STATEMENT OF

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ON BEHALF OF THE FASHION JEWELRY AND ACCESSORIES TRADE ASSOCIATION

IN OPPOSITION TO H.B. 6498, AN ACT CONCERNING CADMIUM LEVELS IN CHILDREN'S JEWELRY

BEFORE THE CHILDREN'S COMMITTEE

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SUMMARY

Good morning. My name is Sheila Millar. I am a partner with the law firm of Keller and Heckman, LLP. Thank you for the opportunity to appear before you today on behalf of the Fashion Jewelry and Accessories Trade Association ("FJATA"). FJATA supports substitute legislation to replace An Act Banning Cadmium in Children's Jewelry, Public Act No. 10-113 (HB 5314), with a law that addresses all known hazards of children's jewelry in a science-based manner, but respectfully opposes H.B. 6498. FJATA's position can be summarized as follows:

1. **FJATA opposes the proposed substitute measure before you since it continues to rely on a total content limit for cadmium of 75 ppm.**
2. **FJATA's opposition to total content limits for cadmium is based on scientific data and is supported by U.S. Consumer Product Safety Commission ("CPSC") research. Quite simply, CPSC determined that a total content limit for cadmium was not supported by its research.**
3. **FJATA supports replacing the state's total content limit for cadmium with the requirements of ASTM F2923-11, which adopts a migration approach endorsed by the CPSC and in addition covers all other known potential hazards of children's jewelry in a comprehensive way.**
4. **ASTM F2923-11 was the basis for legislation adopted last year in the state of Rhode Island, which was adopted with broad bipartisan support. FJATA urges this Committee to support adoption of a similar legislation to further harmonize national safety standards for children's jewelry.**

The current law, which will go into effect in July, was approved on June 4, 2010. This occurred before the CPSC completed an extensive evaluation of the potential risks of cadmium in children's jewelry and toys.[1] The CPSC issued recommended safety limits for cadmium of 200 µg for ingestion exposures, measured by a 24-hour acid extraction test, and 18 µg for mouthing exposures, measured by a saliva test. CPSC urged the jewelry industry to adopt its recommendations through an ongoing standards-development initiative at ASTM International that included a broad group of diverse stakeholders.

ASTM F2923-11 was developed through a consensus process that included fashion and fine jewelry producers, retailers, testing laboratories and consumer groups, as well as representatives from the CPSC. In addition to incorporating limits on cadmium derived from the CSPC Staff Report on Cadmium in Children's Metal Jewelry (October 2010) at the express request of the Commission, ASTM F2923-11 addresses all known potential hazards for jewelry designed and intended primarily for children 12 and under. For example, the standard covers nickel release, magnets, batteries, and more.

ASTM 2923-11 adopts the CPSC's recommendation that acid extraction tests assessing the amount of cadmium that might be released should a child accidentally swallow a metal or

[1] Staff Report, Cadmium in Metal Jewelry, October, 2010, attached to letter to Brent Cleaveland, Executive Director, Fashion Jewelry and Accessories Trade Association, October 19, 2010, available at http://www.cpsc.gov/LIBRARY/FOIA/FOIA11/os/cadmiumjewelry.pdf.

plastic component of jewelry should be the principal determinative of safety. In its October, 2010 staff report, the CPSC concluded that a total content limit for cadmium was not supported by its research. Its tests showed that the release of cadmium in tests designed to mimic potential exposures through accidental ingestion was not proportional to total content. Those tests were consistent with industry tests as well. Indeed, the CPSC characterized as "essential" that stakeholders working to develop a children's jewelry safety standard adopt an approach based principally on evaluating children's jewelry products for their potential to allow for cadmium uptake in the body if accidentally ingested.[2]

ASTM F2923-11 embraces the CPSC recommendations in how to safeguard children from exposure to potentially harmful levels of cadmium. The standard also establishes a screening limit of 300 ppm based on data establishing that none of the tests indicated any potential risk of migratable cadmium release from products containing trace amounts of cadmium. The screening limit was adopted to provide design guidance to manufacturers in terms of raw material selection, and also in recognition that all jewelry, including fine jewelry, is subject to the cadmium limits. Although materials like gold are low in lead, cadmium has been used in fine jewelry for many years. Recycling practices with gold and silver jewelry, and use of solder that includes cadmium, could result in total cadmium in these products that might exceed 75 ppm. Consequently, the state's total content limit will affect not just fashion jewelry, but fine jewelry as well.

We urge Connecticut to adopt a harmonized approach to children's jewelry safety that is both health-protective and consistent with the recommendations of the national federal consumer product safety agency.

[2] *See* January 24, 2011 memorandum tofrom CPSC to the ASTM F15.24 Subcommitte on Children's Jewelry, available at http://www.cpsc.gov/PageFiles/96086/cadmiumjewelrycomm.pdf .

Background

It is important to note that the jewelry industry strongly opposes use of high amounts of cadmium in jewelry. However, cadmium has been used for decades in both fashion and fine jewelry products without reports of adverse health effects in adults or children at levels historically used. Cadmium is a heavy metal found in nature. It is in soil and in rocks, so is found with ores used in metals to make jewelry. Cadmium is therefore often present, typically in trace amounts, in metal components, such as zinc or tin, used to make jewelry, and also may be added to provide certain technical properties.

In jewelry manufacturing, including karat gold jewelry and sterling silver jewelry, one of the principal longstanding uses of cadmium has been as a component in solders used in joining jewelry components, typically at an *average* level of about 300 ppm, but sometimes at higher levels. While low-cadmium solders are now available, it is important to remember that many new karat gold and sterling silver alloy melts begin with using what the industry calls clean scrap material, important with the implementation of green initiatives in the industry. This material is typically created from general jewelry fabrication and is reusable material free of oil, grease and contaminants. With the introduction and use of both clean scrap material and other general jewelry scrap, there exists in the normal course of alloying some amount of cadmium in precious metals used to make jewelry. While levels are generally low (levels are below 300 ppm over 95% of the time), cadmium may be present at levels above 300 ppm in gold or silver alloys through these recycling practices. Precise control of total content in the recycling stream is not possible.

Cadmium can also be found in certain pigments used in paints or surface coatings.

In addition to use in metals, solder, and solder-filled jewelry, cadmium is used as a stabilizer in certain plastics and may be used as a pigment in crystal, glass, ceramics, enamel or plastics. Cadmium in crystal and glass, like lead, will not easily migrate because it becomes part of the matrix of the crystal. In some applications, like ceramics or enameling, the manufacturing process results in a strong bond of the elements and the other material, also resulting in limited bioavailability of the element.

Development of the ASTM Children's Jewelry Safety Standard

When initial reports in 2010 suggested that cadmium might be present in children's jewelry at levels well above amounts historically used, both CPSC and the jewelry industry began conducting tests to assess the potential for children to be exposed to harmful levels of cadmium. FJATA, with other stakeholders, including test laboratories, representatives of the fine jewelry industry, CPSC and consumer groups, formed a Subcommittee of ASTM International's F15 committee and initiated a process to develop a cadmium safety standard for children's jewelry. Representatives of CPSC's toxicological, testing and human factors staff participated in the ASTM F15.24 Subcommittee and were involved in all stages of the standards development process. At the outset, FJATA advised the ASTM Subcommittee that a guiding principle for the work of the Subcommitte would be that the Subcommittee would look to the best available science in developing the children's jewelry safety standard.

CPSC also received a petition requesting that it adopt a total content limit on "toy jewelry" that contained more than "trace amounts" of cadmium filed by a coalition of environmental groups in May, 2010.[3] In June, 2010, the state of Connecticut adopted legislation establishing a 75 ppm total content limit for cadmium in children's jewelry, to go into effect July 1, 2014. This action occurred before the CPSC's extensive technical work was completed. Presumably, the adopted effective date of 2014 anticipated that additional technical data might become available from CPSC before that date.

The CPSC's October, 2010 report on cadmium represents the most extensive review of cadmium in children's products ever conducted, and was months in the making. In sum, the CPSC staff's technical report *rejected* a total content limit as a sound basis for regulation of cadmium in children's jewelry or toys. Instead, CPSC recommended migration testingof metals used in jewelry to prevent exposure to harmful levels of cadmium, and established recommended exposure limits based on its analysis of the evaluation of toxicological data of 18 micrograms in a saline test (simulating mouthing exposure) and 200 micrograms in a 24-hour acid extraction test (simulating accidental ingestion). The Commission staff expressly urged the jewelry and toy industries to consider its technical input and recommended migration testing approach in working on separate ASTM standards for children's jewelry and toys.

CPSC also continued to refine its 24-hour acid extraction test method to evaluate cadmium in metal components of children's jewelry. In a January 24, 2011 memorandum to the ASTM F15.24 Subcommitte on Children's Jewelry,[4] CPSC reiterated its request that the Subcommittee focus on migration testing in developing recommended limits for cadmium in children's jewelry. In the memo, the staff noted:

> The staff also recognizes that the mere presence of cadmium in a product does not establish that a hazard exists, because exposure to hazardous amounts of the chemical from use of the product may not be likely for all products. Nonetheless, staff believes that the presence of cadmium could present a risk to children if use of the product, including ingestion, results in exposure to hazardous quantities of cadmium. As such, simulating possible chemical and physical processes based on ingestion that might degrade a cadmium containing product, allowing for cadmium uptake in the body, *is deemed not only relevant but also essential.* These processes include, but are not limited to, the electrochemical process of galvanic corrosion; constant agitation as in peristalsis; the presence of an acidic solution similar to gastric conditions; and the degradation of an electroplated coating due to the acidic medium and abrasion (emphasis added).

Notably, CPSC's test results establishing "that there is no clear relationship between the extractability of cadmium from children's metal jewelry or other metal items and the cadmium content of items"[5] were very consistent with test results sponsored by FJATA. Those tests also

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[3] Citizen Petition to EPA and CPSC Regarding Cadmium in Children's Products, Especially Toy Metal Jewelry, May 28, 2010, available at http://www.cpsc.gov/LIBRARY/FOIA/FOIA10/petition/cadmium.pdf.

[4] *See* http://www.cpsc.gov/PageFiles/96086/cadmiumjewelrycomm.pdf.

[5] *Id.*

failed to show a close link between total cadmium content and migration.[6] Similarly, both CPSC and FJATA tests demonstrated that the propensity for cadmium to be released from metal substrates such as zinc and tin differed by about an order of magnitude.

After much deliberation, the ASTM Children's Jewelry Subcommittee adopted the CPSC's recommendation for a migration standard for cadmium in metal components of jewelry with one change. The standard adopts a total content *screening limit* of 300 ppm for cadmium in metal substrate of jewelry derived from the CPSC and industry test data. Although jewelry containing less than about 1.5% cadmium in metal components was not associated with the potential for exposure to harmful levels of cadmium in CPSC's tests, applying some additional conservative factors regarding the potential for migration, the final ASTM F2923-11 standard adopted a lower screening limit of 300 ppm to provide design guidance for material selection while providing data-based assurance that metal components of jewelry products containing this amount of cadmium would never result in adverse health effects to children. For plastics, testing under the internationally-recognized toy safety testing procedure, EN-71, is required.

It is important to note that the ASTM F2923-11 cadmium substrate limits apply to all metals or plastics used in children's jewelry. Thus, while gold and precious metals are excluded from testing for lead under the standard, as well as under CPSC rules, these materials are not excluded from the cadmium reqirements of ASTM 2923-11 because of the historic use of cadmium in fine jewelry-making. Materials not associated with cadmium migration, like crystal and ceramics, are excluded from the limits. The standard also adopts limits for all heavy metals in paint and surface coatings, consistent with international toy safety standards.

CPSC staff supported this approach in a briefing sent to the Commissioners, saying that the 300 ppm screening limit "represents a relatively low cadmium concentration that, in staff's experience, is not expected to be associated with excess exposure or subsequent adverse health effects."[7] The four sitting CPSC Commissioners, on a bipartisan basis, unanimously voted to deny the Sierra Club petition seeking a mandatory total content limit on cadmium in "toy jewelry" in July, 2012.[8]

ASTM 2923-11:

A Science-Based Solution to Addressing Potential Risks of Children's Jewelry

ASTM 2923-11 is the first international safety standard for children's jewelry. It covers much more than cadmium. The ASTM Children's Jewelry Subcommittee agreed that the standard should address all identified potential risks associated with children's jewelry. ASTM 2923-11 therefore also adopts limits on mercury and other heavy metals (*e.g.*, barium, selenium, hexavalent chromium, etc.) in paint and surface coatings of children's jewelry. The limits for these elements in surface coatings are identical to limits in the toy safety standard, ASTM F963,

[6] Exponent Technical Report, Evaluation of Cadmium in Metal Jewelry, November, 2010.

[7] *See* Staff Briefing Package, Staff Update, Petition HP 10-2 Requesting Restriction of Cadmium in Toy Jewelry, June 29, 2012 at p. 4, available at http://www.cpsc.gov/PageFiles/91376/cadmium.pdf.

[8] See Record of Commission ballot vote at http://www.cpsc.gov/library/foia/ballot/ballot12/cadmiumpet.pdf.

which is a mandatory national standard per the Consumer Product Safety Improvement Act ("CPSIA"). The limits on heavy metals in paint also mirror requirements of the European toy safety standard, EN-71. ASTM 2923-11 adopts one chemical requirement that is not found in the toy safety standard, namely, limits on migratable nickel in metals given potential allergic responses when children wear nickel-containing jewelry. ASTM 2923-11 also addresses potential physical hazards, like magnetic jewelry and battery-operated jewelry, in a common sense way, similar to the ASTM F963 requirements for toys. It also includes guidance on how to identify and distinguish children's jewelry from adult jewelry.

The CPSC staff and Commissioners have recognized the adequacy of the ASTM children's jewelry standard. As noted above, the Commission has supported the comprehensive jewelry safety standard, unanimously voting to deny the petition seeking a mandatory total content limit on cadmium in "toy jewelry" in July, 2012.

FJATA urges the state to replace its total cadmium content limit with requirements designed to protect children from all identified potential risks associated with children's jewelry. FJATA respectfully submits that the current limits are not based on the type of rigorous scientific approaches used to develop the ASTM Children's Jewelry Safety Standard. The approach to substitute legislation that FJATA supports, namely, legislation based on ASTM F2923-11, will provide better safety for children than existing Connecticut law, because it covers all potential hazards of children's jewelry.

FJATA urges this committee to adopt new legislation replacing current cadmium limits with requirements based on ASTM F2923-11. In so doing, you will further goals of a nationally consistent safety net for children grounded in the best available science, and reduce unnecessary burdens on the companies who make and sell safe children's jewelry.