTM standards are utilized for other products. Dr. Weidenhamer responded there are other tests that use those standards. Sen. Witkos then asked for clarification regarding the use and abuse testing for ASTM standards. Dr. Weidenhamer responded that while wear and tear testing is required by other product standards, it was not incorporated into these standards.

o. Brent Cleaveland asked when the samples were collected for the testing. Dr. Weidenhamer responded the samples provided in this research were collected in 2008, but notes his continued research and testing on products through 2013. Brent Cleaveland inquired if comparable tests were done to other jewelry pieces. Dr. Weidenhamer responded his tests were not funded by external resources, and so his testing was primarily of lower-cost pieces. Brent Cleaveland asked if Dr. Weidenhamer was aware of the cadmium content in other jewelry products. Dr. Weidenhamer responded he was and noted their levels were much lower than those he had tested, as well as indicating cadmium can be found in solders. Brent Cleveland asked for further details on the charts provided and what component parts they relate to. Brent Cleaveland asked if the items he tested had any paints or rhinestone pieces on them. Dr. Weidenhamer responded they did, but he found those pieces did not impact the cadmium content when leeching occurred. Brent Cleaveland asked if they were removed at all prior to testing. Dr. Weidenhamer responded they were not removed to simulate how it would be affected in a real-world situation. Brent Cleaveland inquired as to the age range Dr. Weidenhamer identifies in his report as 'early in life' and are at the greatest risk for exposure. Dr. Weidenhamer responded that his statement was in reference to the standard exposure humans have and that additional exposure at an earlier point in life would have the potential to cause harm compared to those who have additional exposure later in life. He then asked if Dr. Weidenhamer had been contacted CPSC regarding his tests and concerns. Dr. Weidenhamer responded that he had and the CPSC was still waiting for a standard to be developed by the industry for the concerns he raised. Brent Cleaveland provided additional comments regarding the suitability of health levels the ASTM standard. Dr. Weidenhamer noted that his prior research was also not submitted to the CPSC regarding the cadmium content of unmarred products because there had been no regulations at that time. He added the overall conversation his research is intended to foster is whether the ASTM standard is utilizing appropriate evaluation of the data. His results show that there is countervailing data and variables that have not been fully considered.

IV. OTHER BUSINESS

a. Rep. Baram noted the likely speakers of the next meeting and alternative topics to cover if speakers are not available. He noted the need to have a general discussion on those top issues we can cover for the remainder of the year. In addition, with vacation schedules conflicting, members will be advised of an extended gap between meetings.

b. Rep. Urban announced the date and time of the next meeting being August 7th in Room 2D at 2PM.

V. ADJOURNMENT

a. The meeting was adjourned at 4:18 PM.