Toy Safety Regulations and Toxics in Toys for Toy Design Students

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November 18, 2010

New York State Pollution Prevention Institute (NYSP2I)

Vision:

The vision of the NYS P2I is to foster the transformation and development of sustainable businesses and organizations in New York State in a collaborative program committed to making the State a leader in environmental stewardship.

Mission:

The mission of the Institute is to provide a high-impact, comprehensive and integrated program of technology research development and diffusion, outreach, training and education aimed at making New York State more sustainable for workers, the public, the environment and the economy through:

- reductions in toxic chemical use
- reductions in emissions to the environment and waste generation
- the efficient use of raw materials, energy and water

Toxic Materials & Ecodesign

- Phthalates, Bisphenol-A (BPA), and heavy metals
  - Potential human health and environmental effects
  - Products that may contain them
- Product Stewardship
- Ecodesign
- Life Cycle Assessments (LCA)

Phthalates and PVC

Phthalates - group of chemicals commonly used as plasticizers mainly to soften PVC

- Soft toys typically contain 15-20% phthalates
- New shower curtain smell
- Health effects are controversial

Soft, squishy, mouthed toys

Commonly Used Phthalates and their Potential Effects

Common Uses	Potential Effects
DEHP [di(2-ethylhexyl)phthalate]	
wall coverings, tablecloths, floor tiles, furniture upholstery, shower curtains, garden hoses, swimming pool liners, rainwear, baby pants, dolls, toys, shoes, automobile upholstery, packaging film, wire & cable sheathing, medical tubing, blood storage bags[a]	Limited evidence of reproductive toxicity[b] Strong evidence of endocrine disruption[c] Respiratory toxicant[d] Possible human developmental toxicant[e]
DBP (di-n-butyl phthalate)	
carpets, paints, glue, insect repellents, hair spray, nail polish, and rocket fuel[a]	Human immune system toxicant[b] Strong evidence of endocrine disruption[c] Possible human developmental toxicant[e] Limited evidence of reproductive toxicity[b]
Diethyl phthalate	
toothbrushes, automobile parts, tools, toys, food packaging, cosmetics, insecticides, and aspirin[a]	Human immune system toxicant[b] Strong evidence of endocrine disruption[c] Limited evidence of reproductive toxicity[b]

[a] Agency for Toxic Substances and Disease Registry, Public Health Statements
[b] National Library of Medicine, HazMap — Occupational Exposure to Hazardous Agents
[c] European Commission on Endocrine Disruption
[d] EPA, Hazardous Air Pollutants
[e] California, Proposition 65

Polycarbonate & BPA

Bisphenol-A – found in some polycarbonate shatter resistant plastics

- Baby bottles, metal can linings, sippy cups, food storage
- Water soluble
- Endocrine disruptor
- Toxic to aquatic environment

most Playskool products are BPA free

Phthalate & BPA Exposure

- Phthalates & BPA are not chemically bound to the plastic – this means they can easily leach out of the plastic and into the environment
- Phthalates are highly soluble in oils and leaching is increased when the plastic is heated
- BPA is water soluble and leaching is increased when the plastic is heated (avoid hot liquids and dishwasher), the plastic is cleaned with bleach or ammonia, or the plastic contains acidic material (ie. orange juice)
- Exposure is greater when material starts to show signs of wear and break down
- Children have a greater risk of exposure due to hand to mouth behavior and direct mouth contact

*CDC, *National Report on Human Exposure to Environmental Chemicals,* Phthalates Fact Sheet

Metals

Lead

Uses: stabilizer in PVC; pigmentation in paint, rubber, plastics, ceramics; cheap metal jewelry

Found in: jewelry, paint, PVC

Concern: neurotoxicity

Cadmium

Uses: stabilizer in PVC, coatings & pigments in plastic and paint

Found in: jewelry, PVC

Concern: developmental effects, known carcinogen

Bromine

Uses: flame retardants, most often listed as "brominated flame retardant"

Found in: furniture, textiles, plastic encasing electronics

Concern: persistent and toxic, possible carcinogen, may affect brain development, may cause reproductive problems

Lead, cadmium, mercury, arsenic are common PVC stabilizers

Green
- 1,589ppm lead
- 282ppm chromium

Red
- 1,075ppm lead
-274ppm chromium
- 83ppm arsenic

Orange
- 2,446ppm lead
- 586ppm chromium
-175ppm arsenic
- 58ppm mercury

Brominated Flame Retardants

Road Racers with Play Mat
By Fun Club

Mat: Bromine 30,831ppm

Princess Jewelry
By Dollar Tree

Necklace: Lead 257ppm
Bromine 12,550 ppm
Chlorine/PVC 257,196 ppm

Hair Clip: Lead 57ppm
Bromine 25ppm

Lightning McQueen Racing Chair
By Disney

Seat: Bromine 14,905
Mercury 39ppm

Base: Lead 34ppm
Bromine 25,562ppm
Mercury 156ppm

Product Details for Children's Products

Alpha Omega Convertible Blue Steel

Cosco

Overall Score 4.6 High Level

KEY LEVEL: HIGH, MEDIUM, LOW

Bromine	Chlorine	Lead	Others
5.0	0.0	1.0	1.0

Test Method
XRF

UPC/EAN
44681229008

Manufacturer Code
44681229008

Type
Car Seat (Convertible)

IMPORTANT NOTE: HealthyStuff.org ratings do not provide a measure of health risk or chemical exposure associated with any individual product, or any individual element or related chemical. Follow this link to read more.

Your List Need help?

Add the Product on This Page to Your List

Your list is empty!
Click "Need Help?" for instructions.

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Components†	Bromine	Chlorine	Lead
Base	2	0	0
Seat	18,754	0	0
Clip	1,503	0	12

† Note: numbers in this table represent parts per million of the given chemical.

You may also view complete chemical results for this product.

Full Rating Details:

Disney Baby's 1st Pooh Bear (2008)

3.5 GoodGuide's rating
learn about our ratings

- 2.0 Health
- 4.7 Environment
- 3.9 Society

All about this product
Ingredients, company information, certifications

Guide to Stuffed Animals
Ratings distribution, what matters most...

All Ratings for Disney Baby's 1st Pooh Bear (2008) (113 data points)

Health and Safety Ratings

- **Human Health Impacts** 2.0 out of 10
  - Human Health Impacts 2.0 out of 10
    - Exposure Concerns about Ingredients 2.0 out of 10

Social Ratings

- **Consumers** 2.4 out of 10
  - Customer Satisfaction 4.8 out of 10
  - Quality and Safety 0 out of 10
- **Corporate Governance** 4.8 out of 10
  - Corporate Reporting 4.8 out of 10
    - Corporate Governance 4.8 out of 10

Environmental Ratings

- **Company** 4.7 out of 10
  - Environmental Impact 5.2 out of 10
  - Environmental Management 3.9 out of 10
  - Resource Management 4.6 out of 10

Product Stewardship

- **Product stewardship** considers the environmental impact of the entire product life cycle and holds all those responsible throughout the life of the product responsible for the environmental impacts
- **Extended producer responsibility** extends the responsibility of end of life to the manufacturer of the product

Ecodesign Strategies

- Select low impact materials
- Select recycled or recyclable materials
- Select materials without known or potential effects due to exposure
- Avoid toxic materials where possible
- Avoid production processes which are energy, water, material, or toxics intense
- Design products to minimize waste in production
- Design products to minimize waste at the end of life – modular designs, reuse, recycle, remanufacture
- Dematerialize where possible

Ecodesign Strategy Examples

lead, PVC, bromine free

reduced PVC use with "Try Me" packaging

made from PC milk jugs, recyclable (no metal parts)

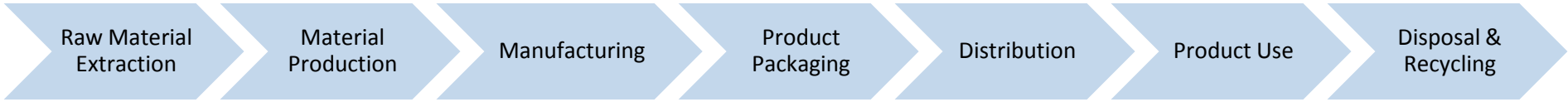
non toxic materials

marker barrels & caps switched to black to reuse manufacturing scrap

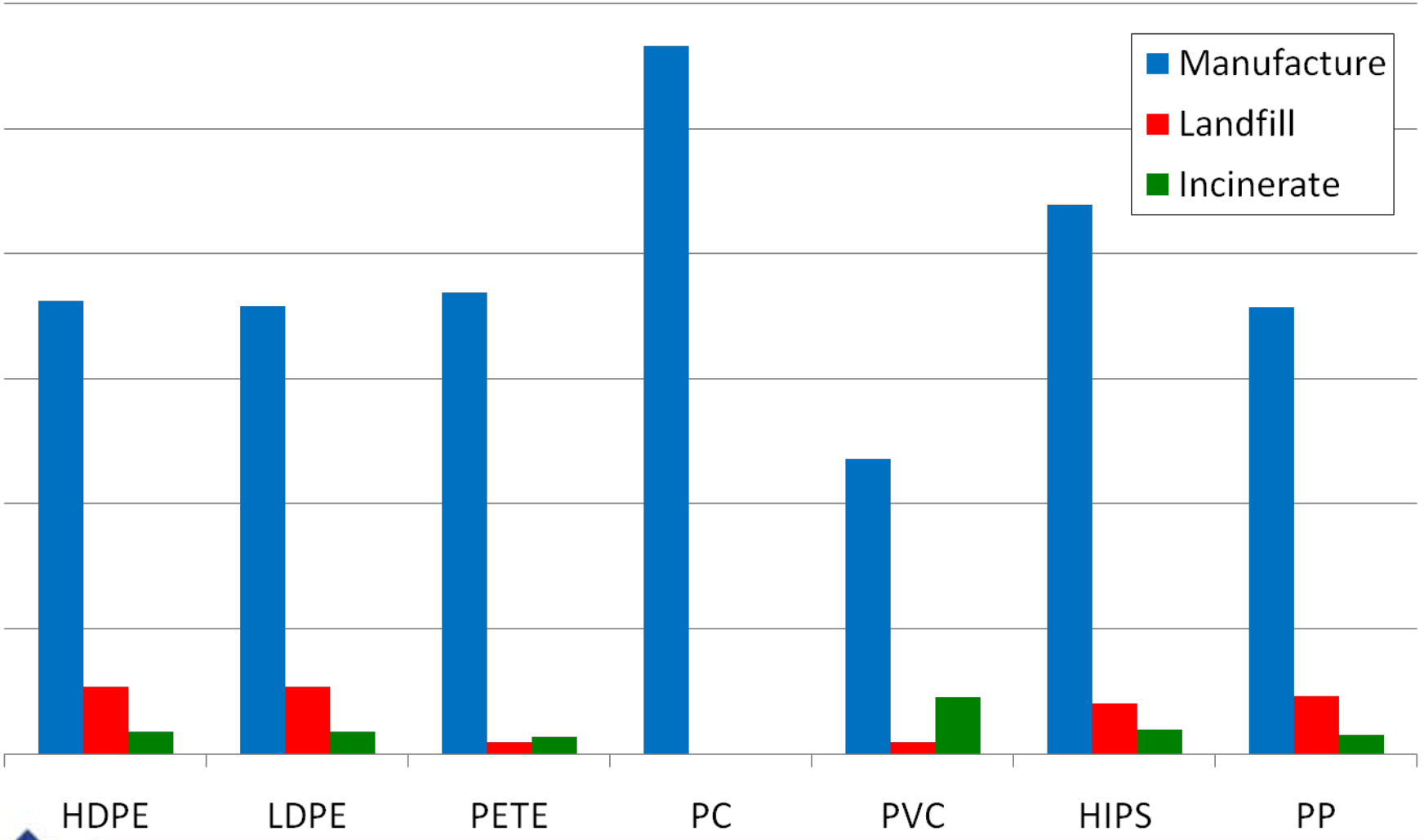
organic cotton stuffed with PC PET bottles

Life Cycle Assessment

- Tool used to assess the environmental impact of a product or material from cradle to grave
- Identifies processes which contribute most/least to the total environmental impact to focus decision making and change



Material Selection Example



Questions?

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