Product Life Cycle Best Practices

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Product Life Cycle

Customer Data Management

Vendor Selection

Pre-Production

Production

Transportation

Distribution

Store / Merchandising

C-TPAT / Security Audit

Pre-shipment Inspection

Loading Inspection

Final Random Inspections

Process Audits

Intervention Testing

Compliance & Performance Testing

In-Line / In-Process Inspection

Label Evaluation & Verification

Raw Materials Testing / Testing to Failure

Raw Materials Traceability

Sensory Testing

Supplier Qualification

Social Audit

Risk Assessment

GAP Analysis

Quality & Capability Audit

Concept / Design Review

Pre-shipping Inspection

Return to Vendor Analysis

GAP Analysis

PPAI: PRODUCT SAFETY POWERED BY PPAI
Product Concept
Human Factors

- Human Factors Review – goes beyond the standards
- Try to anticipate foreseeable use and unintended use scenarios
- Understand and enhance interaction between users and products
- Work with product designers to remove foreseeable hazards prior to manufacture
Mandatory & Voluntary Standards

• Meet or exceed existing standards.

• Standards are minimum requirements.

• *Over half of all toys recalled in previous years complied with mandatory and voluntary standards!*
Review & Analyze Data

• NEISS data
• Human factors research journals
• CPSC publications and data
• NIH publications – medical literature
• Social sciences publications
• Anthropometric data (e.g. CHILDATA)
• CPSC public consumer product safety database
• Company internal feedback
Conduct Behavioral Task Analysis

Identify steps associated with product use.

Each step has a decision juncture:

- Product assembly
- Use
- Cleaning, troubleshooting
- Disassembly
- Storage
Conduct Research

• Retrospective data analysis

• Observations of children using toys

• Focus groups

• Survey research
When to Design the Hazard Out

- Foreseeable
- Likelihood of the unintended use
- Severity of injuries
- Technological and financial feasibility of design fix
Vendor Selection
Audits

- Initial factory qualifications
- **Quality & Capability audit**
- Quality assessment systems
- Production monitoring
- cGMPs
- HACCP
- SQF
- Sanitation
- Product safety
- OSHA
- **Social compliance audit**
Quality & Capability Audit

Strengths
The strengths of the manufacturing industry are that it is relatively stable. Although the demand for manufacturing tends to fluctuate with the ups and downs of demand, is characterized by regular periods of recovery following any downturns. Manufacturing has become highly efficient over the last century, with the ability to maximize both the productivity of the workers and machines to maximize profits.

Weaknesses
A weakness of the manufacturing industry is a lack of control. This can be control of the internal processes, quality control activities and even the work force. Documented policy and procedures along with consistent enforcement of these procedures eliminate variation which can become a weakness.
Responsible Sourcing

• Social Compliance Assessments
• C-TPAT Audits
• Monitoring of Supply Chain through Audits
• Training & Education
• Consultation & Stakeholder Engagement
• Conflict Minerals
• Ethically Responsible Engagement

Publications include:

– Country Labor Law Profiles
– Annual CSR Risk Index
– Global Minimum Wage Lists
– Best Practices Manuals
Pre-Production
Regulatory Research

• **Monitor Proposed / Pending Regulations & Legislation**
  - Westlaw–Capital Watch, Health Canada, US Federal Register, InfoMinder, EUROPA EU, GovTrack, Australian Government ComLaw

• **Proposed New / Amended Standards**
  - BSI, ASTM, CEN, IEC, SABS, UL, SAI Global, RAPEX, AATCC, ISO, CPSC, NIST, NotifyUS, NSSN, British Standards OnLine

• **Other Resources**
  - Product Safety Daily, Product Safety Australia, CPSC Bulletins, TIA, CA OEHHA Press Releases, SATRA, British Standards OnLine, ECHA, Laboratory Websites/Newsletters
Technical Committees and Meetings

- ASTM
- ASQ
- TIA
- JVC
- CPSC
- ICPHSO
Pre-Production Testing

- Research Testing (Testing to Failure or Upper Limit) with statistical analysis of results (z-value calculation)

- Raw Materials Qualification (Heavy Metals Analysis, Lead Content and Phthalate Content of wet inks, Plastic material and other raw materials, Toxics in packaging materials, Azo Dyes in fabric)

- Preproduction Mechanical Safety Testing to client standards. Enhanced criteria based on global safety standards may be used.
Production
Testing

- Safety
- Performance
- Quality
- Regulatory Requirements
- Function and Durability
- Claims Substantiation
- Sensory Evaluation
- Product Comparisons
- Consumer Studies
- Focus Groups
Random/Representative Sample Selection

- Avoid ‘golden samples’
- Basis for inferring compliance of entire lot
- Typically selected from product in final packaged state
Quality Inspections

Top of Production (TOP)
- Raw Materials
Initial Production (IPI) / First Line Inspections
- First 200 units produced
In-Line / In-Process Inspections (DUPRO)
- Between 20% and 40% produced
Final Random Inspections (FRI)
- Minimum; 100% produced, 80% packed
Loading Inspections
- Count, confirm load, seal container - at factory or port
Production Monitoring
- On-site monitoring of each operation throughout the production

*Inspections are typically conducted using ANSI/ASQ-Z 1.4-2008 sampling procedures.*
Quality Inspection Benefits

• Reduction of non-compliant products reaching your customers.
• Prevents defective products from being shipped from the manufacturer.
• Higher quality levels = higher customer satisfaction.
• Reduction in product returns.
• Cost effective means to help ensure that products meet your quality standards prior to shipment.
Transportation
Customs-Trade Partnership Against Terrorism (C-TPAT)

- Voluntary supply chain security program, launched in November of 2001
- Over 10,000 certified partners
- Partners must ensure the integrity of their supply chain
- Partners are considered low-risk
- C-TPAT is base requirement for Importer Self Assessment
Importer Self-Assessment Program (ISA)

Five Components of Effective Internal Controls:
• Control Environment
• Risk Assessment
• Internal Control Activities
• Information and Communication
• Monitoring

Benefits of ISA Program:
• Exemption from comprehensive CBP audits
• Less intrusion from CBP
• Greater business certainty
• Fewer cargo examinations
• Faster Customs clearance
• Fewer post-entry inquiries
Importer Self-Assessment – Product Safety

In addition to CBP regulations, ISA-PS participants must agree to comply with all applicable CPSC laws and regulations, including:

- CPSIA, CPSA, FHSA, FFA

Benefits include:

- Reduced CPSC product safety testing
- Priority “front of the line testing” at CPSC laboratories when needed
- Product-specific CPSC point of contact to assist with NEISS Product Coding
- Conditional release of goods
- When needed, product destruction by importer rather than redelivery to CBP
- Mitigating factor in a civil penalty
Port Surveillance

- Continued CPSC priority
- CPSC investigators working with CBP inspectors
- Nearly 3 Million units of violative products stopped in 3rd quarter of FY 2012 alone!
- Hit rate has increased, from 60% to 77%
**CPSC Import Stoppage Summary 3rd Quarter, FY 2012**

**Toys/Children’s Products**
- Total # of products stopped – 341 (81%)
- Total # of units stopped - 1,025,618 (36%)

**Primary Violation/Defect**
- Lead – 176 (paint 5; content 171) (51%)
- Phthalates – 54 (16%)
- Small Parts – 41 (14%)
- Certification – 26 (8%)
- Tracking Labels – 15 (4%)
- Durable Nursery Products – 9 (3%)

**Non-Children’s Products**
- Total # of products stopped – 79 (19%)
- Total # of units stopped – 1,785,469 (64%)

**Primary Violation/Defect**
- Fireworks – 37 (47%)
- Bicycle Helmets – 10 (13%)
- Cigarette/other lighters – 10 (13%)
- Bicycles – 7 (9%)
- Hairdryers – 4 (5%)
- Holiday lights – 3 (4%)
FY 2012 Violative Import Samples by Hazard Description

- Lead in Substrate: 43%
- Choking/Ingestion/Aspiration: 13%
- Other Children's Products: 9%
- Phthalates: 8%
- Fireworks: 6%
- Other Violation Codes: 2%
- Art Materials: 1%
- Lighters: 3%
- Fabrics/Material (Fire): 4%
- Lead in Paint: 4%
- Fabrics/Material (Other): 5%
- Electrocution/Electric Shock: 5%
- Other Violation Codes: 2%
Common Issues That May Trigger Inspection

- Repetitive use of foreign suppliers found in violation
- Incorrect filing of manufacturer ID on entry documents
- Un-manifested and un-invoiced merchandise
- Missing invoices
- Delay of entry documents from broker
- Class of product under review by CPSC to monitor compliance
- Overlapping IPR and safety concerns
- Certificate identifies a non-accredited lab
Quarterly Import Stoppage Report

<table>
<thead>
<tr>
<th>Foreign Manufacturer</th>
<th>Importer</th>
<th>Product Name</th>
<th>Country of Origin</th>
<th>Violation</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Ability International Enterprise Ltd</td>
<td>Toy Investments Inc. dba Toysmith</td>
<td>Zoomsters Toy Vehicles</td>
<td>China</td>
<td>Small parts</td>
<td>2016</td>
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<tr>
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<td>Sand Animal Reptile Asst</td>
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<td>Leaded in children's product/FHSA</td>
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<td></td>
<td>Sand Animal Sea Life Asst</td>
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<td>Anhui Huangshan Longfuyan Trading Co., Ltd.</td>
<td>USA Shun Da Trading Inc</td>
<td>Doll - Blue</td>
<td>China</td>
<td>Exceeds phthalate permanent ban limit</td>
<td>300</td>
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<tr>
<td></td>
<td></td>
<td>Doll - Pink</td>
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<td>Phthalates interim certification violation Tracking label violation</td>
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<td>IQ Magic Cube</td>
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<td>Toy Accordion</td>
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<td>Toy Car - Push Toy</td>
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<td>Kid's Volleyball Set</td>
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<td>MP lighter reporting</td>
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<td>MP lighter child-resistance</td>
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<td>MP lighter labeling</td>
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<td>MP lighter certificate of compliance</td>
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<tr>
<td>Best Trust Exp &amp; Imp Co., Ltd</td>
<td>Home Port Trading Corp</td>
<td>Lighters</td>
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<td>MP lighter certificate of compliance</td>
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<td>Cnph International Llc</td>
<td>Larry Chan dba Yen Yen Kidswear</td>
<td>Fuzzy Jacket - Beige</td>
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<td>Fuzzy Jacket - White</td>
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<td>Hooded Jacket Red/Purple</td>
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<td>Tracking label violation</td>
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Avoid Pitfalls That Could Delay Entry

- Make certificates readily available and that they include correct citations
- Make sure 3rd party testing body is accredited by CPSC
- Ensure goods are classified appropriately
- Include product detail on invoice
- Join C-TPAT
- Sign up for ISA and ISA-PS (Importer Self-Assessment programs)
- Don’t import children’s upper outwear with drawstrings!
- Know your suppliers
Distribution
10+2 Importer Security Filing (ISF)

- Seller
- Buyer
- Importer of record number/Foreign Trade Zone applicant identification number
- Consignee number(s)
- Manufacturer (or supplier)
- Ship to party
- Country of origin
- Commodity HTSUS number
- Container stuffing location
- Consolidator (stuffer)
Global Classification Codes

GS1 Global Product Classification (GPC) codes

United Nations Standard Products and Services Code (UNSPSC)

<table>
<thead>
<tr>
<th>Hierarchy</th>
<th>Category Number</th>
<th>Name</th>
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<tbody>
<tr>
<td>Segment</td>
<td>43</td>
<td>Information Technology Broadcasting and Telecommunications Comm. Devices and Accessories</td>
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<tr>
<td>Family</td>
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<td>Components for information technology or broadcasting or telecommunications Computer Equipment and Accessories</td>
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<tr>
<td>Class</td>
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<td>Computers Computer accessories</td>
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<td>Commodity</td>
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<td>Computer switch boxes Docking stations</td>
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<tr>
<td>Business Function</td>
<td>14</td>
<td>Retail</td>
</tr>
</tbody>
</table>
Foreign Import Overview

European Community – CE mark

Saudi Arabia Conformity Assessment Programme

China – CCC mark

Gulf Cooperation Council
Foreign Import Overview, cont.

- Kenya – PVoC (Pre-Export Verification of Conformity) certificates
- Kuwait – GCC mark and Technical Inspection Report (TIR)
- Nigeria – SONCAP Certificate (through Standards Organisation of Nigeria Conformity Assessment Programme)
- Russia – GOST-R mark
- South Korea – KC mark
- Japan – ST mark for toys
- India – import license
- Brazil – INMETRO mark
Summary

Importers:
• Know your suppliers
• Know your product
• Stay up-to-date on regulations
• Participate in C-TPAT and ISA programs

Exporters:
• Know your suppliers
• Know your product
• Ensure compliance with applicable safety requirements of country of distribution
• Work with trusted partner within country of distribution
Store/Merchandising
Once on the market…

- Market surveillance testing
- DC/Store inspections
- Vendor return analysis
- Failure evaluation
- Recall assistance
- Focus groups
# Product Life Cycle Quality Assurance Process

<table>
<thead>
<tr>
<th>Product Concept</th>
<th>Vendor Selection</th>
<th>Pre-Production</th>
<th>Production</th>
<th>Shipment of Goods</th>
<th>Receipt of Goods</th>
<th>Distribution</th>
<th>Store / Merchandising</th>
</tr>
</thead>
</table>

## Training, Capacity Building & Continuous Improvement

- Design Review
- Factory Quality Evaluation
- Social Compliance Audit
- Raw Materials Testing
- Production Testing
- In Line Inspection
- Pre-Shipment Inspection
- Loading Inspection
- C-TPAT Audit
- Market Surveillance
Product Safety Resources

- **PPAI**: www.ppai.org
- **American National Standards Institute**: www.ansi.org or www.astm.org
- **FDA**: www.fda.gov
- **UL**: www.ul.com/consumerproducts
- **Questions?** AnneL@ppai.org
Thank you!

Questions?