



**UNITED STATES  
CONSUMER PRODUCT SAFETY COMMISSION  
4330 EAST WEST HIGHWAY  
BETHESDA, MD 20814**

To: ASTM F15.24 Children's Jewelry Safety Subcommittee  
Subject: Staff comments concerning appropriate cadmium test methodologies  
Date: January 24, 2011

Dear ASTM F15.24,

The attached document details the cadmium extraction methods used by the U.S. Consumer Product Safety Commission (CPSC) technical staff. CPSC staff would appreciate consideration of this methodology for inclusion in the new voluntary standard for children's jewelry currently under development by ASTM F15.24.

CPSC staff recognizes the toxicity of cadmium and the potential for hazardous exposures from some consumer products.<sup>1</sup> 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.

Testing by CPSC staff indicates 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. Therefore, at this time, the available data indicate that measuring soluble cadmium under conditions including the processes described above may be the most appropriate method for determining whether a product may be considered a hazardous substance.

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<sup>1</sup> Staff Report on Cadmium in Children's Metal Jewelry, October 2010.