Toy Development Process,
Regulatory Scheme and New Initiatives

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Discussion Topics

- Overview of toy industry characteristics
- Vocabulary – construction and testing
- Toy development and production process
  - Concept of accessibility
- Global regulatory scheme
  - Testing methods and standards
- TIA’s new Toy Safety Certification Program (TSCP)
Toy Industry Overview

- Diversity in toy manufacturing sector
- Designing for a global marketplace
- Approximately half the toys sold are new to market within past three years
- Highly seasonal nature to manufacturing and sales
- Approximately 40% of toys marketed today have some electrical and/or mechanical components to support learning and play value
**Toy 101 Vocabulary**

**General Product Components**

- **Surface coatings – outer surface - potential child contact**
  - Decorations, labels, paints and other coating materials
- **Substrate – basic material of construction**
  - Plastic, vinyl, cloth, metal or combination
- **Mechanicals**
  - Screws, clips, springs, axels, gears, bushings
- **Electricals**
  - Jacks, plugs, connectors, circuit boards, coated wires, solder, capacitors, resistors, diodes
Key Safety Terms

- **ASTM F963 – 39 sections on “Safety Requirements”**

- **Small Part:**
  - Prevent choking hazards in toys appropriate for children < 36 months of age

- **Accessible Part of Component:**
  - Any area of toy that child can come in contact with
  - Defined by what can be touched by accessibility probe that simulates child’s abilities and dexterity
  - Inaccessible if passes probe test both before and after use and abuse testing
  - Hazard eliminated by preventing exposure

- **Use/Abuse Testing**
- **Flammability**
- **Heavy Elements**
- **Packaging**
- **Age Grading Guidelines**
Balancing Critical Interests in Toy Safety

• Critical to use reliable design and materials to ensure small parts remain inaccessible
  – During normal play
  – For small children even after abuse
  – Provide strong anchoring point for screws in plastic

• Certain materials have been well tested over time and provide reliable safe play for a child
  – PVC – durability, withstand UV exposure
  – Brass – soft property makes for reliable performance and secure screw inserts

• “Lead-Free Brass”
  – Misnomer – “ultra-low-lead brass, “enviro-brass”
  – Exceeds 90 ppm WA standard
What Makes a Learning Toy?

- **Features** - lights, sounds, motion, vibration
- **Stimulates visual, auditory, tactile, verbal senses, learn their actions cause responses and promote interaction with people**
Interactive Toys and Learning

• **Promote development**
  - Cognitive – memory, language, reasoning
  - Physical – strength, motor control, coordination

• **Value recognized for all ages, settings and development levels**
  - Infants to adolescents
  - Stroller to classroom
  - Diversity of needs and skills levels, special needs

• **Research shows consumers are turning to electronic toys to enhance a child’s interactive learning**
  - 75% of consumers who purchased an electronic toy in the past year said they did so for educational value
  - Three of the top five most purchased types of electronic toys were educational products."
Overview of Quality Producers & Production Practices

• Quality is integrated throughout the toy development process
  – Concept – Design
  – Development - Production Pilot
  – Production
  – Post Production

• Closed loop system
Relationship Between Quality and Toy Development

Closed Loop Continual Improvement
International Regulatory Scheme

- **United States (early 70’s)**
  - Federal Toy Safety Standard, 16 CFR Part 1000-end
  - ASTM F-963-07: Standard Consumer Safety Specifications for Toy Safety
    - Physical/Mechanical
    - Flammability
    - Migration of Certain Elements

- **Europe (late 80’s)**
  - Toy Safety Directive
  - EN-71 Toy Safety Standard
  - “CE” Mark

- **International (late 90’s)**
  - ISO standard 8124
Issues Related to Standards and Methods for Measuring Lead

- Safety considerations directly related to strength, integrity reliability of using alternative materials

- **Consistent Testing Methodology Is Necessary to Ensure Accurate Universal Results**
  - Proposed Federal legislation requires methods be developed to ensure that testing is performed consistently across laboratories.
  - No standard methodology currently exists for determining the total lead in plastic, metal, and other substrate materials.
  - Different testing methodologies yield very different results

- **Standardized methods for extractable lead do exist for these substrates and are detailed in the European standard EN71-3 and ISO 8124-3**
  - Established methodology provides a strong basis for measuring WA standard of “90 ppm by weight”
• Importing companies and domestic manufacturers are responsible for meeting three basic requirements:

1. Hazard and risk assessment for toy product design
2. Factory process control audits
3. Production sample testing to validate that the factory is producing toys that meet U.S. safety standards

• These three elements will be verified or audited by accredited certification bodies

• Upon successful completion of applicable requirements (certification), the product or packaging may bear a toy safety mark
**STEP 1.**

- **SUBMIT APPLICATION**
  - Apply for certification of toy(s) via TSCP database.
  - Upload file(s).
  - Designate certification body.

**STEP 2:**

- **ATTEST TO DESIGN ANALYSIS**
  - Attest that a design hazard assessment was completed for each toy.

- **CONFIRM FACTORY AUDIT**
  - Identify producing factory.
  - If factory has not previously been audited or assigned a preliminary rating, it will be prompted to do so.

- **IDENTIFY TESTING LAB**
  - Lab to test to TSCP requirements and upload results on to TSCP database.
  - If testing was previously completed, the report number will be provided at the time of application.

**STEP 3:**

- **CERTIFICATION**
  - Certification Body alerted that the required pieces of information gathered in Steps 1 and 2 are now available to assess toy.
  - Certification Body certifies toy or goes back to applicant with any needed additional information or steps.
  - TSCP website indicates when toy is certified.
www.toyassociation.org

Questions?