U.S. Consumer Product Safety Commission (CPSC) Overview

Jacqueline Elder
Assistant Executive Director
for Hazard Identification and Reduction

Introduction

- The U.S. Consumer Product Safety Commission is an independent regulatory agency created in 1973
- Mission: To protect the public from unreasonable risk of injury and death associated with consumer products
  - Approximately 420 total employees and $62 million annual budget
- Technical expertise in the areas of Health Sciences, Engineering, Epidemiology, Human Factors, and Economics

Regulation of Products

- Jurisdiction over 15,000 types of products used in or around the home
- Regulatory authority extends to such products as: toys, electronic equipment, appliances, clothing/textiles, household cleaners/chemicals, and furniture
- Exceptions include foods, drugs, cosmetics, medical devices, pesticides, certain radioactive materials, and automobiles
- CPSC does not have pre-market approval authority

Products Containing Nanomaterials

Products claiming to contain nanomaterials

- Reported product categories under CPSC jurisdiction that may contain nanomaterials
  - Sports equipment, clothing and textiles, air deodorizers/cleaners, household chemicals, paints, and appliances
- Wilson Center products database identifies over 300 commercial products claiming to contain nanomaterials
  - CPSC, FDA, EPA identified as primary regulatory agencies
  - Woodrow Wilson staff asserts that nearly 70% of the selected products were under CPSC jurisdiction
    - Not verified by CPSC staff

Definitions of Toxicity

- CPSC regulates many chemical hazards under the Federal Hazardous Substances Act (FHSA)
- Under the FHSA, the term "hazardous substance" is defined as:

"Any substance or mixture of substances which (i) is toxic, (ii) is corrosive, (iii) is an irritant, (iv) is a strong sensitizer, (v) is flammable or combustible, or (vi) generates pressure through decomposition, heat, or other means, if such substance or mixture of substances may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children."

Exposure and Toxicity

- To be considered a "hazardous substance," a substance or product must satisfy a two-part definition
- It must be "toxic", or present one of the other hazards enumerated in the statute
- It must have the potential to cause "substantial" illness or injury during or as a result of "reasonably foreseeable handling or use"
- Thus, a potential hazard depends on risk (toxicity and exposure)

Acute and Chronic Toxicity

- The FHSA addresses both acute and chronic effects
- Acute toxicity is defined in regulations issued under the FHSA
- Chronic effects include carcinogenicity, neurotoxicity, and reproductive or developmental toxicity, as well as any other persistent effect such as organ toxicity

Chronic Hazard Guidelines (CHG)

- In 1992, the Commission issued guidelines for assessing chronic hazards under the FHSA
- Provide guidance on
  - Assessing exposure
  - Determining toxicity (e.g., carcinogenicity, neurotoxicity, reproductive/developmental toxicity, bioavailability)
  - Risk assessment approaches and acceptable risk
- Intended to assist manufacturers in complying with the FHSA
  - Not mandatory

Data Needs for Exposure and Risk Assessment of Nanomaterials

- Identify consumer products that contain nanomaterials
- Characterize nanomaterials in a consumer product
- Determine size distribution of particles released from products
  - Toxicity data for those sizes - does toxicity change ?
  - Coatings – does toxicity change?
- Instrumentation
  - Development of analytical protocols
  - Feasibility

Summary

- Toxicity and exposure assessment are critical components in assessing potential risks from consumer products
- Approach to regulating products with nanomaterials will likely be similar to approach used to regulate products containing other chemicals
- Need for new toxicity data and exposure assessment (analytical) techniques appropriate for nanomaterials

How Are Hazards Identified?

- Data Review / Analysis
- Compliance Activities
- Petitions

Factors Considered When Selecting Projects

- Frequency and Severity of Injuries
- Causality of Injury
  (Can the injury be reduced or eliminated?)
- Chronic Illness and Future Injuries
- Cost and Benefit of Action

Factors Considered When Selecting Projects (continued)

- Unforeseen Nature of the Risk
  (Is the hazard hidden?)
- Vulnerability of the Population at Risk
  (Does it affect children or the elderly?)
- Probability of Exposure to Hazard (Units in use, frequency of use, etc.)

Options

- Labeling
- Product Recalls
- Product Bans
- Voluntary Standards
- Mandatory Standards
- Information/Education
- Other