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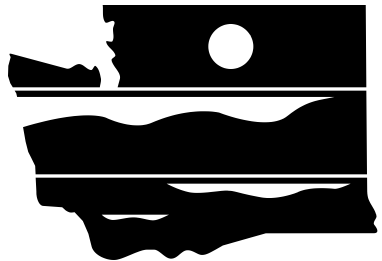
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DEPARTMENT OF
ECOLOGY
State of Washington

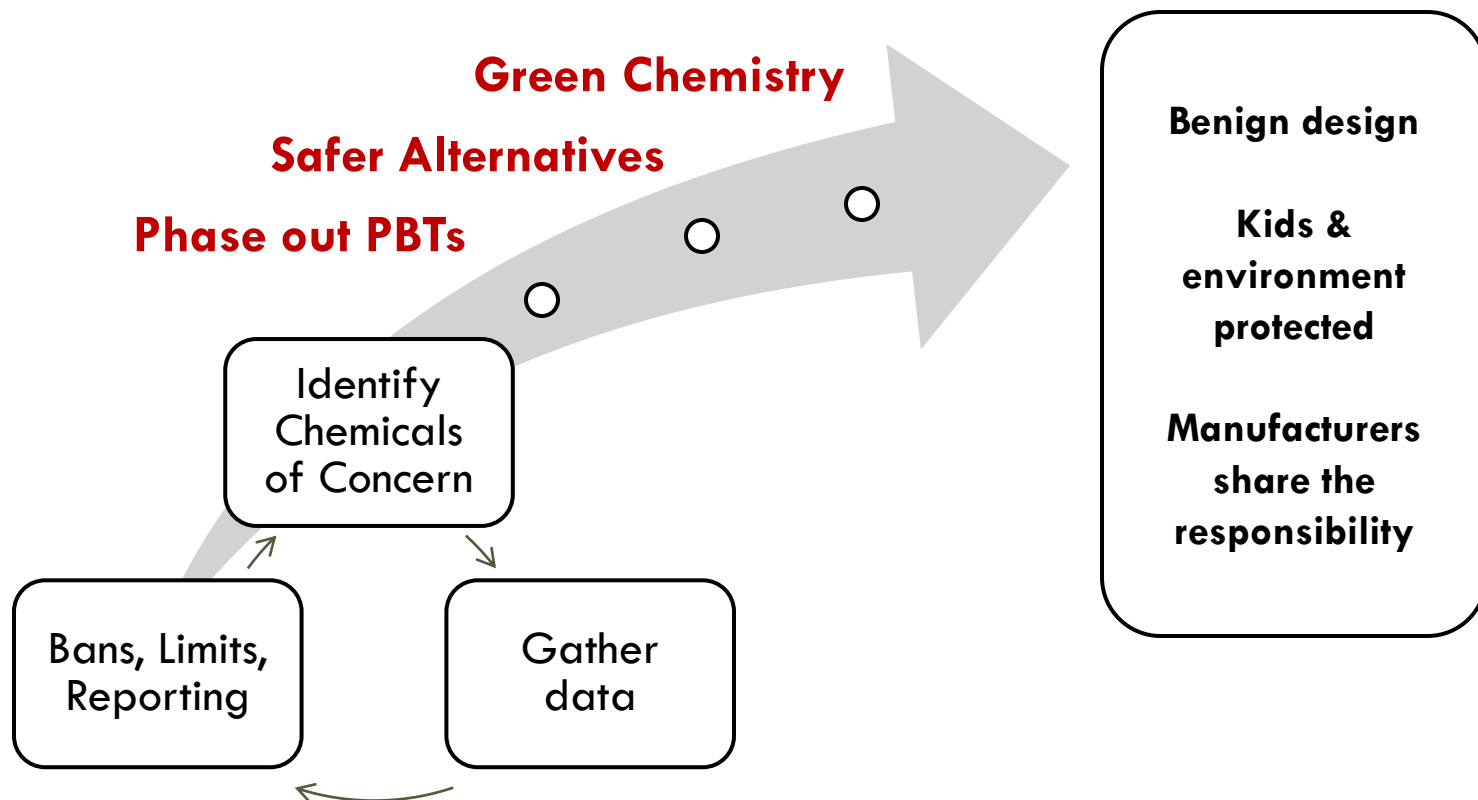
CHEMICALS IN PRODUCTS

ECOLOGY'S DATA AND POLICY EFFORTS

October 2013

Prevention

Averting toxic exposures and avoiding future costs is the smartest, cheapest and healthiest approach.



Ecology's Efforts

>>> BANS

PBDEs, including deca-BDE
in certain products

Bisphenol A in children's
bottles/cups, sports bottles

Copper in brake pads,
boat paint

Toxics in packaging

Lead in wheel weights

Coal tar sealants

>>> DATA COLLECTION

Children's Safe Product Act
reporting rule

Product testing

Brake pad law

>>> STAKEHOLDER PROCESSES

Chemical Action Plans for
Persistent, Bioaccumulative
Toxics (PBTs)

Alternatives assessment
guidance

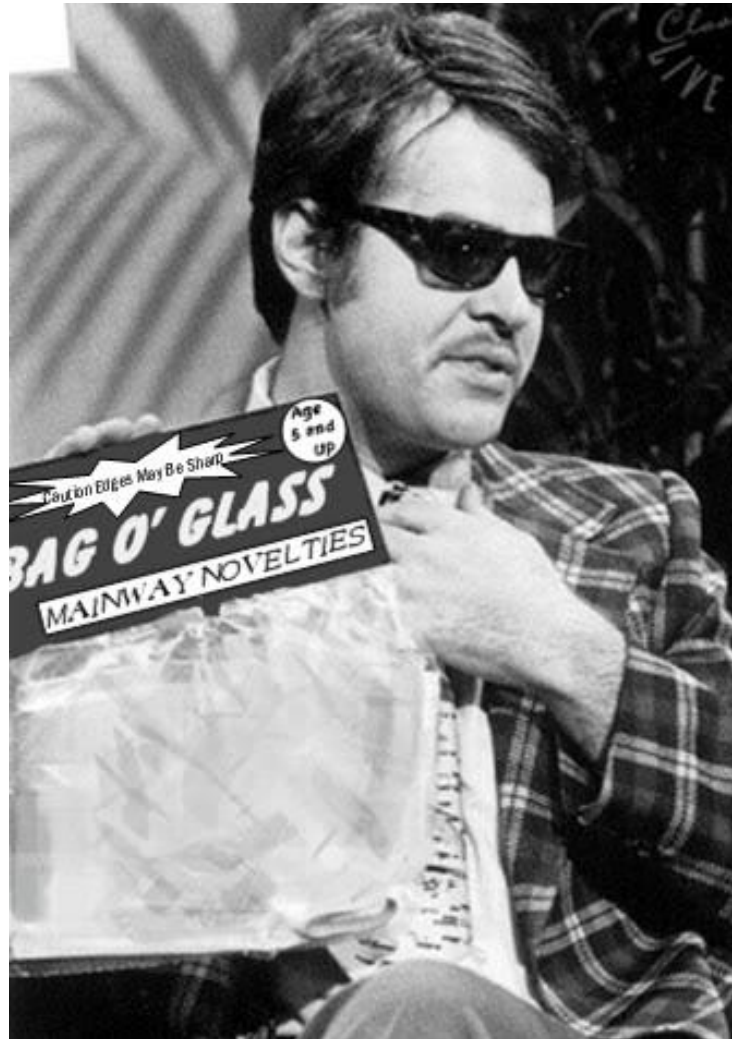
Green Chemistry Center



Children's Safe Product Act



Children's Safe Product Act



Children's Safe Product Act

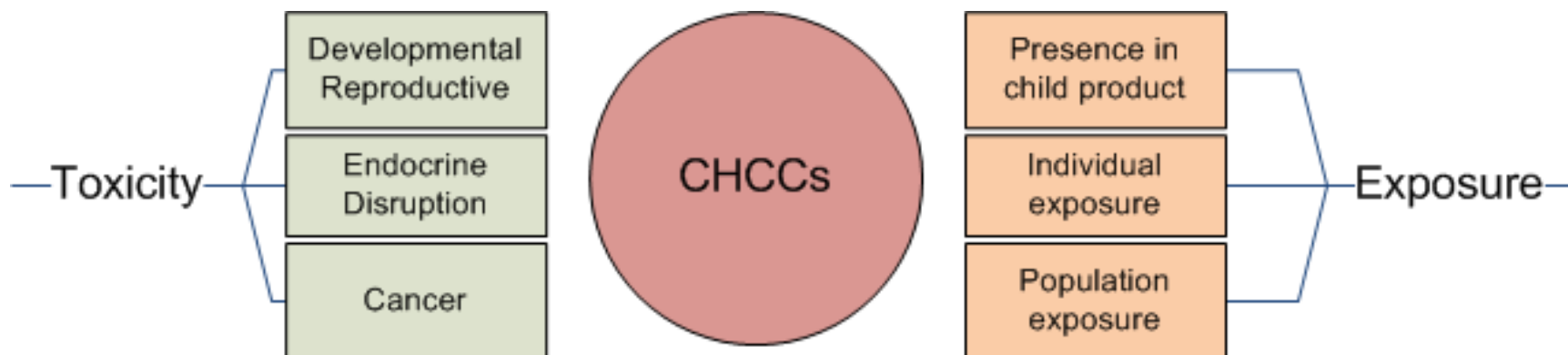
Definition of “children’s product”

- Toys
- Children’s Cosmetics
- Children’s Jewelry
- Children’s Clothing
- Child car seats
- Products intended to help a child with sucking or teething, to facilitate sleep, relaxation, or the feeding of a child

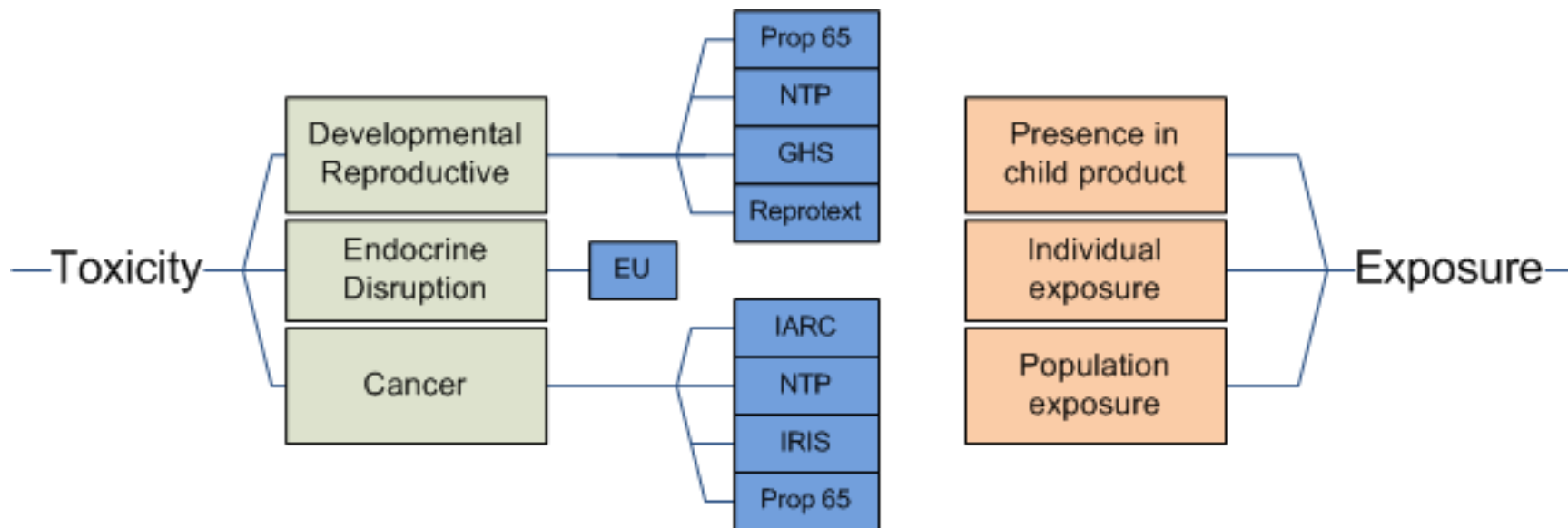
Requires manufacturers of children’s products to report if their products contain a Chemical of High Concern to Children (CHCC)

- List of 66 CHCCs established by rule

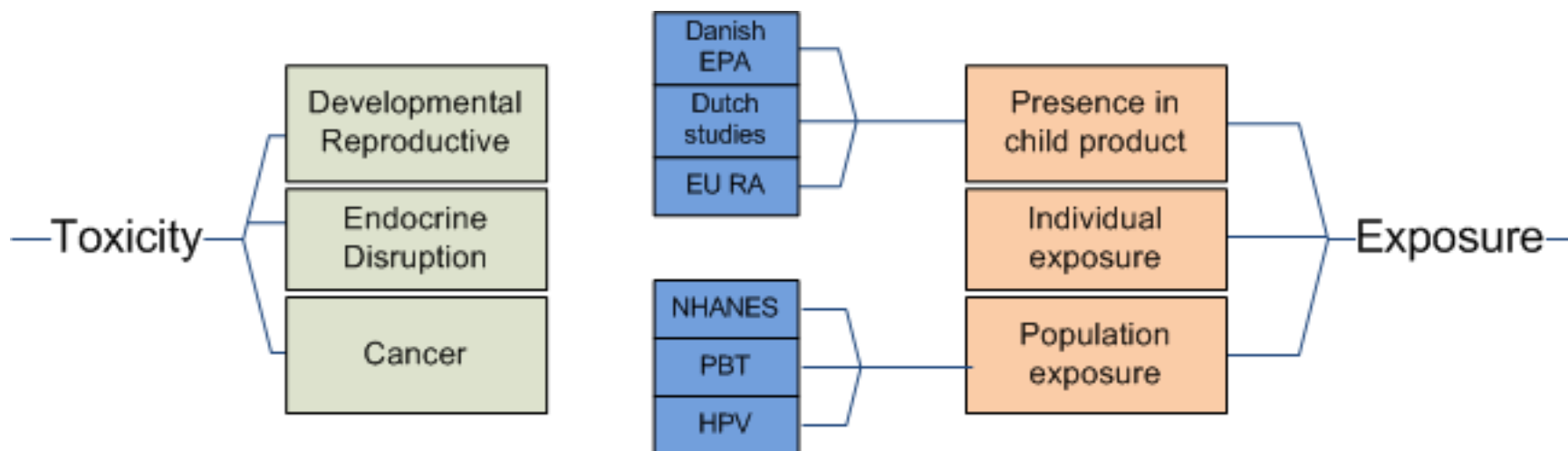
Development of the CHCC list



Development of the CHCC list



Development of the CHCC list

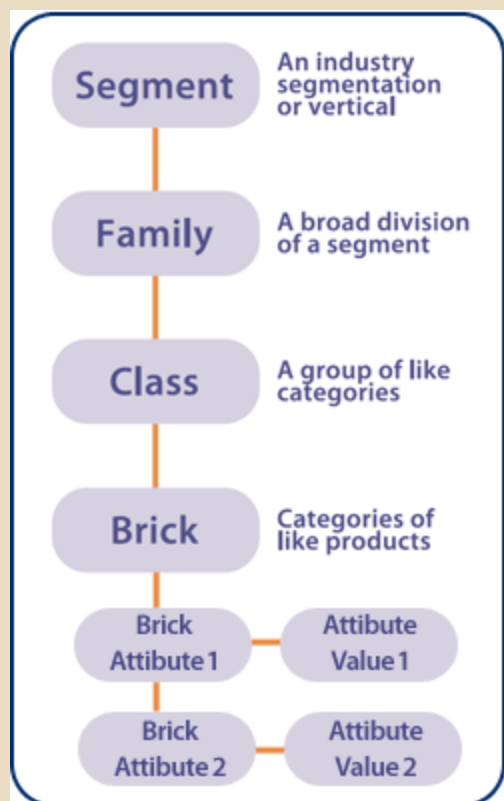


CSPA – phased-in reporting

Manufacturer Categories (US Aggregate Gross Sales)	Product Tier 1 •Intended to be put in mouth •Intended for on skin •Mouthable & for under 3	Product Tier 2 •Intended for prolonged skin contact (>1 hr) •Clothing, jewelry	Product Tier 3 •Intended for short skin contact (<1 hr) •Toys
Largest (\$1 billion+)	August 2012	February 2013	August 2013
Larger (\$250 million-\$1 billion)	February 2013	August 2013	August 2014
Medium (\$100 million-\$250 million)	August 2013	August 2014	August 2015
Small (\$5 million - \$100 million)	August 2014	August 2015	August 2016
Smaller (\$100,000-\$5 million)	August 2015	August 2016	August 2017
Tiny (>\$100,000)	August 2016	August 2017	August 2018

CSPA – reporting framework

Manufacturers report presence of CHCCs by product category and product component.



Segment

Arts/crafts/needlework

Baby care

Beauty/personal care

Clothing

Footwear

Household

Personal accessories

Toys/games

Example bricks

Artists paints/dyes, Artists pastels/crayons, Jewelry craft materials, Sand art supplies

Pacifiers/teething rings, Baby bath safety products, Baby changing mats, Baby furniture/transportation/safety

Cosmetic aids/accessories, Fragrances, Hair-shampoo, Dental cleansing, Lip Balms

Handwear, Headwear, Skirts, Socks, Trousers/Shorts, Sleepwear Variety Packs

Athletic footwear, Boots, Shoes

Cushions, Bed sheets/valances, Pillow cases

Anklets, Earrings, Necklaces, Rings, Tiaras

Board games, Practical jokes, Puppets, Developmental/educational toys, Outdoor games, Toy vehicles, Role play – kitchen toys

CSPA – reporting framework

Manufacturers report presence of CHCCs by product category and product component.

- Bio-based Materials (Animal or Plant based) ex. leather, horn, silk, wool
- Glass, Ceramic and Siliceous material
- Homogenous Mixtures (gels, creams, powders, liquids, adhesives, synthetic fragrances)
- Inks/Dyes/Pigments
- Metals (Including alloys)
- Surface coatings (paints, plating, waterproofing etc.)
- Synthetic Polymers (synthetic rubber, plastics, foams etc.)
- Textiles (synthetic fibers and blends)
- Other

CSPA – required information

Manufacturers must report the function of the CHCC and in what amount it is present.

Accelerator	Dispersant	Manufacturing additive	Solvent
Adhesive	Emulsifier	Mold/press release	Source contaminant
Antioxidant	Flame retardant	No function – contaminant	Stabilizer
Antistatic agent	Flavoring	pH adjustment	Stain prevention
Binding agent	Fragrance	Physical characteristics	Surfactant
Catalyst	Germicidal	Plasticizer/softener	Texture
Coloration/Pigments/ Dyes/Inks	Hardening	Preservative	UV stabilizer/ absorber
Component of plastic resin or polymer process	Inactive ingredient	Protective coating	Water proofing
Conductive material	Lubricant	Reinforcement/strength	

CSPA – required information

Manufacturers must report the function of the CHCC and in what amount it is present.

Reporting Ranges

Range 1: < 100 ppm and \geq PQL

Range 2: < 500 ppm and \geq 100 ppm

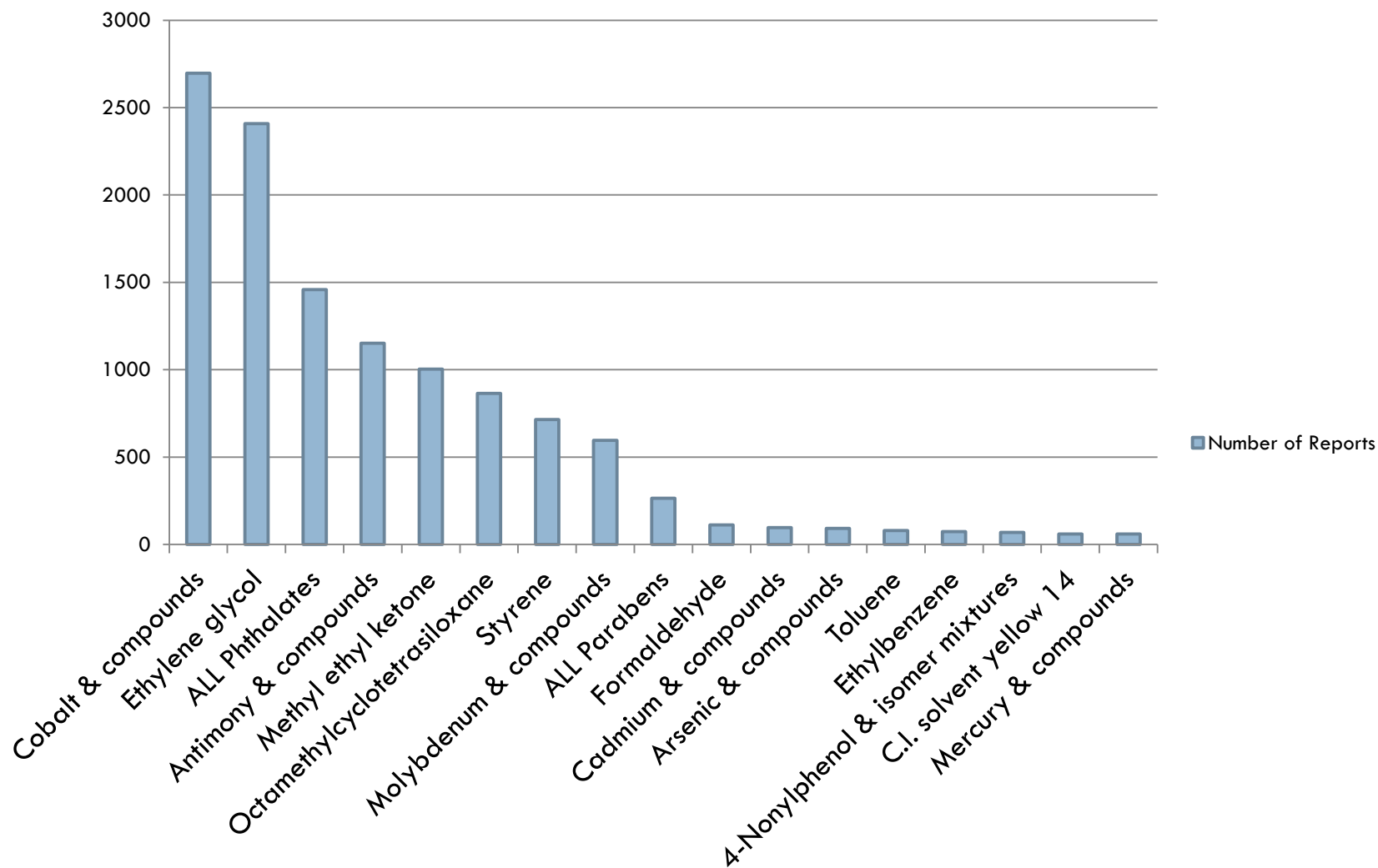
Range 3: < 1000 ppm and \geq 500 ppm

Range 4: < 5000 ppm and \geq 1000 ppm

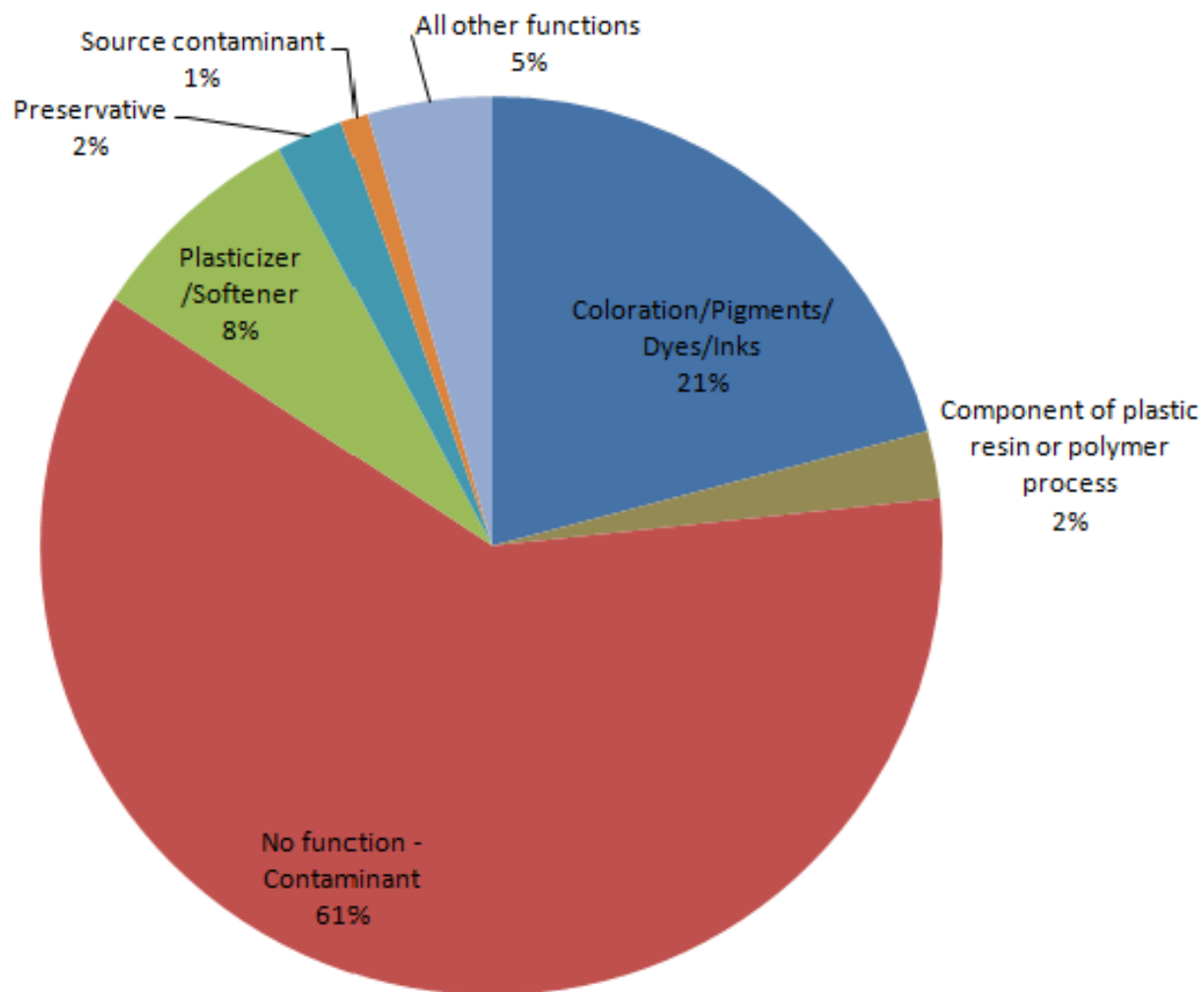
Range 5: < 10,000 ppm and \geq 5000 ppm

Range 6: \geq 10000 ppm

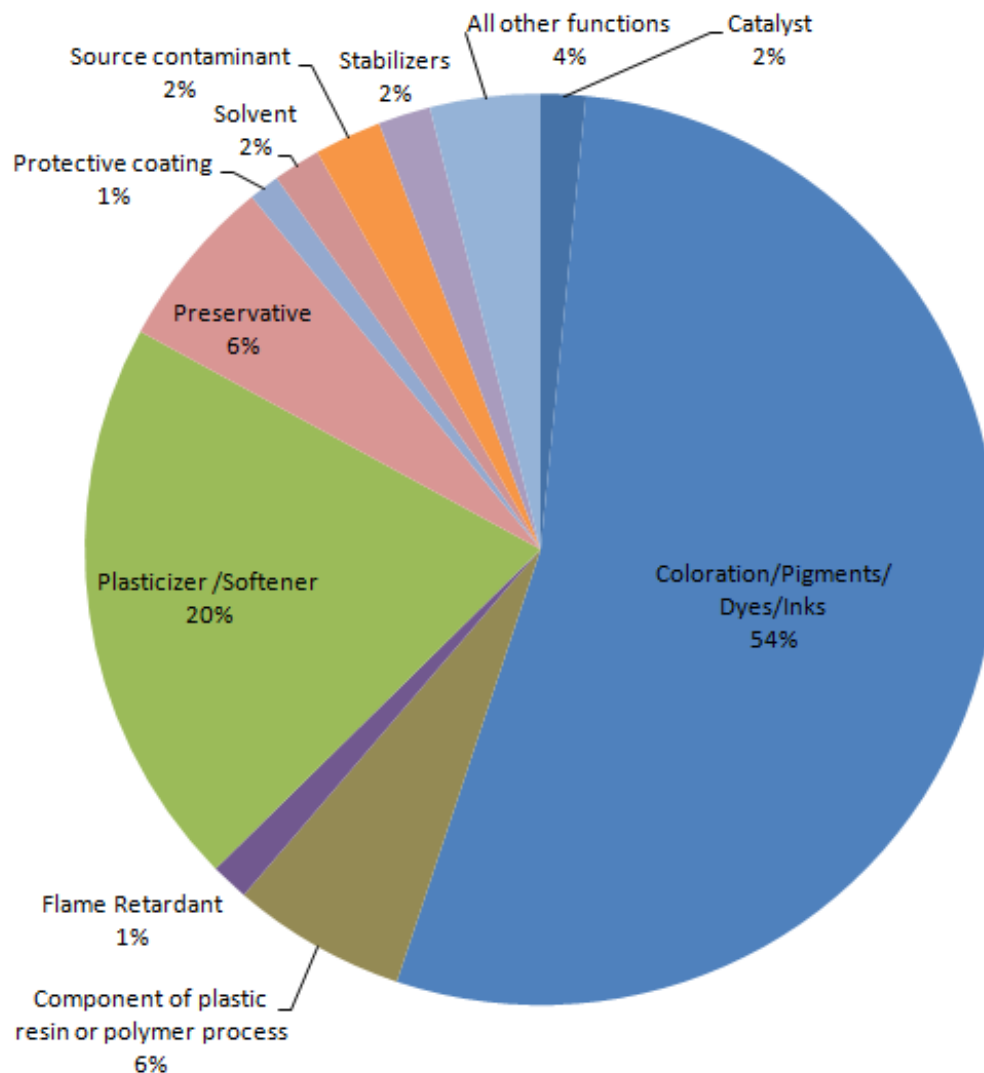
Reports per chemical



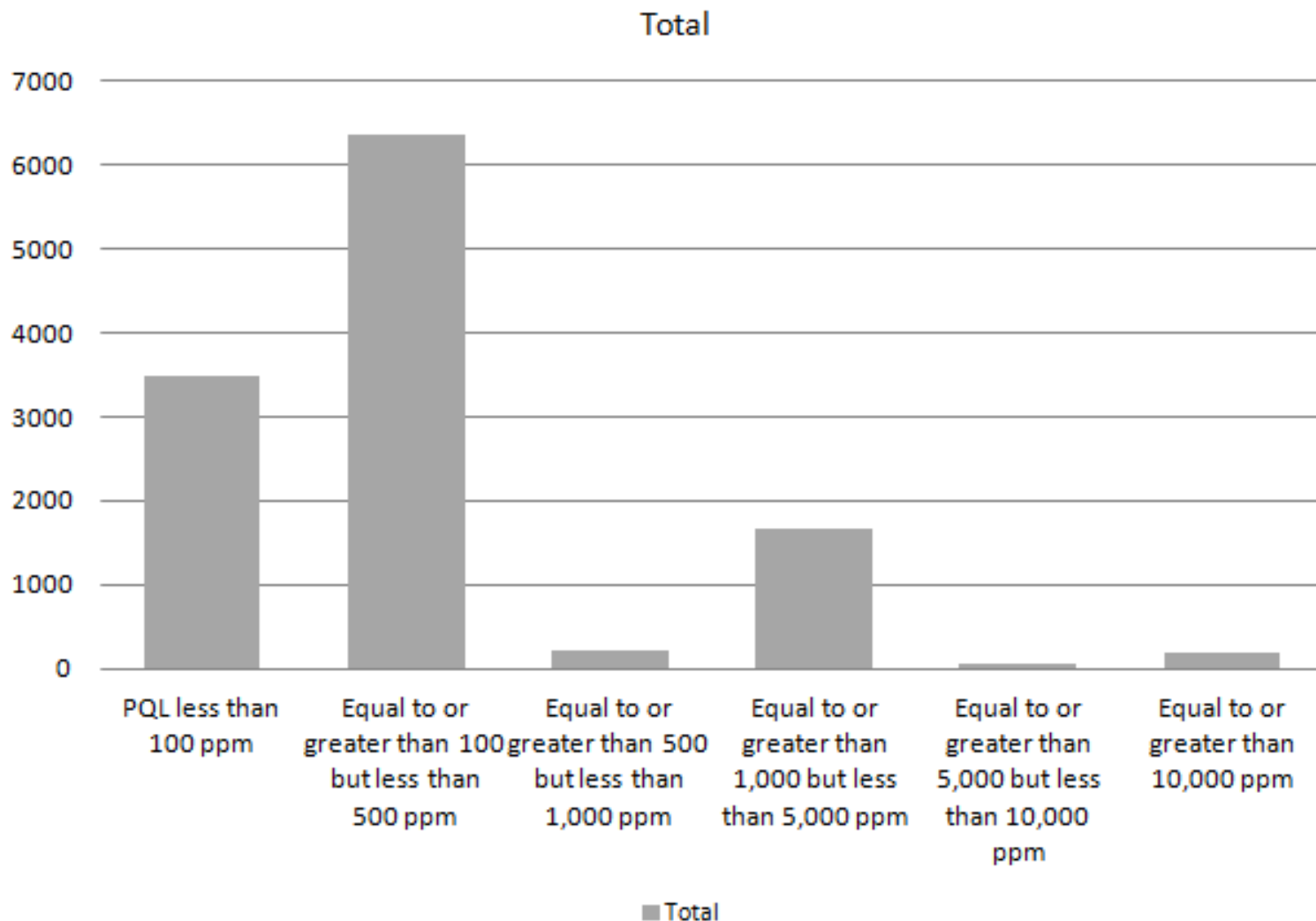
Reports per function



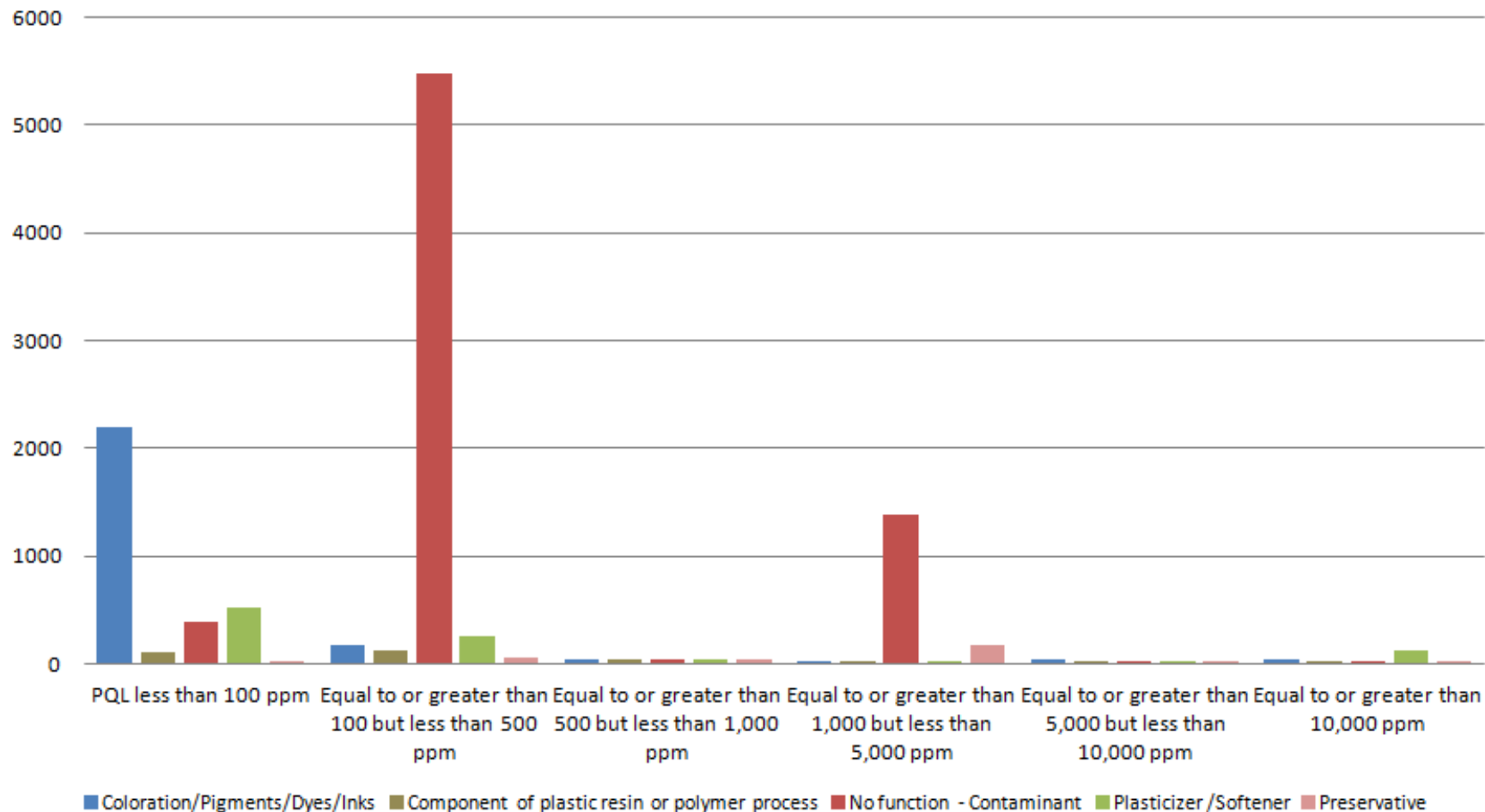
Reports per function minus contaminants



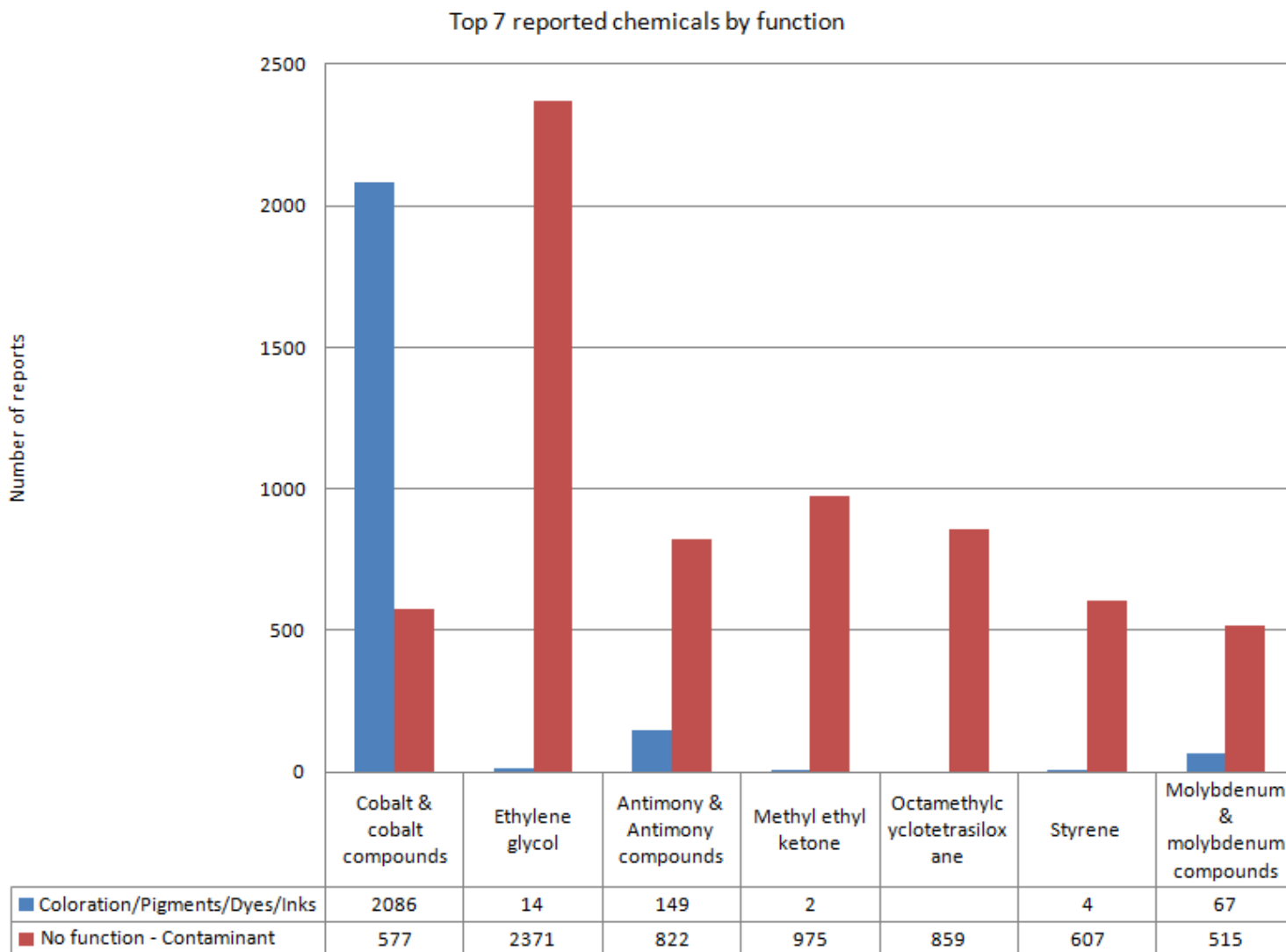
Reports per concentration category



Reports per concentration category by function

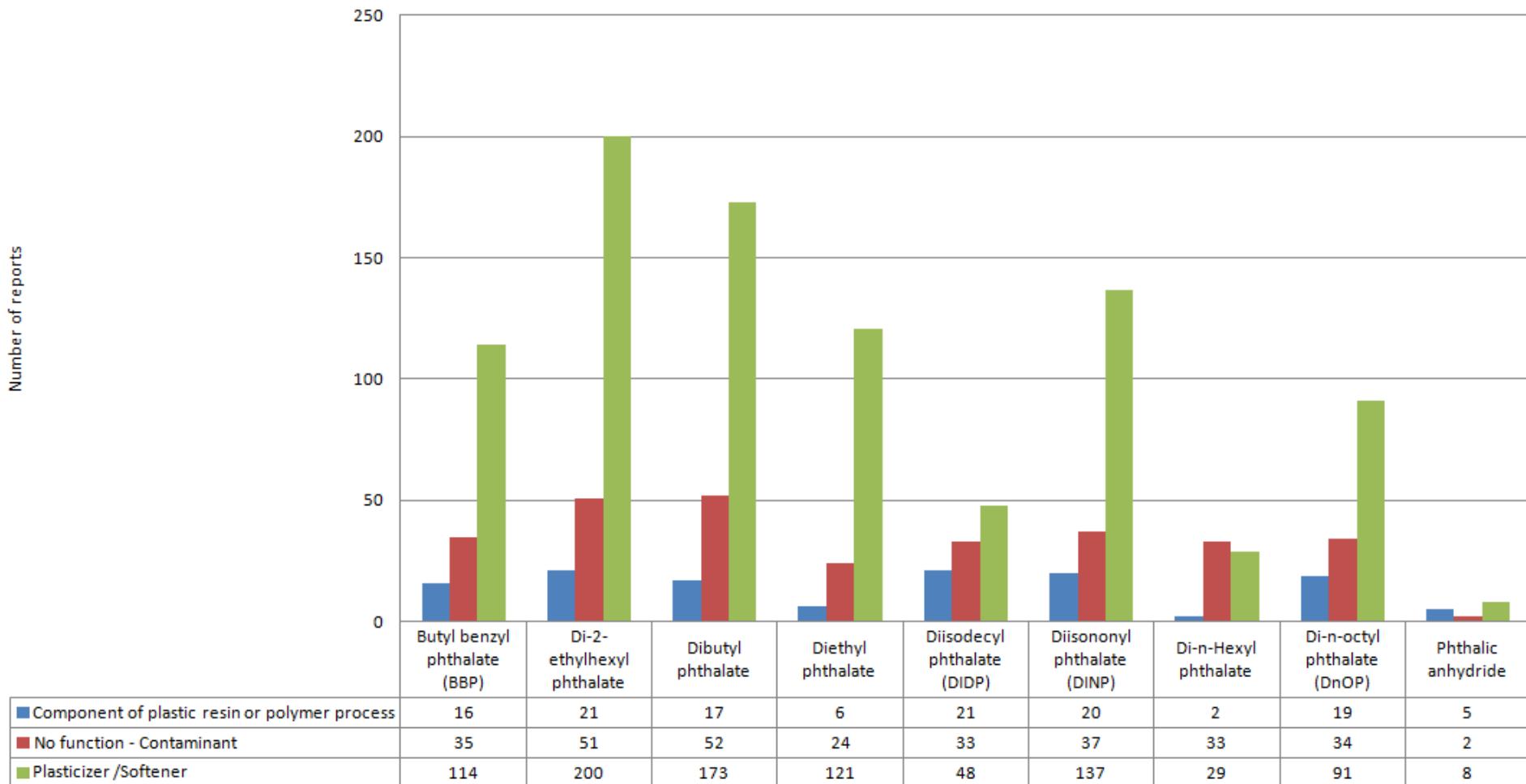


Top 7 reported chemicals by top functions

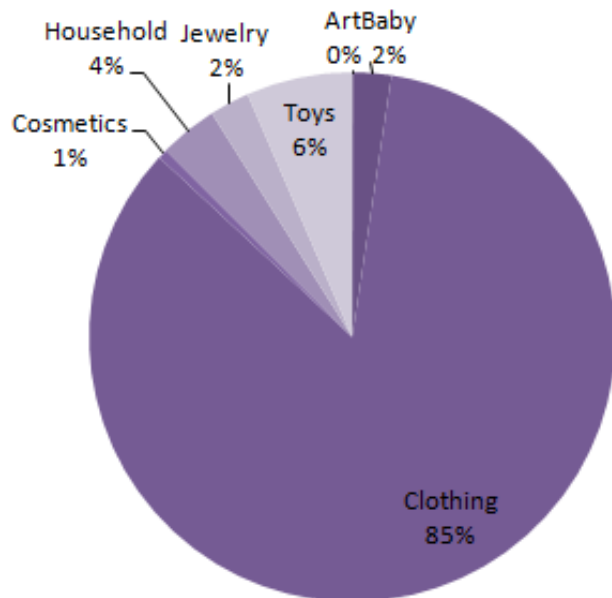


Phthalates by top functions

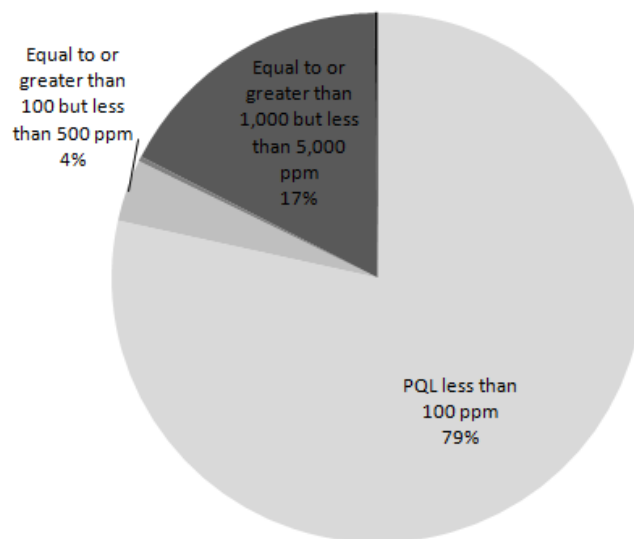
Phthalates by function



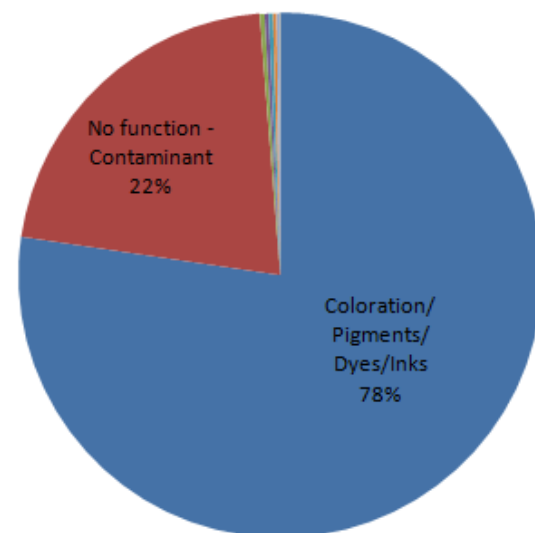
Cobalt - product types



Cobalt - concentrations

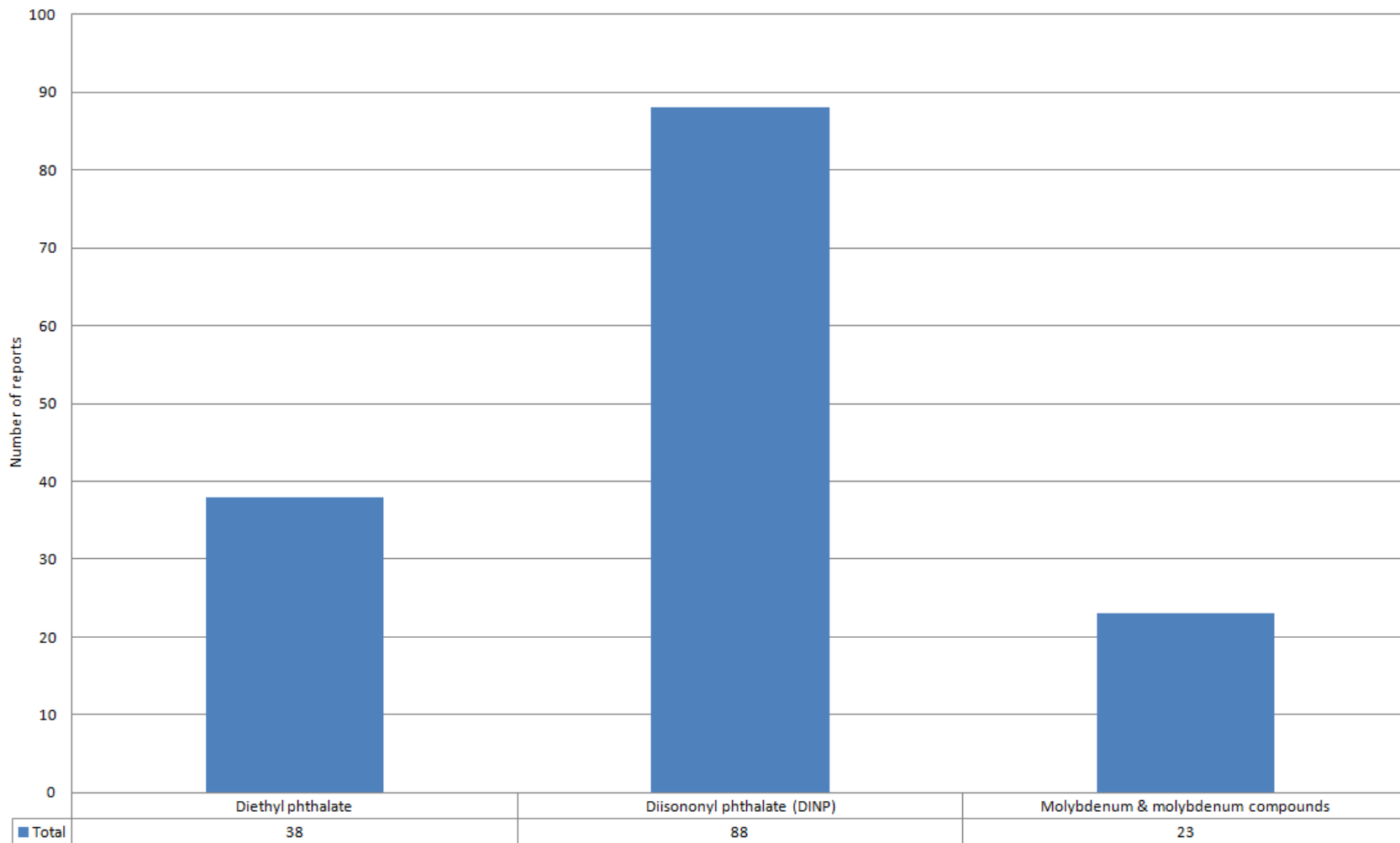


Cobalt - function



Top 3 chemicals reported at high levels

Top 3 chemicals reported above 10,000 ppm



Product testing

Testing children's products to assure compliance with the Children's Safe Product Act Reporting Rule
(WAC 173-334; Ch. 70.240 RCW)

Lab budget	\$168,000 (~600 samples) Grant funding from Attorney General settlement with Mattel
Target chemicals	Parabens, phthalates, metals, formaldehyde, volatile organic compounds
Target products	Children's cosmetic & personal care products, children's toys, children's jewelry, packaging from consumer and children's products
Final reports	November 2013

Ecology is currently developing a product testing database to facilitate public access to data from product testing projects.

Parabens

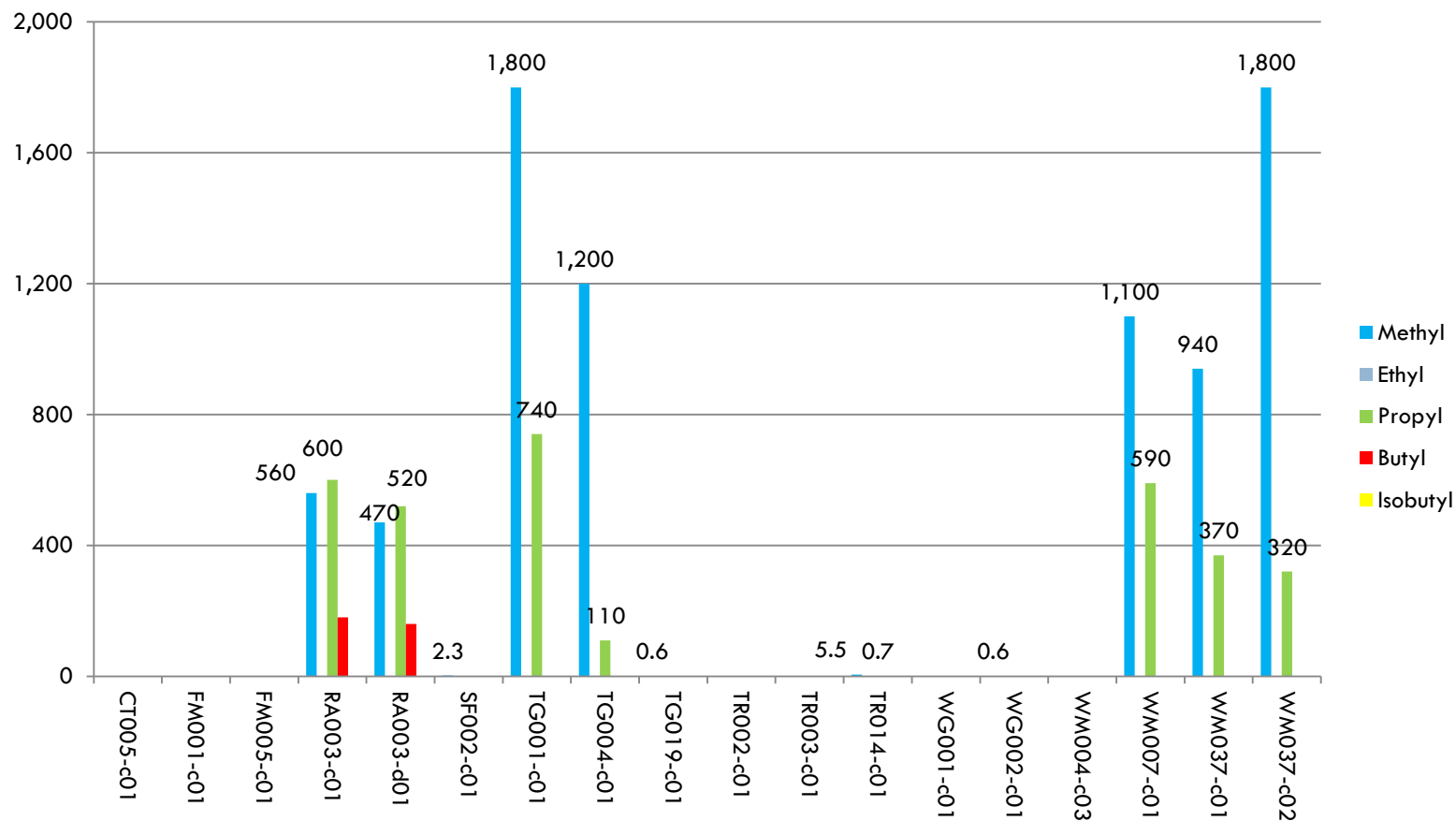
Parabens are the most widely used preservatives in cosmetic products. Various parabens and paraben mixtures are intentionally added to thousands of cosmetic products.

All five parabens on the list of Chemicals of High Concern to Children have been classified as Category 1 endocrine disruptors by the European Union.

Category	Number	Percent
Baby and bath accessories	16	37.2%
Cosmetics & fragrances	5	11.6%
Lip balm & gloss	13	30.2%
Halloween (makeup)	7	16.3%
Miscellaneous	2	4.7%

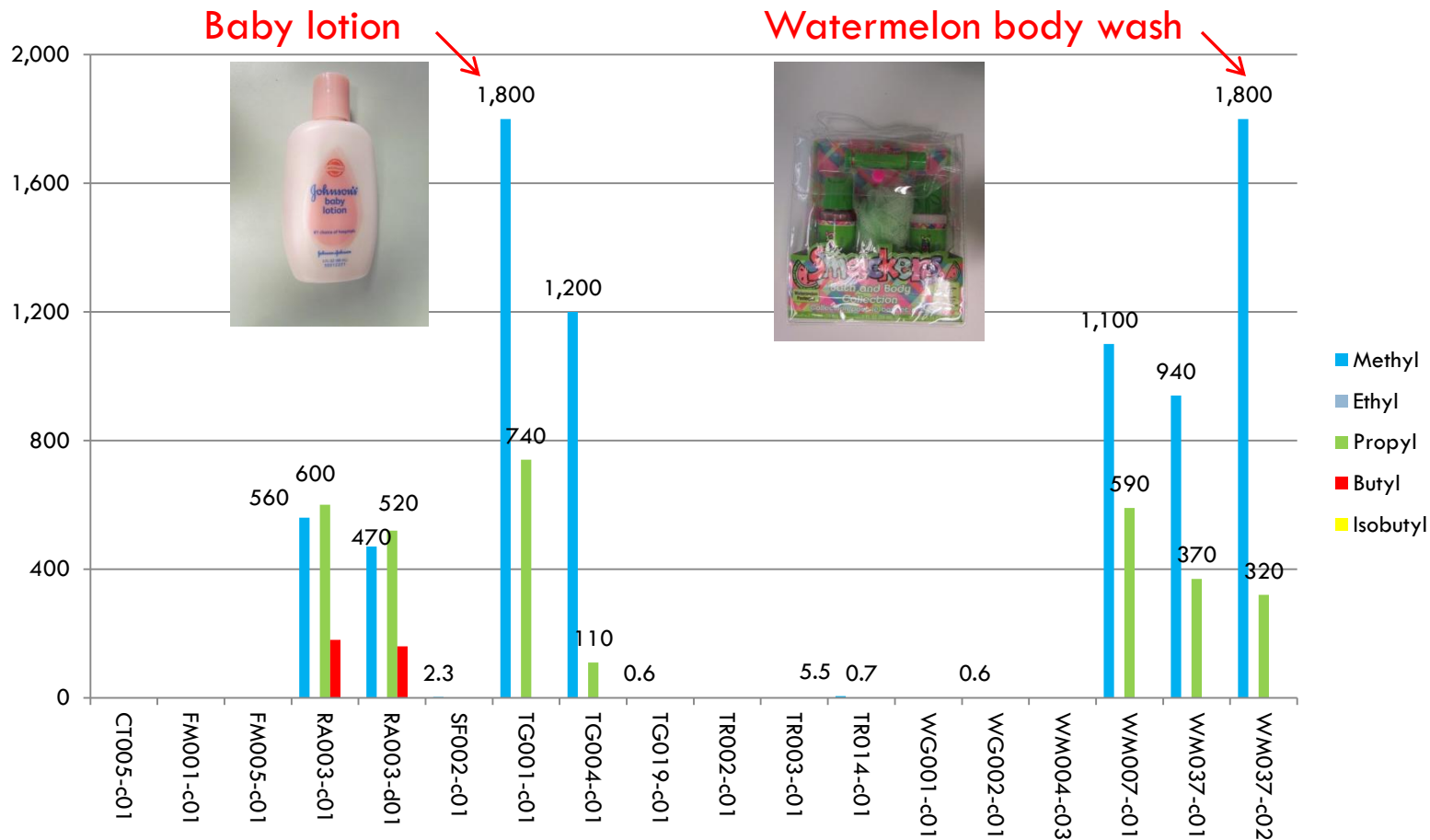
Parabens – baby & bath

parts per million in product component

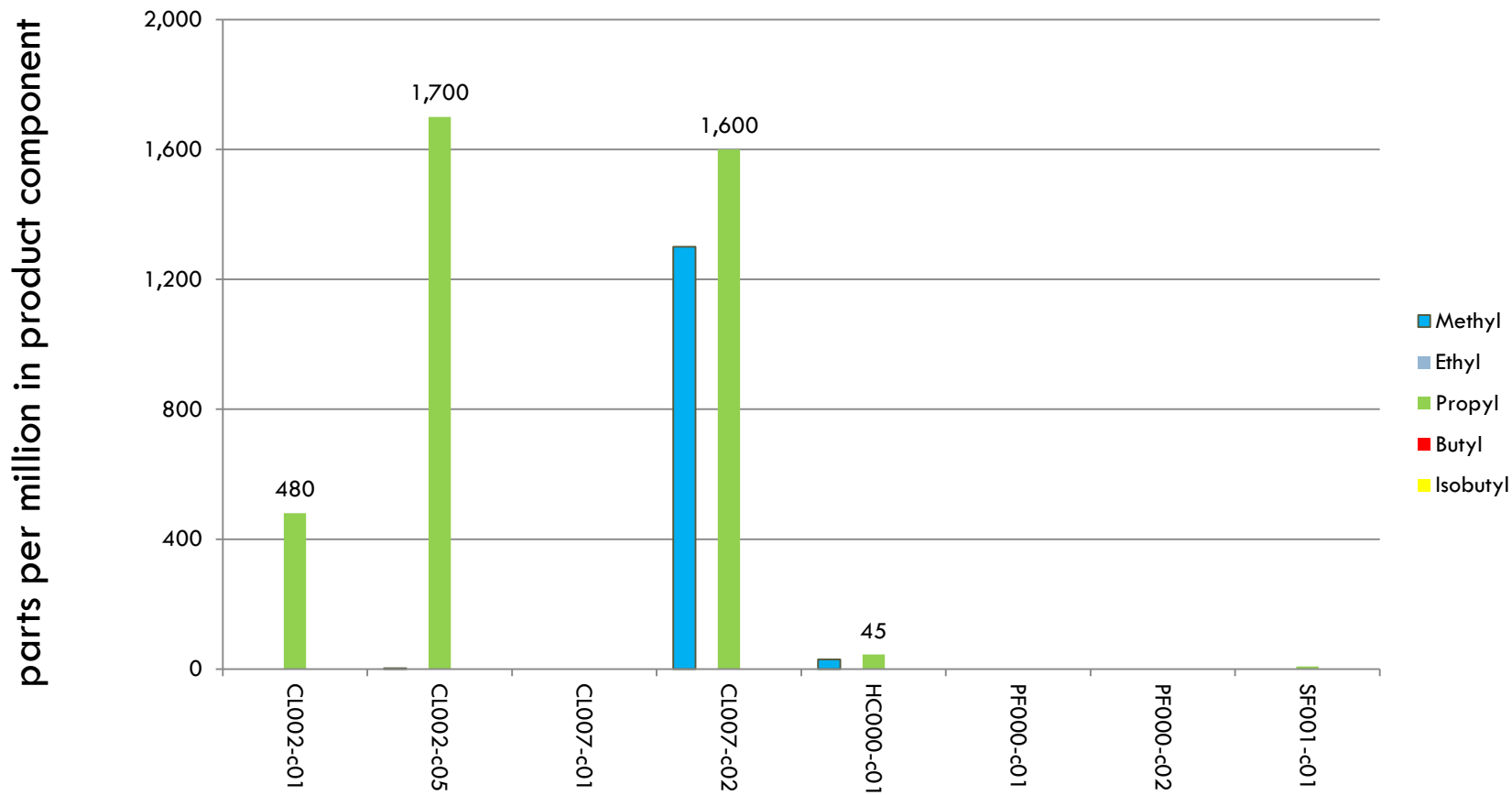


Parabens – baby & bath

parts per million in product component

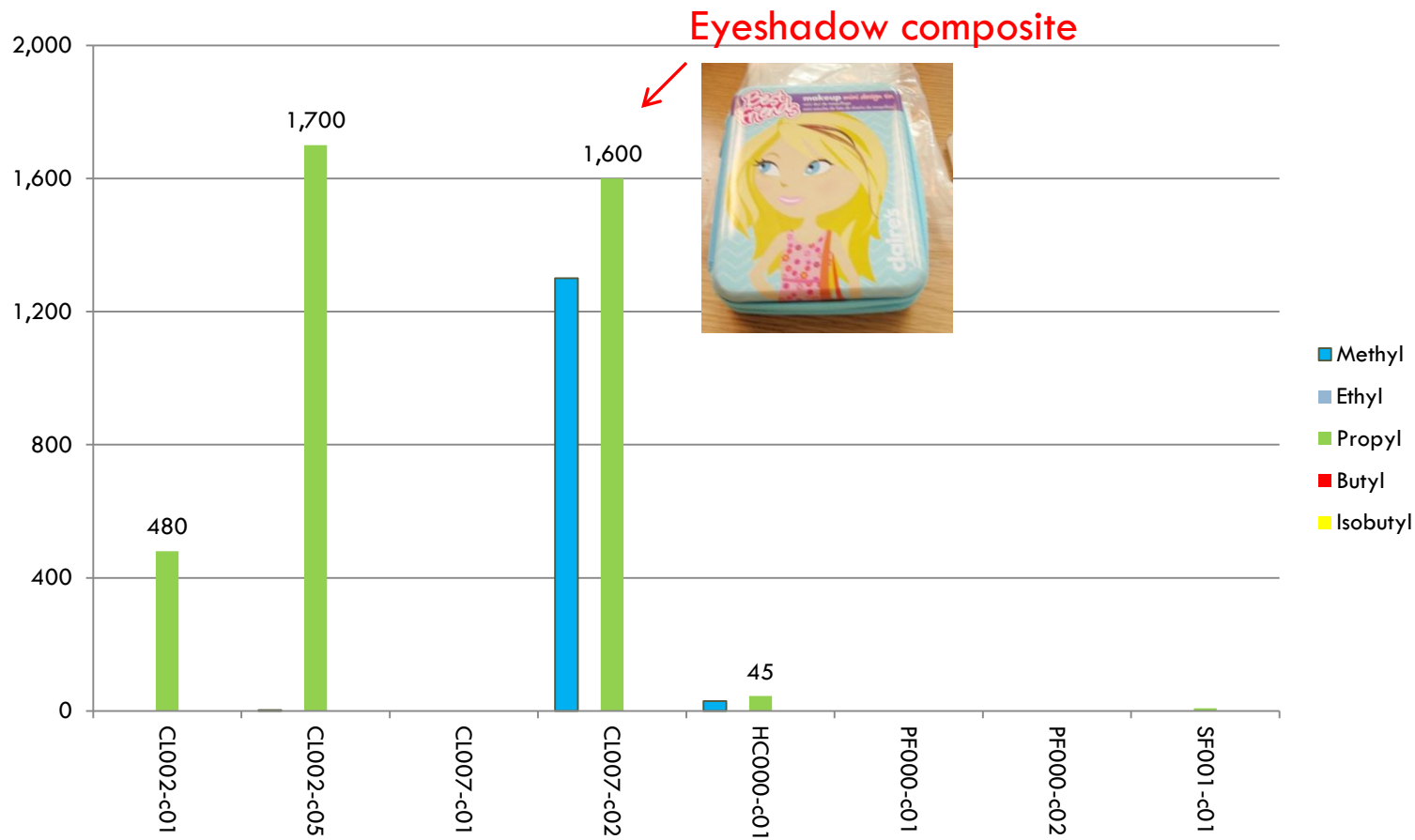


Parabens – cosmetics/fragrances

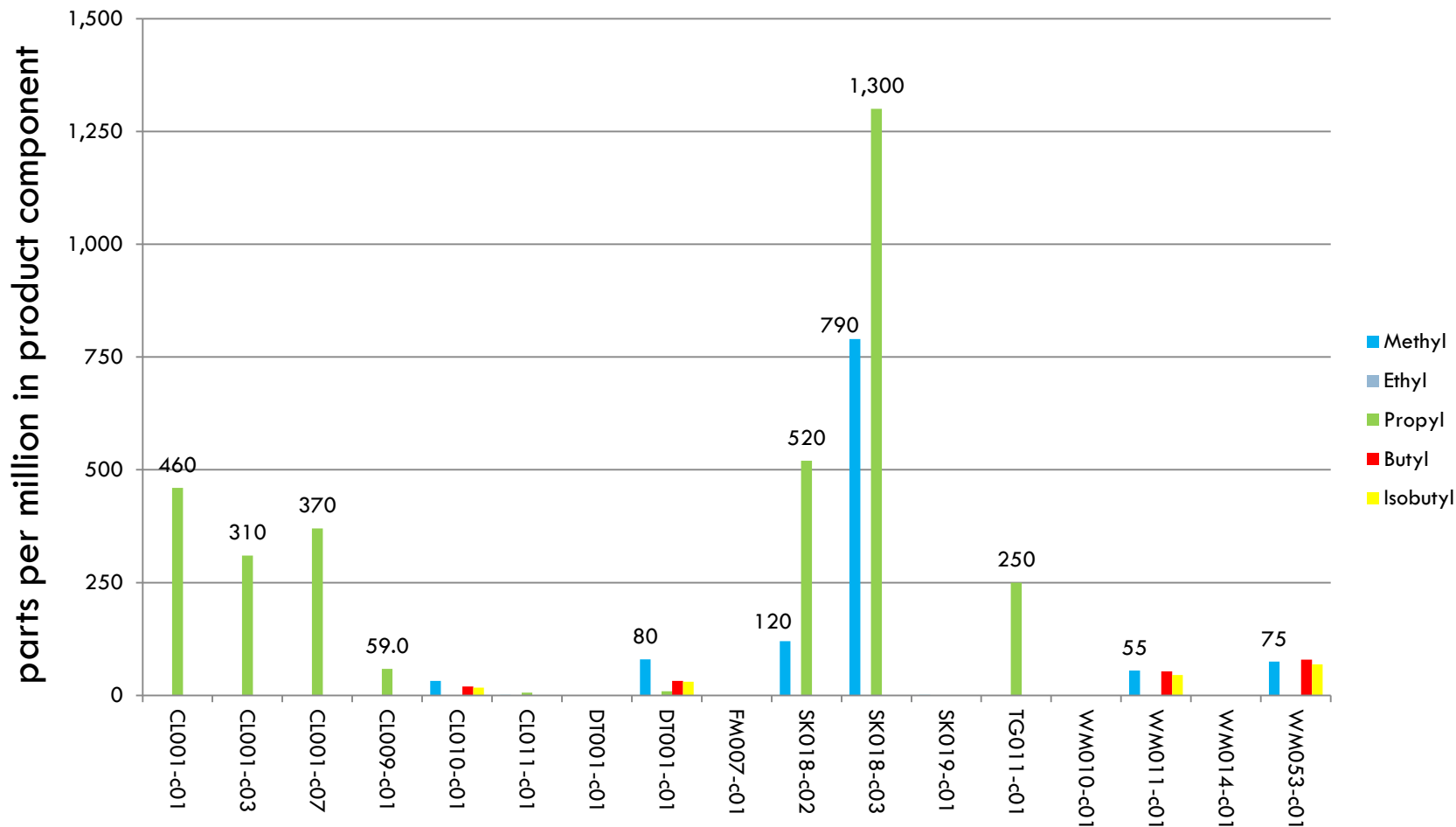


Parabens – cosmetics/fragrances

parts per million in product component

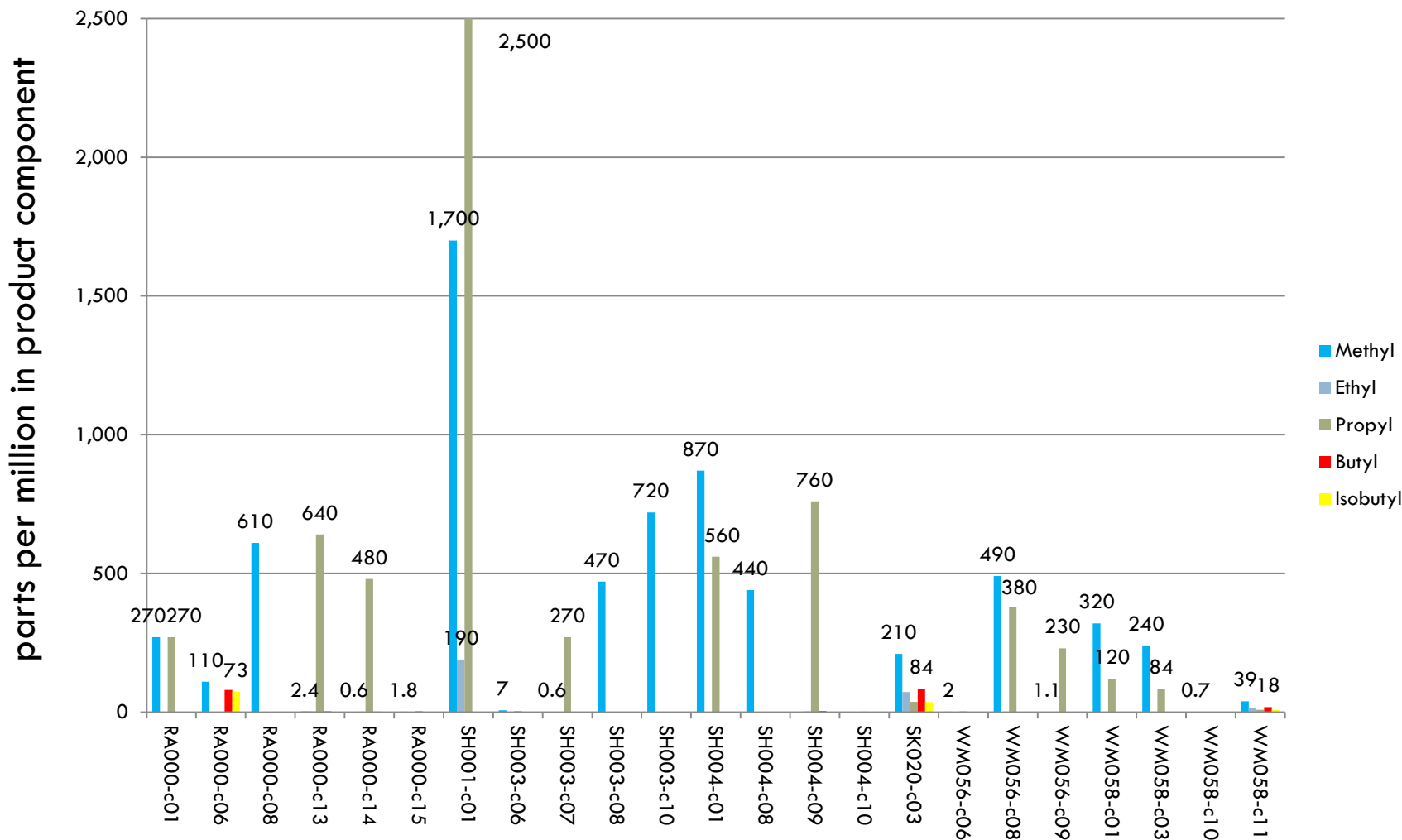


Parabens – lip balm/gloss

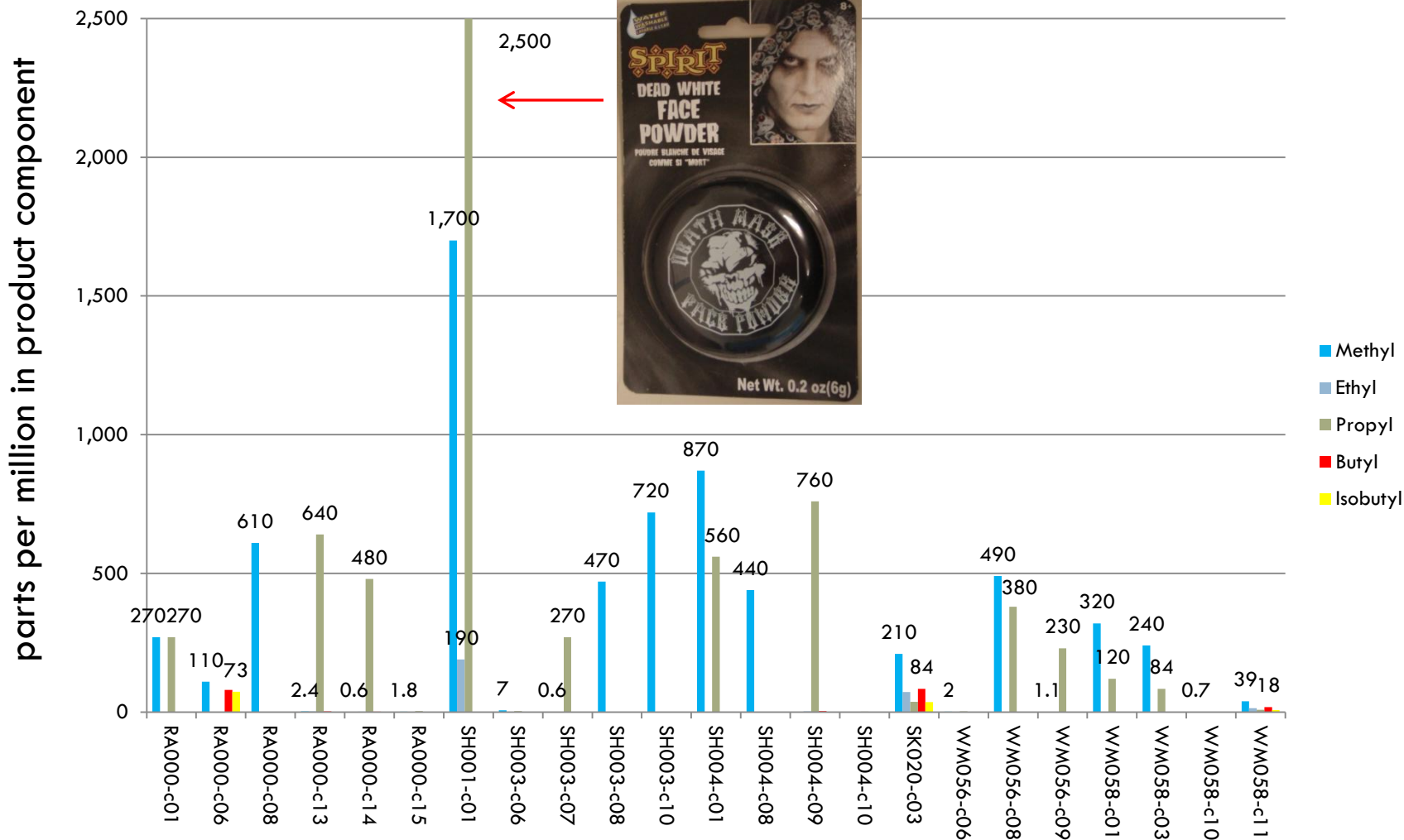




Parabens – Halloween makeup



Parabens – Halloween makeup



Parabens – conclusions

Conclusions:

- Parabens can be analyzed at low levels in a wide variety of products
- Found in appreciable levels in many products mouthed by children or applied to their skin
- Halloween makeup contained highest levels and greatest incidence of detection

Phthalates – products tested

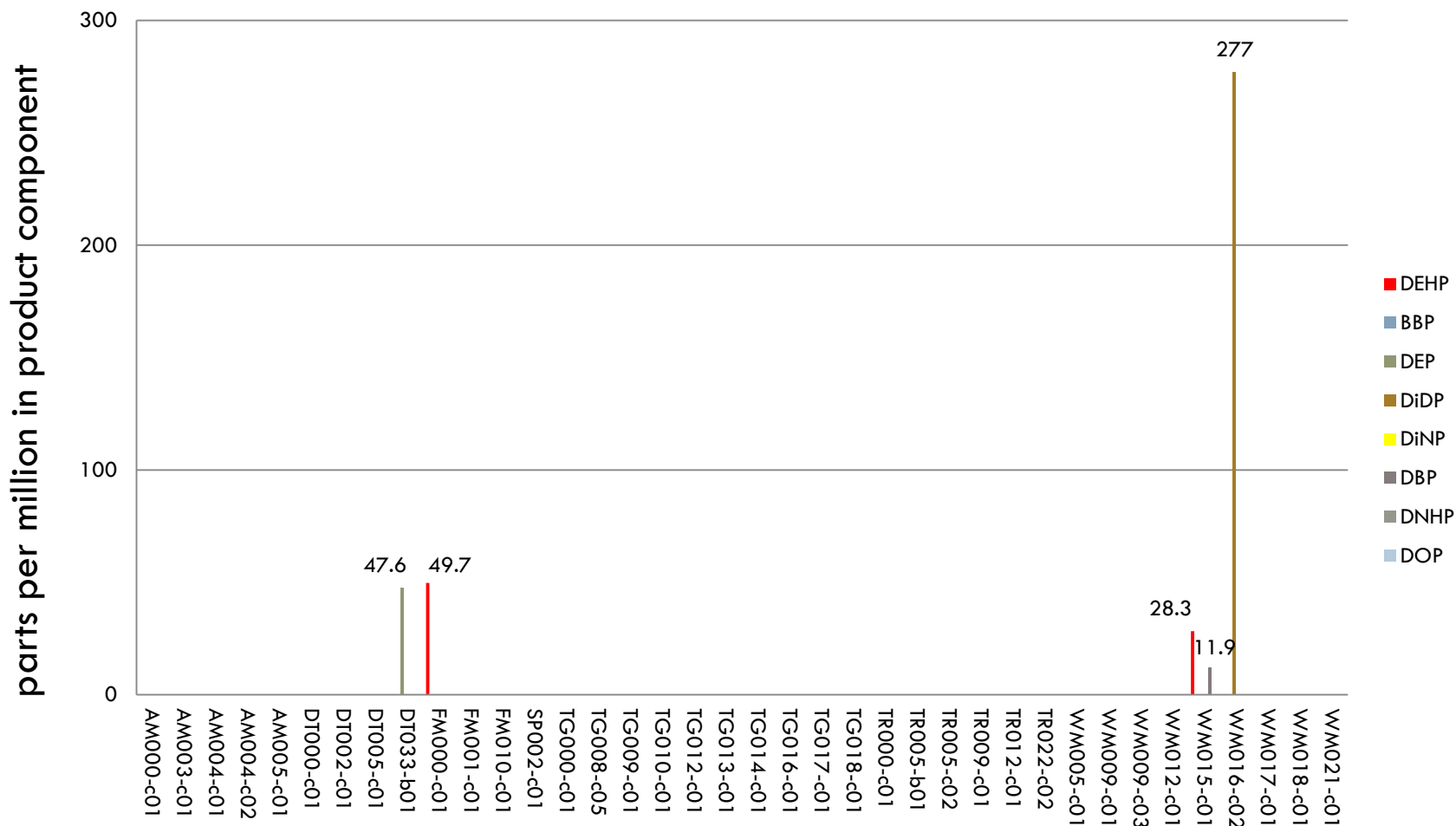
Phthalates are widely used as plasticizers to soften plastics.

There are 9 phthalates on the list of Chemicals of High Concern to Children. They are listed for concerns about developmental toxicity, reproductive toxicity, endocrine disruption. **Only 6 of these phthalates are banned by federal law above 1000ppm.**

Category	Number	Percent
Art	5	5.8%
Baby	35	40.7%
Bath	15	17.4%
Cosmetics	7	8.1%
Fragrance	12	14.0%
Halloween items	5	5.8%
Shoes	7	8.1%

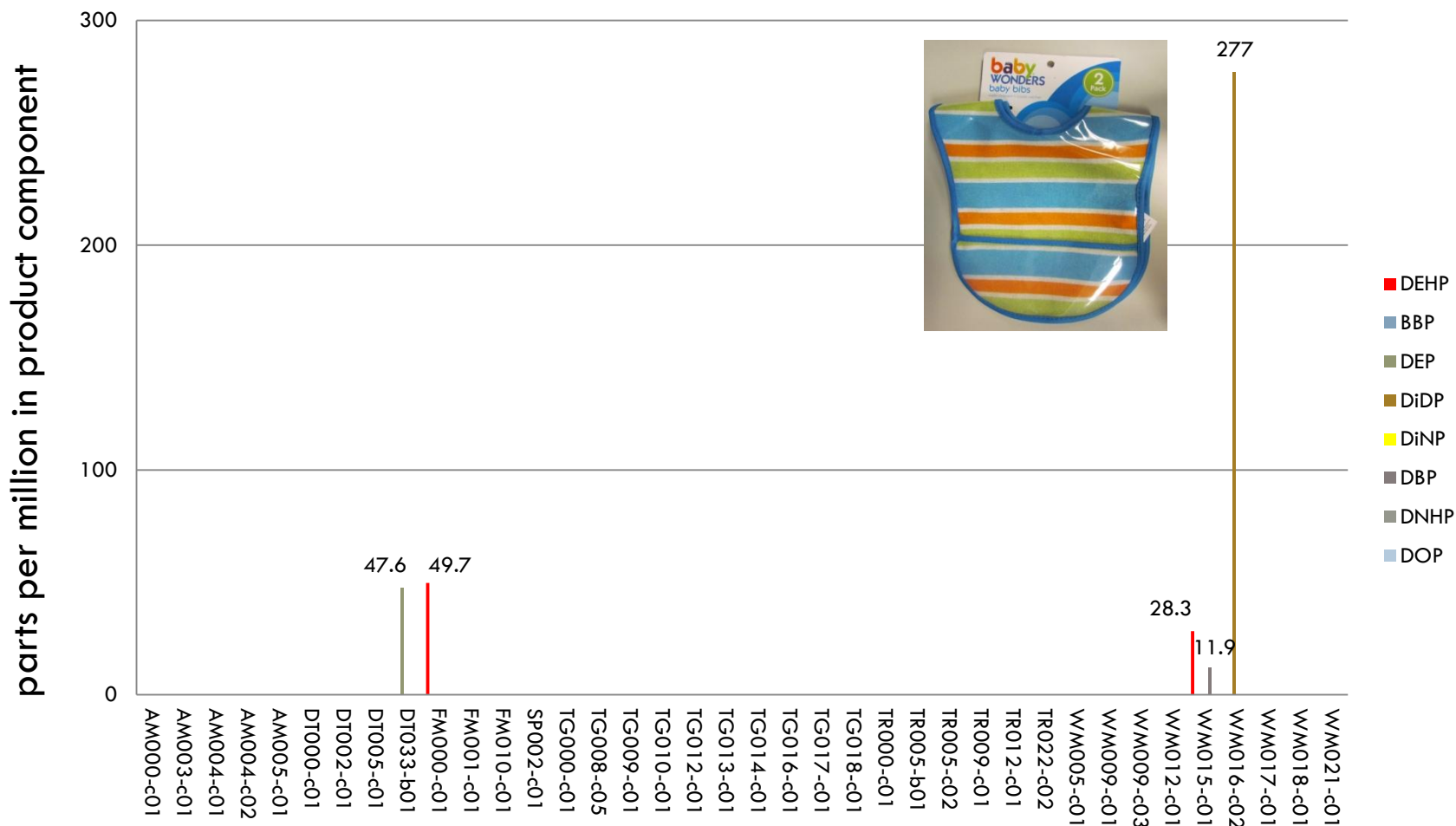
Phthalates – baby products

Baby Products



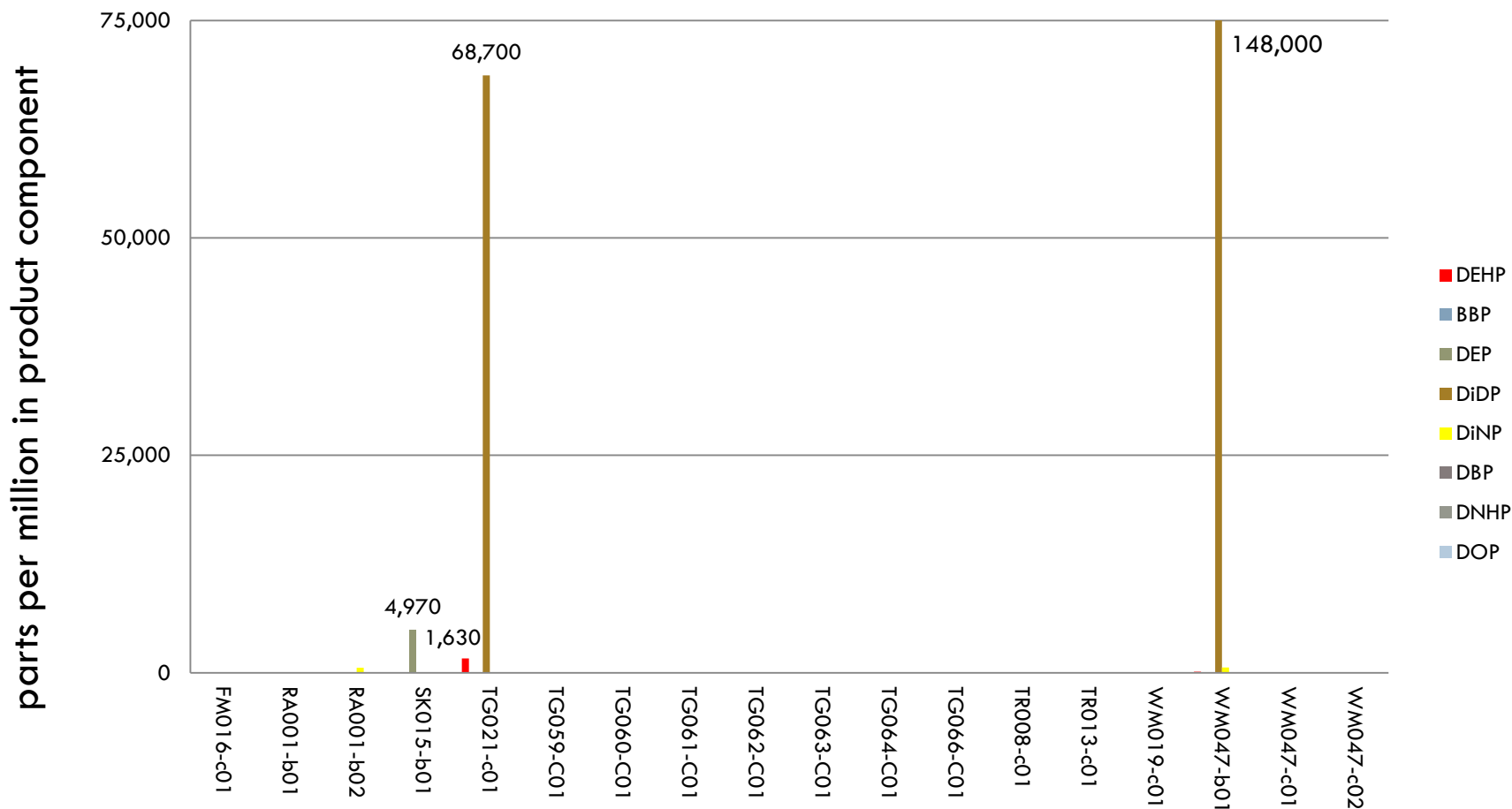
Phthalates – baby products

Baby Products



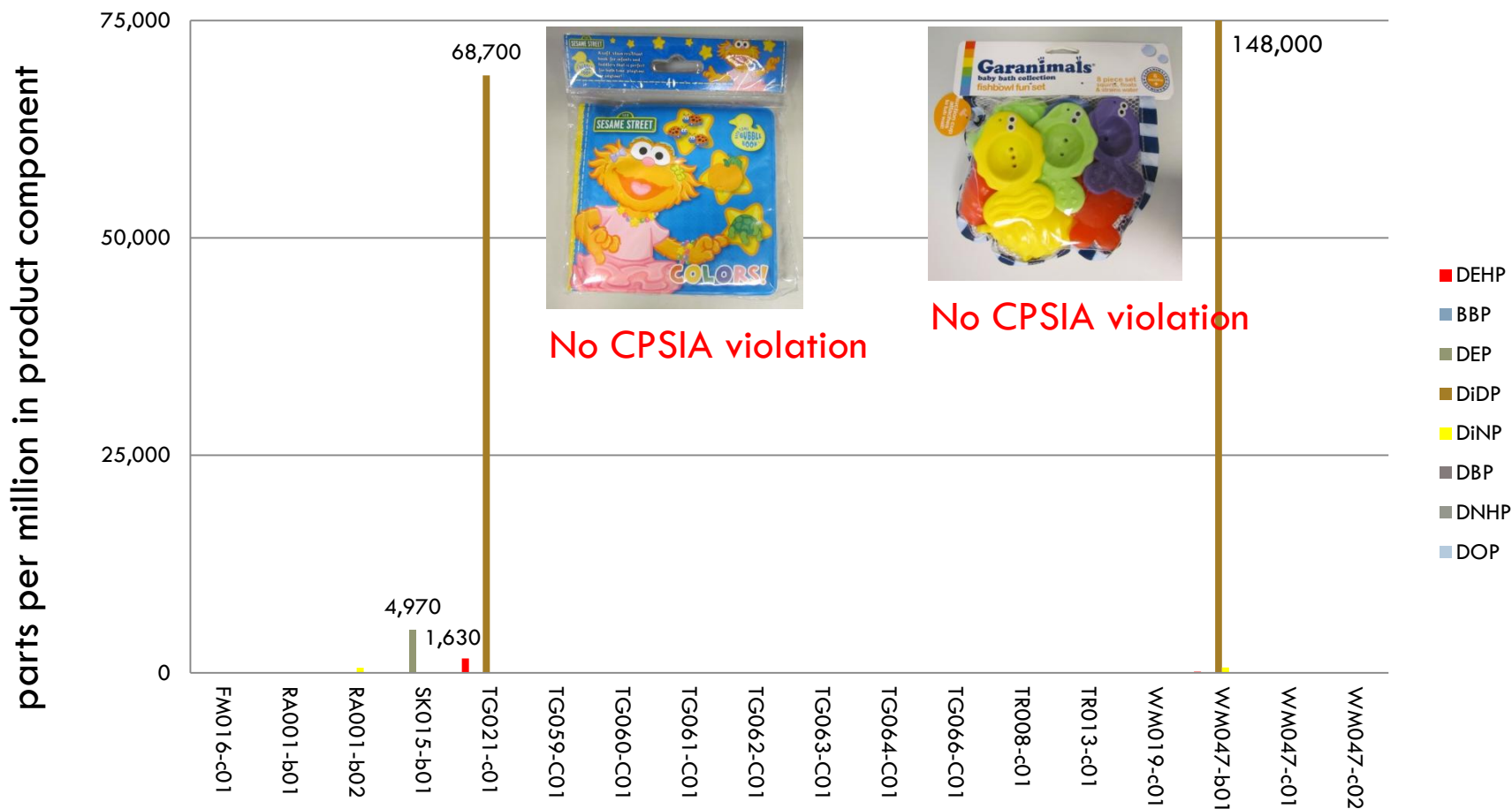
Phthalates – bath products

Phthalates in Bath Products



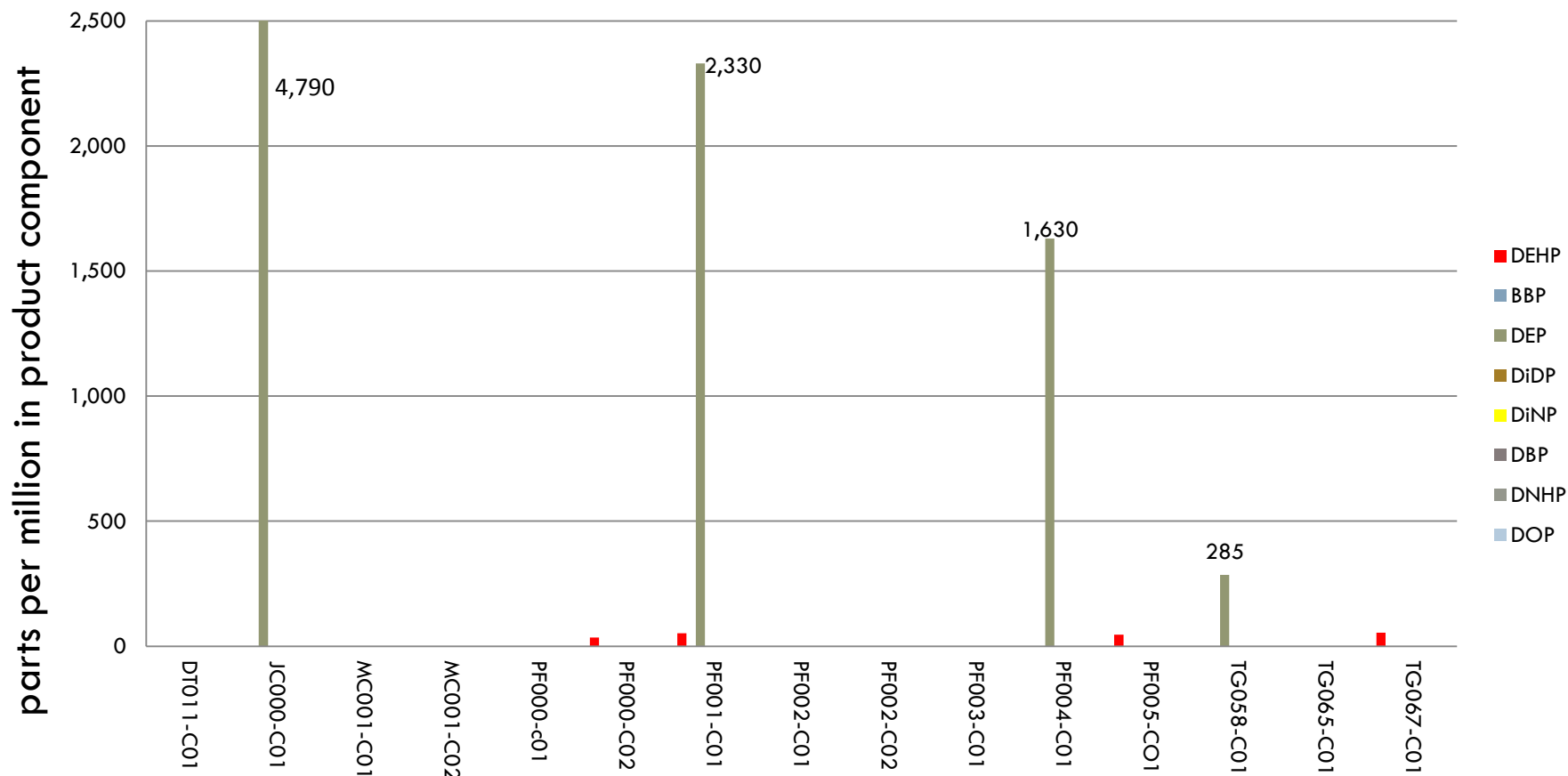
Phthalates – bath products

Phthalates in Bath Products



Phthalates – perfumes/fragrances

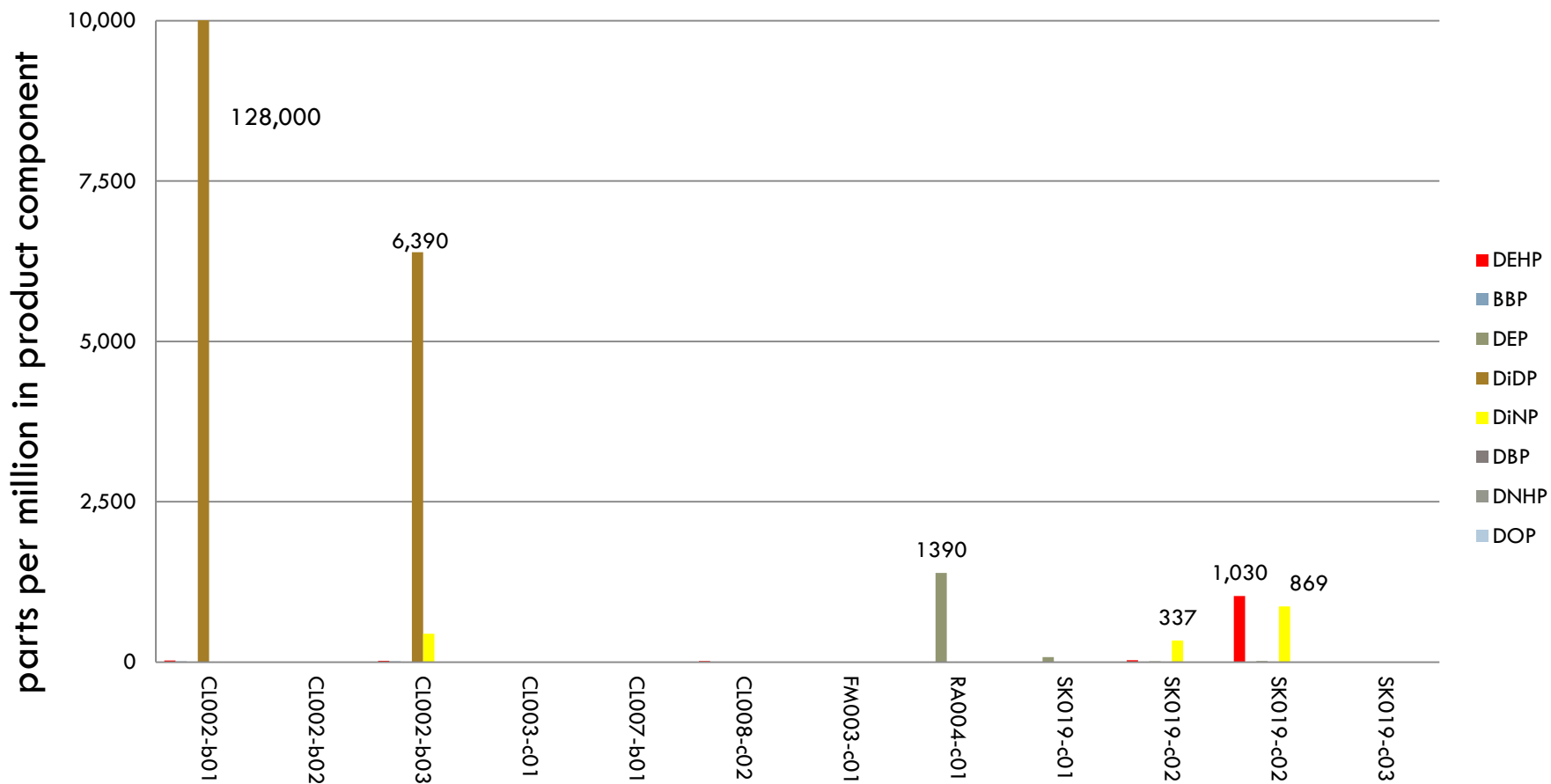
Phthalates in Perfumes and Fragrances



No pictures due to ongoing enforcement.

Phthalates – cosmetics

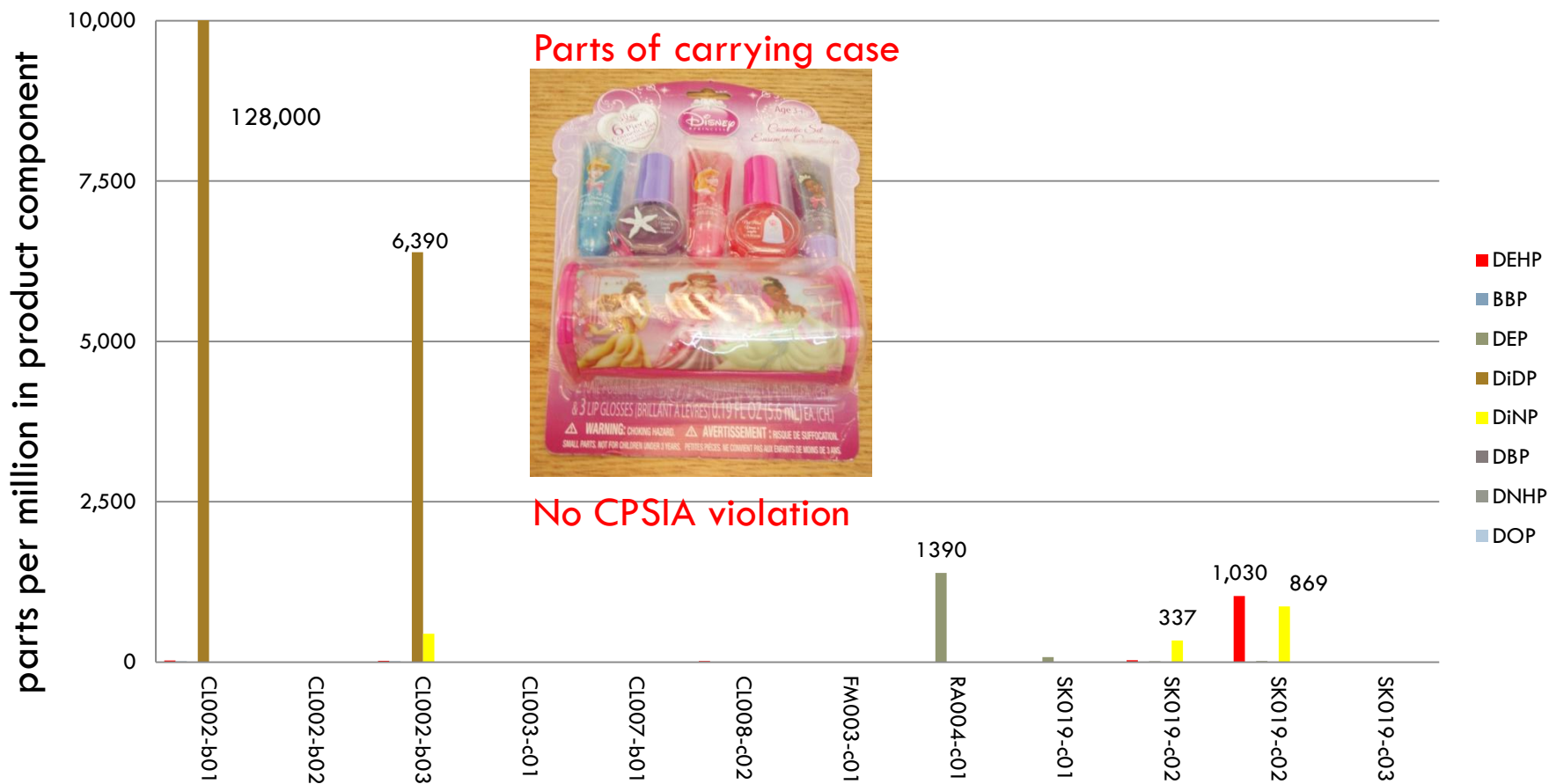
Phthalates in Cosmetic Products



Parts of carrying case

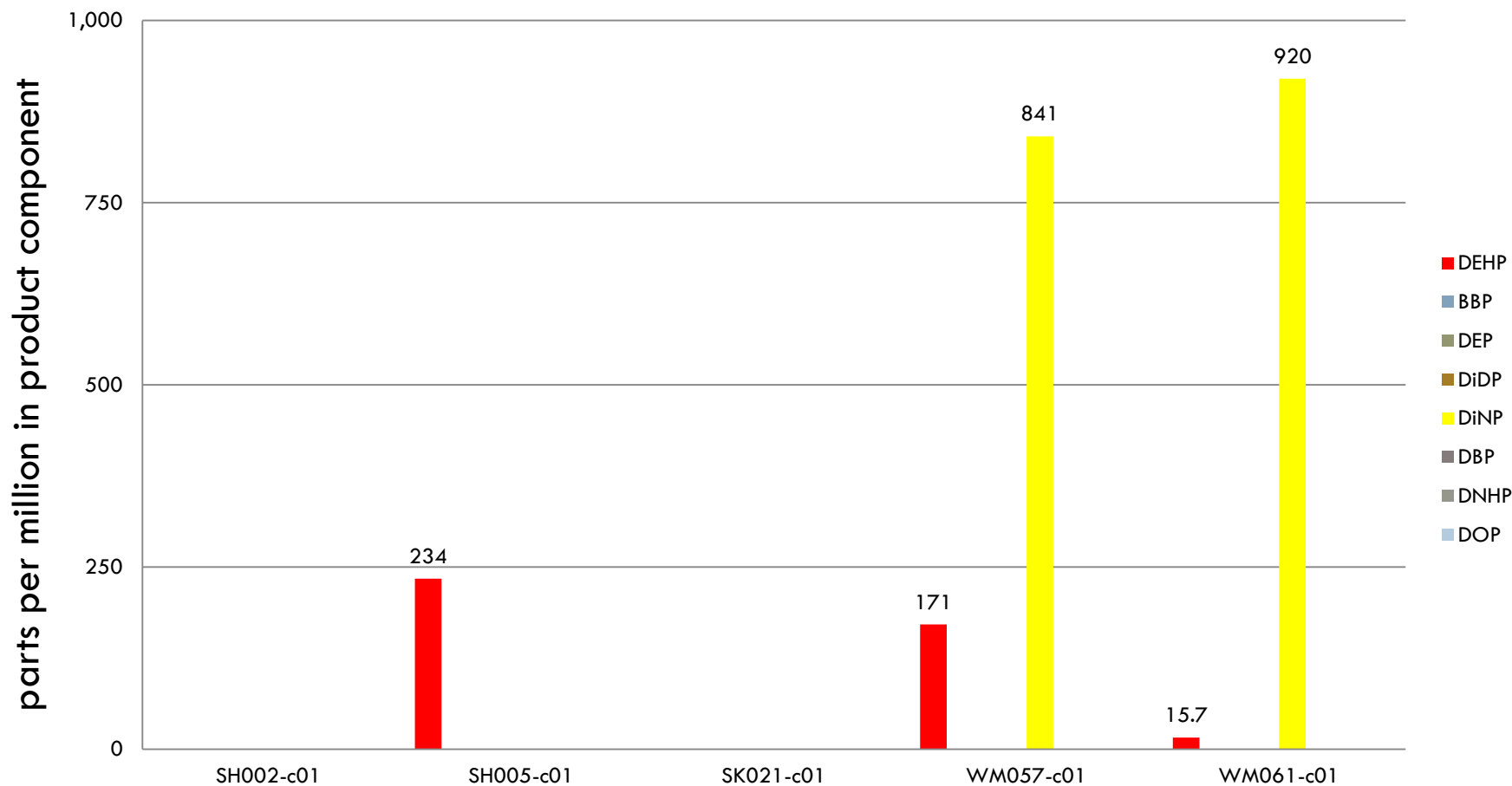


No CPSIA violation



Phthalates – Halloween

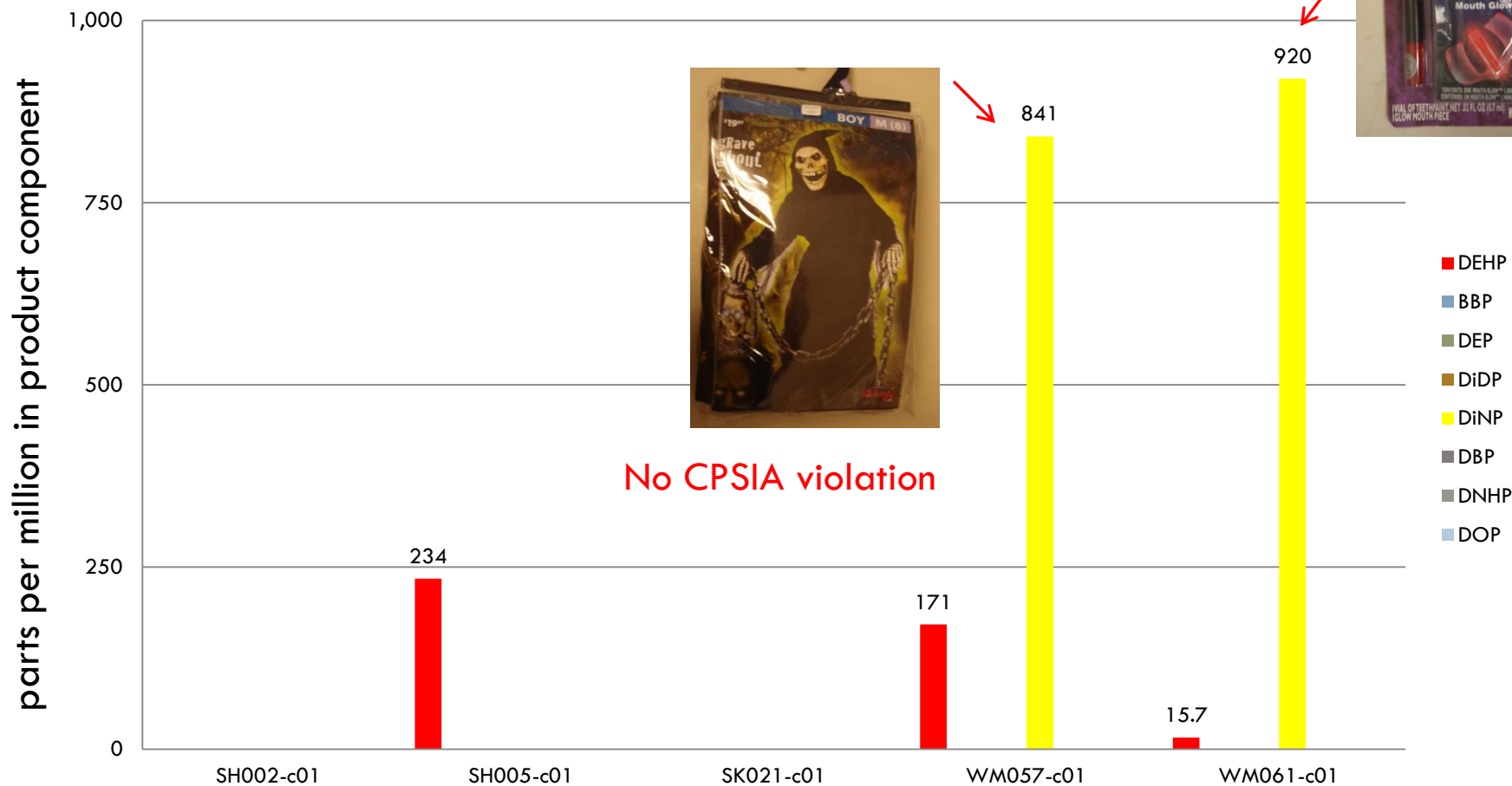
Phthalates in Halloween Products



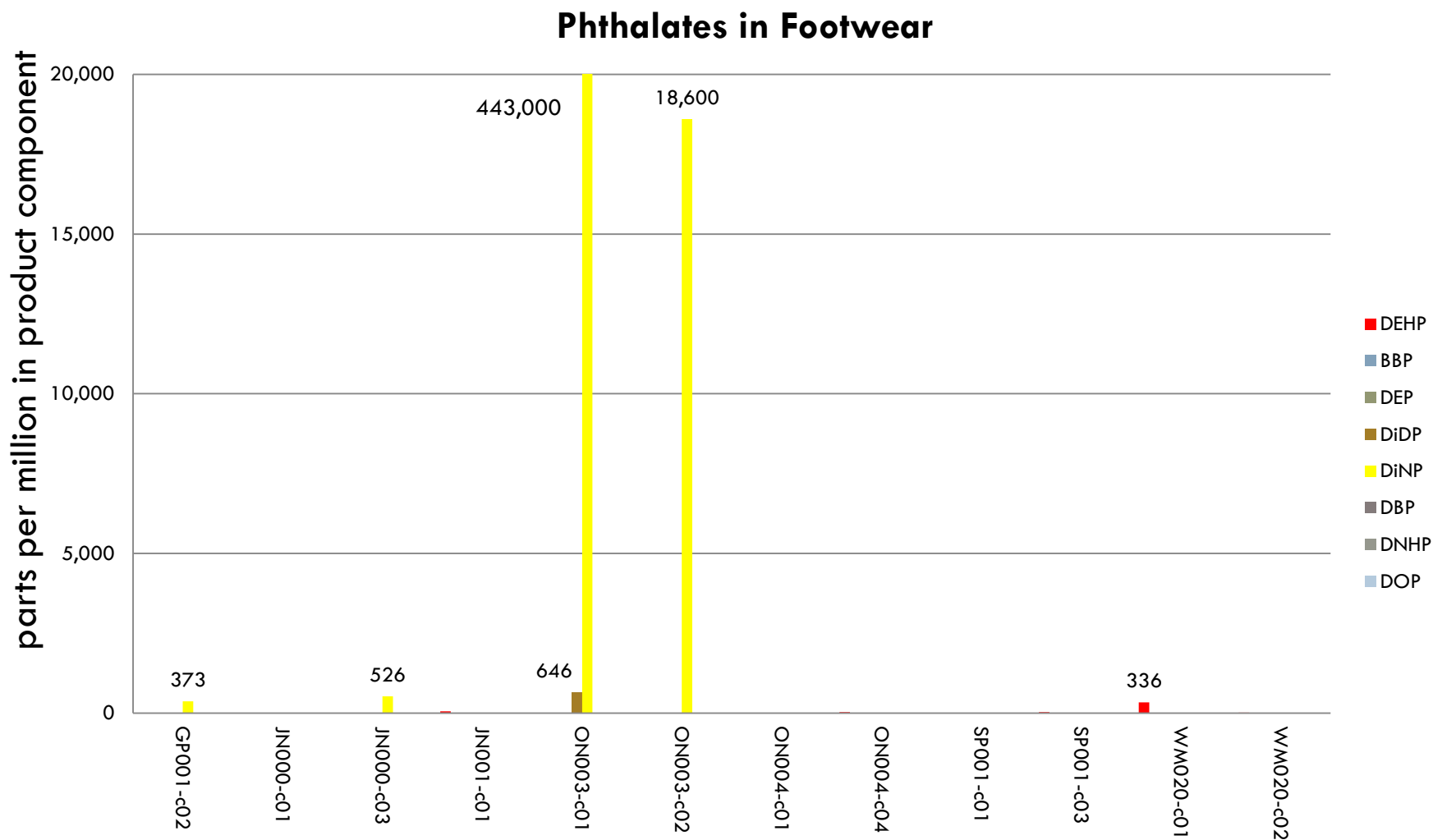
Phthalates – Halloween

No CPSIA violation

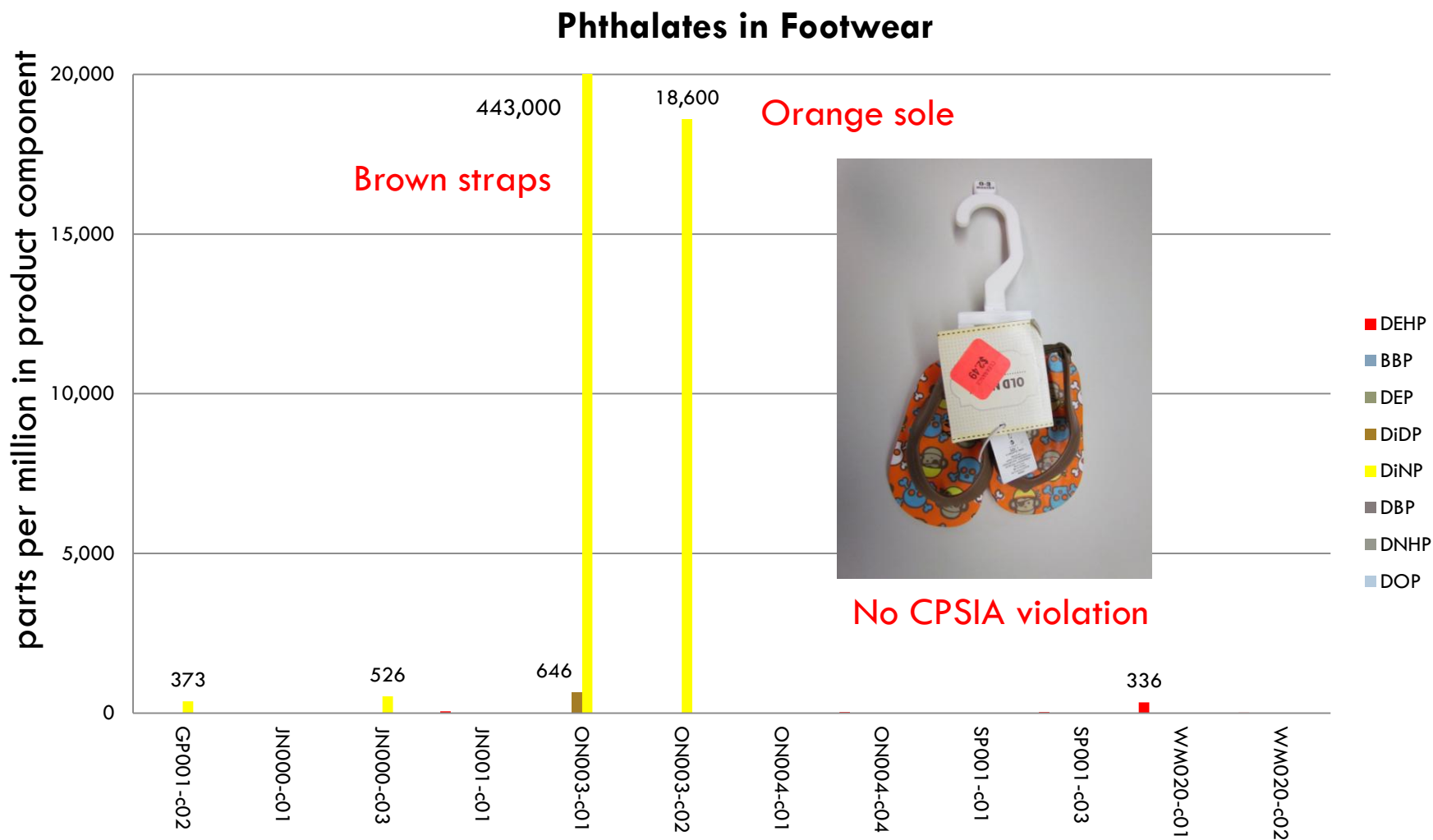
Phthalates in Halloween Products



Phthalates – footwear



Phthalates – footwear



Phthalates – conclusions

Conclusions:

- Phthalates can be analyzed at low levels in a wide variety of products
- Found in appreciable levels in many products
- Found in some unexpected product types (e.g. makeup)
- High levels found in a few products (e.g. baby sandals)

Metals – conclusions

Conclusions:

- A wide range of product types can be analyzed for the metals of interest.
- Metals can be detected at ppm levels in all products categories encompassing a range of different media types.
- Several products contained antimony at reportable levels.
- Cobalt was found in most clothing tested and may be tied to the use of cobalt based blue dyes.
- A majority of children's products tested had at least one of the six metals at reportable levels.

Other product testing

Testing containers for children under 3 & sports bottles to assure compliance with restrictions on Bisphenol A ([Ch. 70.280 RCW](#))

Lab budget	\$43, 538 (74 samples) Ecology funds
Target chemicals	Bisphenol A
Target products	Baby bottles, sippy cups, toddler containers (bowls and plates), and plastic & metal sports bottles
Final report	<u>https://fortress.wa.gov/ecy/publications/SummaryPages/1303005.html</u>

Results: Only one sample contained BPA above PQL (20 ppm).
High degree of compliance with restrictions on BPA.

Other product testing

Testing products that may contain flame retardants to assure compliance with restrictions on PBDEs and investigate current use of alternatives

(Ch.70.76 RCW)

Lab budget	\$175,000 (~300 samples) EPA National Estuary Program Puget Sound grant funds
Target chemicals	PBDEs (penta-, octa-, & deca-), polybrominated diphenyl ethanes, TCEP, TCPP, TDCPP, RDP, TPP
Target products	<ul style="list-style-type: none">• Products containing polyurethane foam (changing mats, children's furniture, mattresses & pads)• Flame retardant workwear, children's sleepwear• Electrical products (hair dryers, heaters, cooking implements, battery chargers)• Electronic products (televisions, computers)
Final report	January 2014

Initial results: Detections of bromine via X-Ray Fluorescence screening indicating likely presence of brominated flame retardants. Lab results pending.

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ECOLOGY
State of Washington

RESOURCES

Children's Safe Product Act:

<http://www.ecy.wa.gov/programs/swfa/cspa/>

RCW 70.270

<http://apps.leg.wa.gov/RCW/default.aspx?cite=70.240>

WAC 173-334

<http://apps.leg.wa.gov/WAC/default.aspx?cite=173-334>

Listserv:

<http://listserv.wa.gov/cgi-bin/wa?A0=CHILDRENS-SAFE-PRODUCTS>

Search data on children's products:

<http://www.ecy.wa.gov/programs/swfa/cspa/search.html>

DATE, 2013