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Formaldehyde and 15 Volatile Organic Chemicals in Children's Products

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For more information contact:

Hazardous Waste and Toxics Reduction Program
P.O. Box 47600
Olympia, WA 98504-7600

Phone: 360-407-6700

Washington State Department of Ecology: ecology.wa.gov

- Headquarters, Olympia: 360-407-6000
- Northwest Regional Office, Shoreline: 206-594-0000
- Southwest Regional Office, Olympia: 360-407-6300
- Central Regional Office, Yakima: 509-575-2490
- Eastern Regional Office, Spokane: 509-329-3400

Formaldehyde and 15 Volatile Organic Chemicals in Children's Products

by

Alex Stone, Sc.D.
Senior Chemist

Hazardous Waste and Toxics Reduction Program
Washington State Department of Ecology
Olympia, Washington

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Table of Contents

List of Tables

List of Figures

Abstract

The Washington State Department of Ecology's Waste 2 Resources (W2R) and Hazardous Waste and Toxics Reduction (HWTR) programs conducted a study to evaluate the presence of formaldehyde and 15 volatile organic compounds (VOCs) in children's products. Formaldehyde has a number of uses including the manufacture of plastics, as a preservative in cosmetics and personal care products, etc. VOCs are used in the production of plastics and as solvents in the manufacture of children's products. The study was conducted to evaluate compliance with Washington's Children's Safe Product Act (CSPA), to determine possible presence of these chemicals in children's products, and to evaluate analytical methods. It was funded by a grant from the Washington State Attorney General's Office.

Children's products were tested for formaldehyde and fourteen VOCs:

- n-butanol
- benzene
- vinyl chloride
- methylene chloride
- carbon disulfide
- methyl ethyl ketone
- 1,1,2,2-tetrachloroethane
- hexachlorobutadiene
- ethylbenzene
- styrene
- acrylonitrile
- toluene
- 1-4-dioxane
- tetrachloethylene

Because of technical issues, the fifteenth VOC, octamethylcyclotetrasiloxane, could not be analyzed. A wide range of product types were tested and, in general, low VOC levels were found in products to which children are exposed primarily either by mouth or applied to their skin.

The test results also showed that a wide range of children's products can be tested for these volatile chemicals using existing methodologies. Most of the chemicals were routinely detected at less than the 1 parts per million (ppm) level validating the practical quantitation limit (PQL) of 1–30 ppm levels in Ecology's Reporting Guidance[1]. The lower detection limits obtained in this study suggest a lower PQL in the Reporting Guidance may be appropriate.

Ecology initiated compliance correspondence for 1 VOC result (methyl ethyl ketone.) The manufacturer was found to be in compliance as the responsible company's annual aggregate gross sales were sufficiently low that reporting was not yet required due to the phased in schedule in the CSPA reporting rule[2].

[1] Children's Safe Product Act-Reporting Rule-WAC 173-334, Reporting Guidance-Practical Quantitation Limits (PQLs), accessed 12/2013.
[2] Specifically, WAC 173-334-110

Background

Formaldehyde

Formaldehyde is used in the manufacture of plastics, particularly amino and phenolic resins like phenol-formaldehyde and urea formaldehyde foam. Phenol-formaldehyde resins are used as:

- Adhesives for binding wood products (particle board, fiber board, and plywood)
- Molding compounds (in electrical, automotive, and kitchen parts)
- Phenolic foam insulation
- Foundry mold binders
- Decorative and industrial laminates
- Binders for insulating materials

Urea-formaldehyde resins are primarily used in foam insulation. (HSDB, 2012) Formaldehyde is also used as a preservative in the preparation of vaccines (CDC, 2014) and as preservatives in cosmetics and other products either alone (rarely) or as the product of formaldehyde releasing (common) compounds (NTP, 2012).

Formaldehyde is present in the environment as a result of natural processes and from man-made sources. The major source of atmospheric formaldehyde is the photochemical oxidation and incomplete combustion of hydrocarbons (i.e., methane or other gases, wood, coal, oil, tobacco and gasoline). Formaldehyde is mainly used as an intermediate in the chemical industry for the production of resins for the wood, paper, and textile processing industries (approximately 40% urea-formaldehyde resins, 10% phenol-formaldehyde resins, 10% polyacetal resins and 5% melamin-formaldehyde resins). (OECD, 2002)

Formaldehyde has been identified as a chemical of high concern to children (CHCC) in Ecology's rule to implement the CSPA. Formaldehyde is a skin, eye, and respiratory tract irritant and sensitizer. Formaldehyde is classified as a carcinogen by a number of authoritative sources. Inhalation of formaldehyde is associated with cancer in the respiratory tract in humans and laboratory animals. Oral exposures in animals are also carcinogenic. (WDOH, 2010a)

Volatile Organic Compounds

Fifteen volatile organic compounds (Table 1) are also identified as CHCCs in Ecology's rule to implement the CSPA. One of these compounds, n-butanol (CAS# 71-36-3), has subsequently been removed from the CHCC list based on information provided in a petition to Ecology (Ecology, 2013). These fifteen chemicals were selected for analysis as they are potential analytes under EPA SW-846 Method 8260B Volatile Organic Compounds by Gas Chromatography /Mass

Spectrometry (GC/MS). (EPA, 1996) Although the 15 chemicals are unlikely to be found in all media, it may prove possible to analyze several compounds simultaneously using Method 8260B.

Table 1: Formaldehyde and 15 volatile organic compounds evaluated in study

Compound	CAS #
Formaldehyde	50-00-0
n-Butanol	71-36-3
Benzene	71-43-2
Vinyl chloride	75-01-4
Methylene chloride	75-09-2
Carbon disulfide	75-15-0
Methyl ethyl ketone	78-93-3
1,1,2,2-Tetrachloroethane	79-34-5
Hexachlorobutadiene	87-68-3
Ethylbenzene	100-41-4
Styrene	100-42-5
Acrylonitrile	107-21-1
Toluene	108-88-3
1,4-Dioxane	123-91-1
Tetrachloroethylene	127-18-4
Octamethylcyclotetrasiloxane	556-67-2

The fifteen VOCs have a wide range of uses. Two (vinyl chloride and styrene) are monomers used in plastic production. Vinyl chloride is used in the manufacture of polyvinyl chloride or PVC. PVC is found in a wide range of consumer products including:

- As a substitute for rubber
- In thin pliable sheeting
- As a finish for textiles
- In non-flammable upholstery
- Raincoats
- Tubing
- Belting
- Gaskets
- Shoe soles
- Piping
- Pipe fitting and conduits
- Flooring
- Windows
- Siding and other rigid structures
- Swimming pool liners
- Household products
- Consumer goods
- Wire and cable coating
- Packaging
- Automobile tops and floor mats
- As a popular resin in construction and building industries (HSDB, 2012)

Styrene is used in numerous plastics both singly (polystyrene including high impact polystyrene or HIPS) and in blends such as acrylonitrile-butadiene-styrene (ABS), styrene-acrylonitrile (SAN), methyl methacrylate-butadiene-styrene (MBS), and others. Plastics made with styrene are used in a wide range of products including:

- Packaging
- Furniture
- Electrical equipment
- Industrial moldings
- Thermal insulation
- Automobile parts
- Ventilation pipes
- Air conditioning
- Hobby equipment
- Tires
- Radiators
- Hoses
- Belts and seals
- Wire insulation
- Paper coatings
- Carpet backings
- Adhesives
- Building products
- Household consumer goods
- Putty and casting resins

Uses of the remaining compounds are as extensive and as varied. For the purposes of this report, the individual uses of each compound will not be discussed in more detail. However, the process used to identify chemicals as CHCCs required evidence of carcinogenicity, reproductive toxicity, or endocrine disruption and evidence of a potential for exposure including use in children's products. These chemicals are a subset of the 66 chemicals and class of chemicals identified as CHCCs. Table 2 identifies product-testing results by the Danish Environmental Protection Agency and other data sources in which the individual CHCCs were found in children's products. (Ecology, 2009)

Table 2: Volatile organic compounds reported by the Danish Environmental Protection Agency and other sources where chemicals are found in children's products

Compound	Use
Formaldehyde	Tents and Tunnels (DEPA-46), Baby products (DEPA-90), Hobby products for children (DEPA-93)
n-Butanol	Tents and Tunnels (DEPA-46), Wooden toys (DEPA-60), Slimy toys (DEPA-67), Perfume in toys (DEPA-68)
Benzene	Perfume in toys (DEPA-68), Balloons (DEPA-89)
Vinyl chloride	Children's toys (EU Risk Assessment)
Methylene chloride	Slimy toys (DEPA-67)
Carbon disulfide	Balloons (DEPA-89), Teats and soothers (NL-2002)
Methyl ethyl ketone	Tents and Tunnels (DEPA-46), Slimy toys (DEPA-67), Perfume in toys (DEPA-68)
1,1,2,2-Tetrachloroethane	Baby products (DEPA-90)
Hexachlorobutadiene	Electronics and electrical products (DEPA-32)
Ethylbenzene	Tents and Tunnels (DEPA-46), Slimy toys (DEPA-67), Perfume in toys (DEPA-68), Hobby products for children (DEPA-93)
Styrene	Tents and Tunnels (DEPA-46), Slimy toys (DEPA-67), Perfume in toys (DEPA-68), Baby products (DEPA-90), Plastic toys (NL-2005a)
Acrylonitrile	Children's toys (EU Risk Assessment)
Toluene	Tents and Tunnels (DEPA-46), Wooden toys (DEPA-60), Slimy toys (DEPA-67), Perfume in toys (DEPA-68), School bags and school items (DEPA-84)
1,4-Dioxane	Cosmetics/toiletries (EU Risk Assessment)
Tetrachloroethylene	Tents and Tunnels (DEPA-46)
Octamethylcyclotetra-siloxane	Perfume in toys (DEPA-68), Cosmetics for children (DEPA-88)

All fifteen VOCs (find CAS numbers for these compounds in Table 1):

- **are carcinogenic:**
  benzene, vinyl chloride, methylene chloride, 1,1,2,2-tetrachloroethane, hexachlorobutadiene, ethylbenzene, styrene, acrylonitrile, 1,4-dioxane, tetrachloroethylene
- **negatively impact reproductivity:**
  n-butanol, methylene chloride, carbon disulfide, methyl ethyl ketone, hexachlorobutadiene
- **are mutagenic/genotoxic:**
  vinyl chloride, hexachlorobutadiene
- **are neurotoxic:**
  carbon disulfide, toluene
- **have developmental toxicity:**
  benzene, carbon disulfide, methyl ethyl ketone, hexachlorobutadiene, ethylbenzene, styrene, toluene
- **are endocrine disruptors:**
  octamethylcyclotetrasiloxane
- **have other systemic impacts:**
  1,1,2,2-tetrachloroethane, styrene, 1,4-dioxane, hexachlorobutadiene

(WDOH, 2010b-p)

Sampling Process Design (Experimental Design)

Approximately 200 children's products were collected and separated into individual components. Emphasis was placed upon products intended for children. Liquid products (such as personal care products) and products made of plastics were selected for VOC analysis as they are more likely to contain these compounds and be reported to Ecology during the sampling period.

Twelve products were selected for formaldehyde analysis and 74 product samples for VOC analysis. Laboratory analysis was conducted using high performance liquid chromatography (HPLC) (formaldehyde) and gas chromatography-mass spectroscopy (GC/MS).

Metals

The Quality Assurance Project Plan (QAPP) for this sampling event included analysis of product components for ten metals (Ecology, 2012d). As these metals were also the subject of three other QAPPs for analysis of children's products (Ecology, 2012a; 2012b; 2012c), all metals analyses were combined and published in a single report.

Data Quality

Octamethylcyclotetrasiloxane was in the original suite of 15 VOCs. The laboratory ordered standards and tried calibrating several different types of instruments to the standard, but came up with very inconsistent results. It also tried to create a calibrated system. In the end, the laboratory was unable to find a procedure for accurately measuring this analyte in the matrices supplied. This information was communicated to the Project Manager and it was agreed to remove this analyte from the list. The laboratory believed, however, that methods other than the GC/MS method used for the remaining 14 VOCs could be used to provide analytical results for octamethylcyclotetrasiloxane.

Three duplicate samples were submitted to the laboratory for simultaneous analysis; a perfume and body wash (PF000) and two baby lotions (TR003 and WM003). No VOCs were found in the two baby lotion samples and no determination can be made based upon these results except that there is reduced likelihood for false positives. Methyl ethyl ketone was found at very low levels in the duplicate PF000 sample. However, this result can be explained by a difference in method reporting limits (MRLs). The two samples had different MRLs. The sample reporting a non-detect (ND) had a method reporting limit of 3.8 ppm while the duplicate sample reported a concentration of 1.4 ppm with an MRL of 0.91 ppm. Because of this difference, both samples could have contained MEK at the 1.4 ppm level. No adverse quality assurance/quality control (QA/QC) conclusions can be determined based upon the duplicate samples. All remaining QA/QC results were within the parameters established by the QAPP (Ecology, 2012d.)

Product Sample Results

Twelve individual products were analyzed for formaldehyde (Table 3) and 74 products (Table 4) for 14 VOCs. From the 12 products tested for formaldehyde and 74 for VOCs, 18 and 81 individual samples, respectively, were sent to the laboratory for analysis as some products were separated into multiple individual components. For example, one set of clothing (Figure 1) was separated into three different components, the jeans fabric, button, and zipper pull. Only the fabric was sent to the laboratory for analysis. Multiple samples were collected from additional products and results from each component are presented separately.

Table 3: Products tested for formaldehyde

Product ID	Product Description
AM010-a00	Girls blue jeans
AM011-a00	Boys jeans, button up & sweater
AM012-a00	5 Boys onesies
AM013-a00	3 Onesies
AM014-a00	Jeans & Jacket
AM015-a00	Onesie & Overalls
AM016-a00	Overalls
AM017-a00	Girls Blue Jeans size 3

AM018-a00	Girls blue jeans
AM019-a00	Boys jeans, t-shirt & jacket
AM020-a00	Girls Jeans
AM021-a00	Girls Jeans

Table 4: Products tested for VOCs

Product ID	Product Description	Product ID	Product Description
CL002-a00	Princess lip gloss/nail polish	SK022-a00	Baby Wash
CL003-a00	Nerds scented nail polish pack	TG001-a00	Baby lotion
CL004-a00	Nail Polish Pack	TG002-a00	Baby bedtime bath
CL007-a00	Claire's make up pack	TG004-a00	Baby changing wipes
CL009-a00	Lip gloss set	TG005-a00	Baby bath nighttime
CL010-a00	Lip gloss set	TG019-a00	Petroleum Jelly
CL011-a00	Lip gloss set	TG020-a00	HPA lanolin
CT004-a00	Baby wipes	TG058-a00	Body mist
CT005-a00	Diapers	TG059-a00	Detangling spray-double Dutch apple
DT008-a00	Petroleum Jelly	TG060-a00	Bubble Bath
DT011-a00	Body "splash" (Body spray)	TG061-a00	3 in 1 Shampoo conditioner Body wash
DT012-a00	Cornstarch Baby Powder	TG062-a00	Body Wash - Vanilla Swirl
DT033-a00	Bedtime Baby Cream	TG063-a00	Bubble Bath Sweet Strawberry
FM003-a00	Scented neon nail polish set	TG064-a00	2 in 1 conditioning detangler
FM004-a00	Face paint crayons	TG065-a00	Most Wanted fragrance Body spray
FM005-a00	Baby wipes	TG066-a00	Strawberry Body wash
FM006-a00	Baby powder	TG067-a00	Someday eau de parfum spray
FM007-a00	Princess lip balm & keychain in tube	TR002-a00	Toddler wipes
FM008-a00	Baby oil	TR003-a00	Baby lotion
FM009-a00	Baby powder	TR006-a00	Girly temp tattoos
FM011-a00	Flushable toddler wipes	TR007-a00	Boy temp tattoos
JC000-a00	Eau de toilette	TR014-a00	Travel Baby wipes
MC000-a00	Childs Khaki pants	WG000-a00	Daisy Duck large chapstick tube
MC001-a00	Eau de parfum spray & body lotion	WG001-a00	Baby Lotion
PF000-a00	Perfume & Body Wash	WG002-a00	Baby Lotion
PF001-a00	Eau de toilette	WG003-a00	Baby Lotion

PF002-a00	Eau de toilette & Body lotion	WG004-a00	Baby Wash
PF003-a00	Body spray	WM000-a00	Body wash
PF004-a00	Eau de Toilette	WM001-a00	Body wash
PF005-a00	Adorable Eau de Toilette	WM003-a00	Bubble Bath
RA001-a00	Tinkerbell bubble bath	WM004-a00	Color Bath Dropz
RA002-a00	Soothing Vapor Bath	WM006-a00	Baby bubble bath & wash
RA003-a00	Baby lotion	WM007-a00	Baby lotion
RA004-a00	Scented Nail Polish	WM010-a00	Princess keychain & chapsticks
SF000-a00	Sensitive baby wipes	WM037-a00	Lip smackers bath & Body collection
SF001-a00	Face paint transfer sheets & crayon	WM053-a00	4 Lip glosses with zipper pouch
SF002-a00	Mom to mom unscented wipes	WM058-a00	Monster Value Makeup Set

Figure 1: Example of tested product

Products were grouped into seven larger categories of clothing, baby and bath accessories, cosmetics, fragrances, lip balms and miscellaneous (Table 5).

Table 5: Breakdown of products into categories

Analyte	Products	Nr.	%
Formaldehyde	Clothing	12	14.0
VOC	Baby Accessories	29	33.7
VOC	Bath Accessories	14	16.3
VOC	Cosmetics	12	14.0

VOC	Fragrances	11	12.8
VOC	Lip Balm	5	5.8
VOC	Misc.	3	3.5

Complete formaldehyde and VOC analyses are provided in Appendix 1. Emphasis was placed upon products likely to be placed into the mouth or applied to the skin, which accounts for the larger number of samples of baby and bath accessories, cosmetics, and fragrances.

With few exceptions, formaldehyde and VOCs were found at very low levels (Table 6). Only 1-butanol was found at concentrations exceeding 1,000 ppm, two samples were found to contain 1-butanol and 2-butanone at between 100 and 1,000 ppm and one sample of ethyl benzene between 10 and 100 ppm. All other VOCs were found at less than 10 ppm. 1-Butanol was recently removed from the CHCC list (Ecology, 2013).

Table 6: Breakdown of formaldehyde and VOCs found in product components

Chemical	ND (%)	< 1	%	1 to < 10	%	10 to < 100	%	100 to < 1,000	%	1,000 or >	%
1,1,2,2-Trichloroethylene	100	0	0	0	0	0	0	0	0	0	0
1,4-Dioxane	100	0	0	0	0	0	0	0	0	0	0
1-Butanol	97.5	0	0.0	0	0	0	0	1	1.2	1	1.2
2-Butanone	95.1	3	3.7	0	0	0	0	1	1.2	0	0
Acrylonitrile	96.3	0	0.0	3	3.7	0	0	0	0	0	0
Benzene	95.1	4	4.9	0	0	0	0	0	0	0	0
Carbon Disulfide	96.3	3	3.7	0	0	0	0	0	0	0	0
Ethylbenzene	90.1	6	7.4	1	1.2	1	1.2	0	0	0	0
Formaldehyde	93.8	5	6.2	0	0	0	0	0	0	0	0
Hexachlorobutadiene	100	0	0	0	0	0	0	0	0	0	0
Methylene chloride	100	0	0	0	0	0	0	0	0	0	0
Styrene	93.8	4	4.9	1	1.2	0	0	0	0	0	0
Tetrachloroethylene	100	0	0	0	0	0	0	0	0	0	0
Toluene	81.5	12	14.8	3	3.7	0	0	0	0	0	0
Vinyl chloride	100	0	0	0	0	0	0	0	0	0	0

Figure 2 shows formaldehyde concentrations found in clothing. Formaldehyde was found in only 5 of the 18 samples. Component samples from a single product, a boy's jeans, t-shirt and, jacket combination, were responsible for the three highest concentrations of 3.7, 4.2 and, 4.4 parts per million (ppm). The two other samples containing formaldehyde were a set of onesies (2.8 ppm) and girl's jeans (2.1 ppm). Overall, the levels of formaldehyde in the products tested were low.

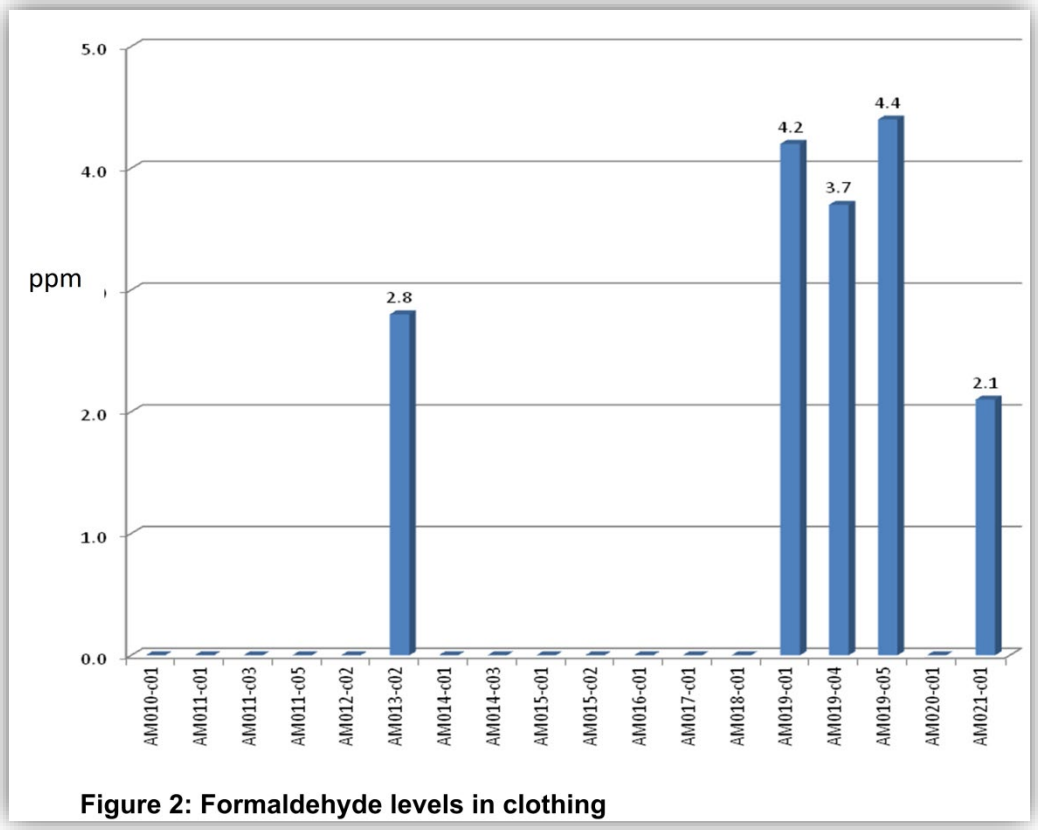

Figure 2: Formaldehyde levels in clothing

Figure 3 shows VOC concentrations found in baby accessories. Only toluene was found in one product, petroleum jelly, at 0.40 ppm. Based upon these results, VOCs do not appear to pose a problem for the limited group of baby accessories tested.

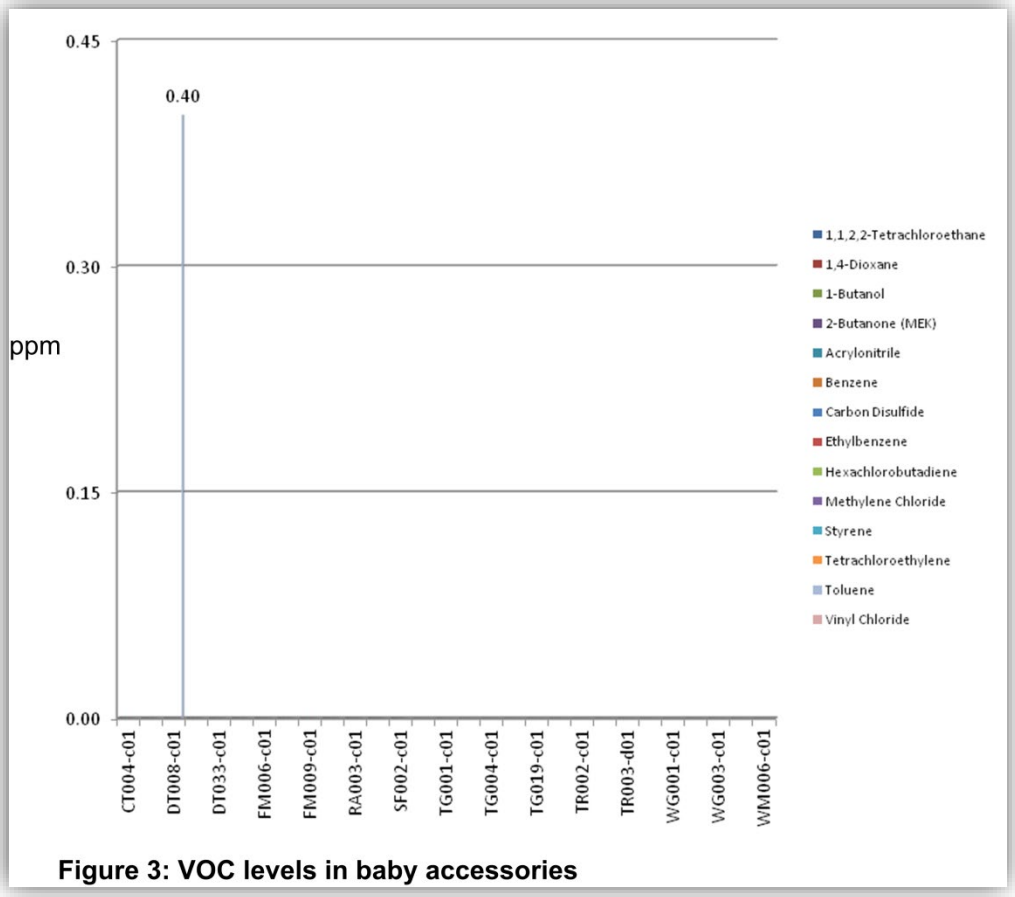

Figure 3: VOC levels in baby accessories

Figure 4 shows VOC concentrations found in bath accessories. Only two products contained the VOC toluene, a detangling deconditioner (4.2 ppm) and a body wash (0.53 ppm). Based upon these results, VOCs do not appear to pose a problem for the limited group of bath accessories tested.

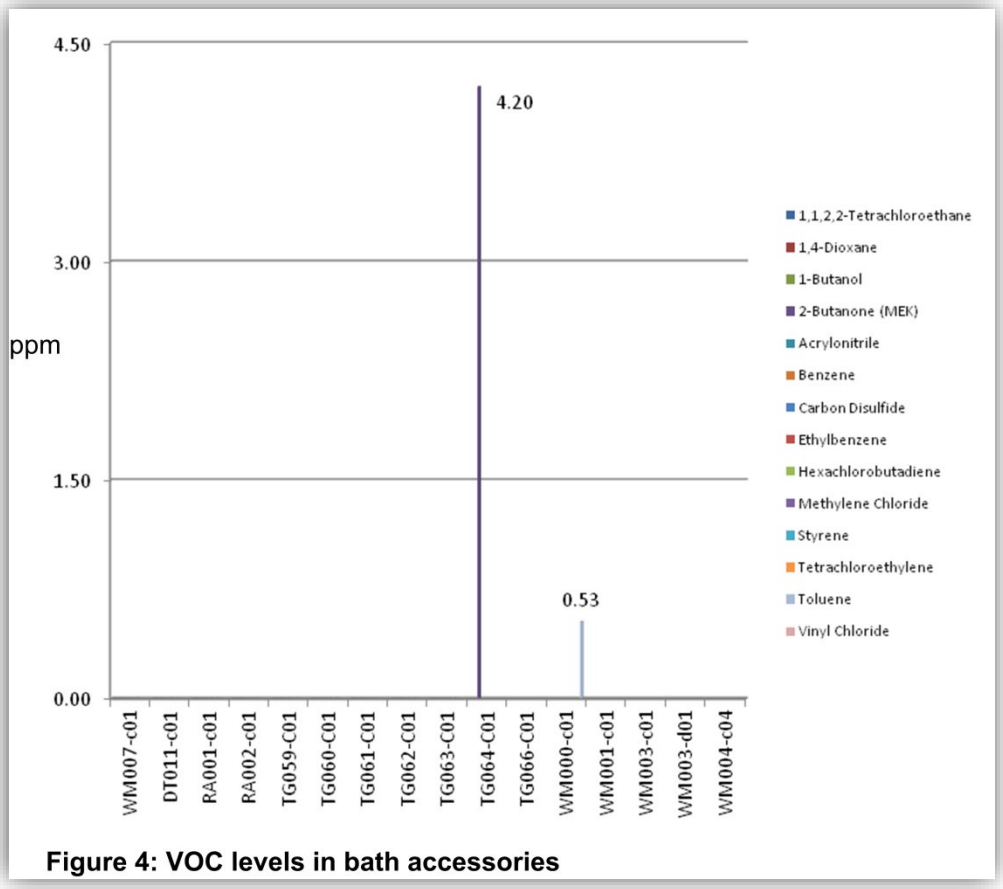

Figure 4: VOC levels in bath accessories

Figure 5 shows VOC concentrations found in cosmetics. Two nail polishes contained the highest VOC levels with 1-butanol at 380 and 5,100 ppm. As stated previously, 1-butanol was removed from the CHCC list (Ecology, 2013). At the time of this study, however, 1-butonal was on the list and therefore included in the VOCs analyses. One nail polish sample contained ethylbenzene at appreciable levels (45 ppm). The other contained substantially lower toluene levels (0.53 ppm). Several additional nail polish samples also contained ethylbenzene. Small amounts of other VOCs were found in many of the samples below 2 ppm. Based upon these results and the fact that 1-butanol is no longer on the CHCC list, VOCs do not appear to pose a problem for the limited group of cosmetics tested.

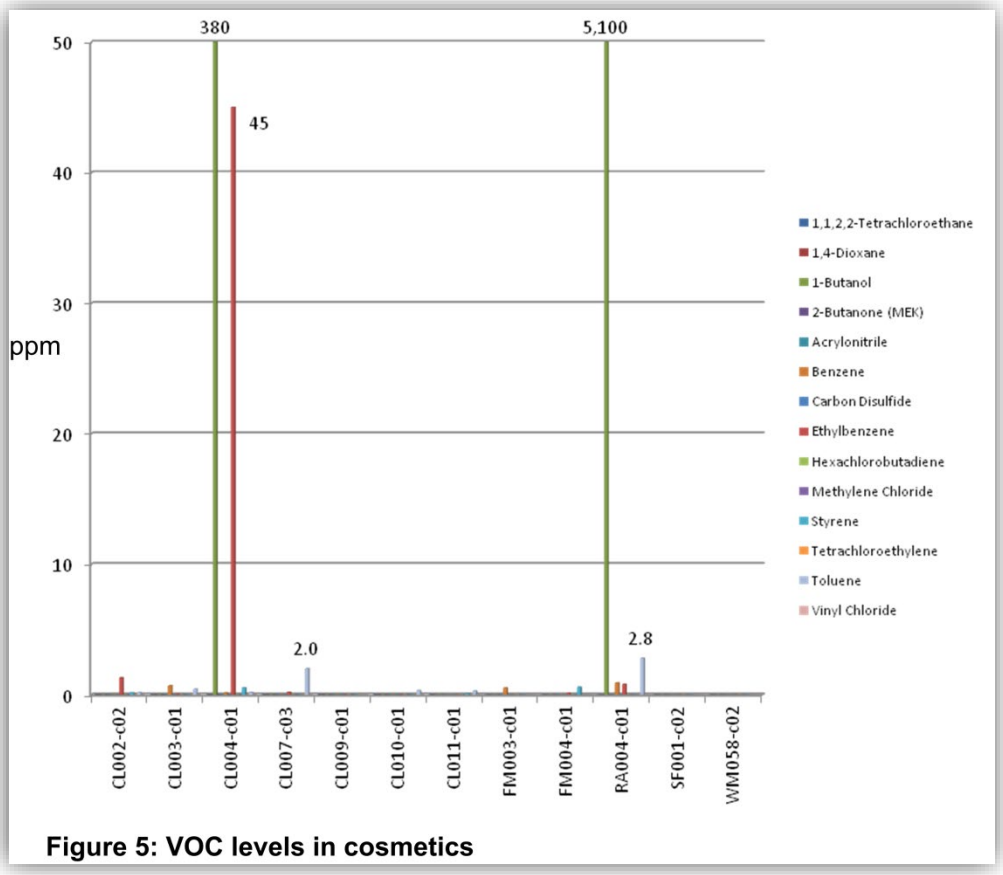

Figure 5: VOC levels in cosmetics

Figure 6 shows VOC concentrations found in fragrances. A body spray contained the highest observed levels with 2-butanone (also known as methyl ethyl ketone or MEK) at 230 ppm. The remaining samples contained substantially lower VOC levels with all detected amounts at or below 2.1 ppm. With the exception of a body spray (PF003) containing appreciable levels of MEK, VOCs do not appear to pose a problem for the limited group of fragrances tested.

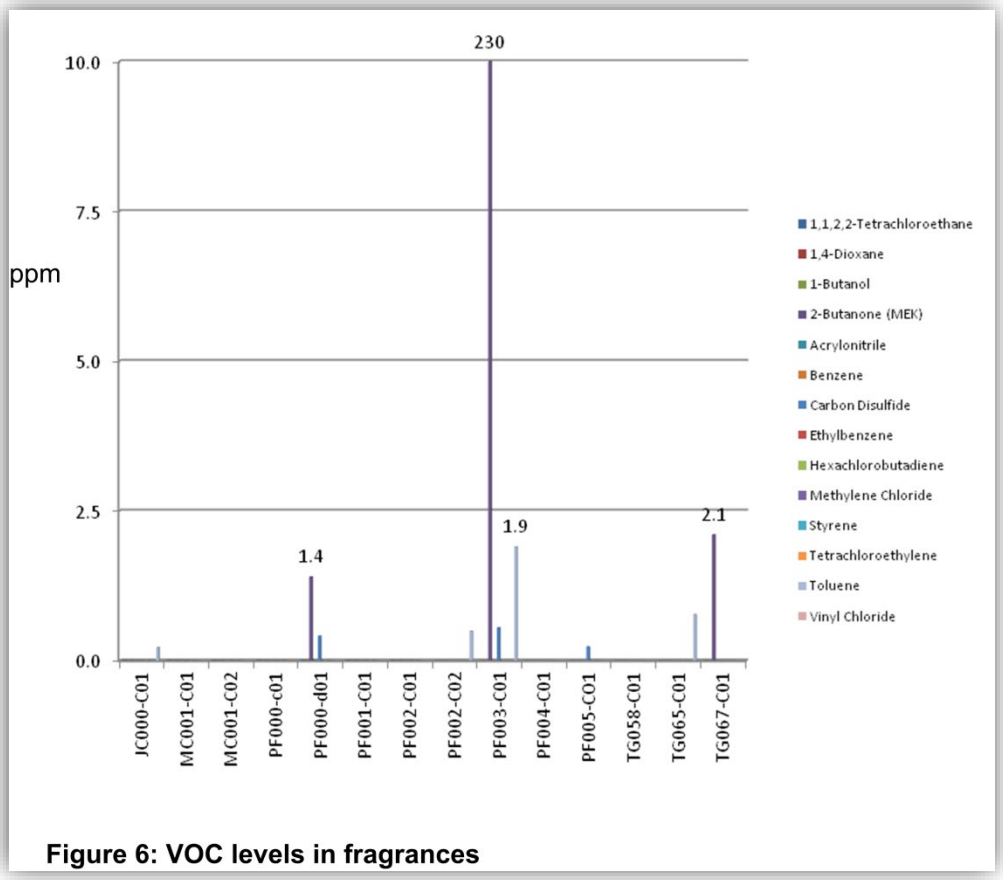

Figure 6: VOC levels in fragrances

Figure 7 shows VOC concentrations found in a limited survey of lip balms. One lip gloss contained styrene (2.0 ppm). Other samples contained toluene and ethylbenzene but at levels below 0.5 ppm. With the exception of the one sample containing styrene, VOCs do not appear to pose a problem for the limited group of lip balms tested.

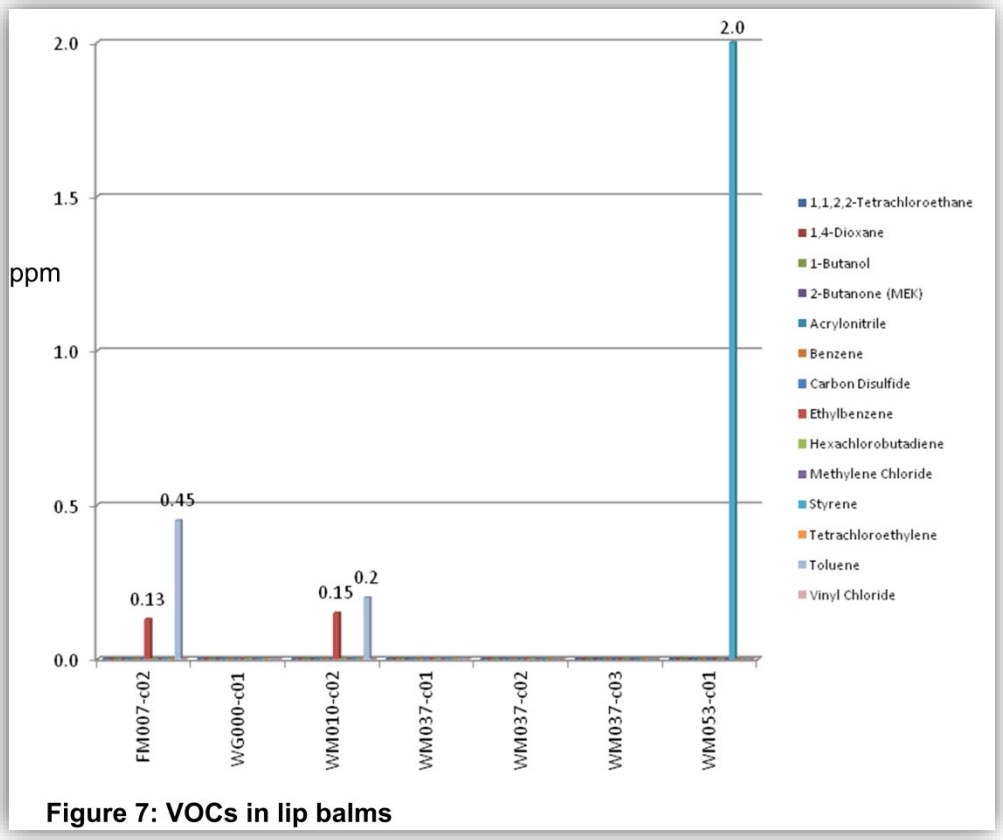

Figure 7: VOCs in lip balms

Three additional samples, two transferrable children's tattoos and one clothing sample were tested and found not to contain any of the VOCs of interest.

Sampling results are available in Appendix 2.

Compliance

Analytical results were compared with product data reported to Ecology as required by the CSPA. In response to results from this and other studies funded by Attorney General's office, Ecology initiated compliance assurance with manufacturers regarding possible failure to report CHCCs as required by the CSPA. Ecology identified 73 results and sent 30 letters to manufacturers containing one or more analytical result that indicated a need to evaluate compliance with the CSPA.

Ecology initiated enforcement for 1 VOC result (methyl ethyl ketone.) The manufacturer was found to be in compliance as the responsible company's annual aggregate gross sales were sufficiently low that reporting was not yet required due to the phased in schedule in the CSPA reporting rule[3].

Conclusions

Based upon the results discussed above, the following conclusions can be reached:

- The highest concentrations of VOCs observed were for 1-butanol, which has recently been removed from the list of chemicals of high concern to children.
- A few products were found to contain specific VOCs at levels of concern including ethylbenzene, toluene and styrene.
- Clothing can be tested for formaldehyde.
- A wide range of product types can be analyzed for VOCs.
- Formaldehyde and VOCs can be detected at less than 1 ppm levels in most products.

[3] Specifically, WAC 173-334-110

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Appendix 1: Data from analysis of products for formaldehyde

Brick Description	Sample	Formaldehyde
Girls blue jeans	AM010-c01	0.0
Boys jeans, button up and sweater	AM011-c01	0.0
Boys jeans, button up and sweater	AM011-c03	0.0
Boys jeans, button up and sweater	AM011-c05	0.0
5 Boys onesies	AM012-c02	0.0
3 Onsies	AM013-c02	2.8
Jeans and Jacket	AM014-c01	0.0
Jeans and Jacket	AM014-c03	0.0
Onsie and Overalls	AM015-c01	0.0
Onsie and Overalls	AM015-c02	0.0
Overalls	AM016-c01	0.0
Girls Blue Jeans size 3	AM017-c01	0.0
Girls blue jeans	AM018-c01	0.0
Boys jeans, t-shirt and jacket	AM019-c01	4.2
Boys jeans, t-shirt and jacket	AM019-c04	3.7
Boys jeans, t-shirt and jacket	AM019-c05	4.4
Girls Jeans	AM020-c01	0.0
Girls Jeans	AM021-c01	2.1

Appendix 2: Data from analysis of products for VOCs

Item description	Baby Accessories	1,1,2,2-Tetrachloroethane	1,4-Dioxane	1-Butanol	2-Butanone (MEK)	Acrylonitrile	Benzene	Carbon Disulfide	Ethylbenzene	Hexachloro-butadiene	Methylene Chloride	Styrene	Tetrachloro-ethylene	Toluene	Vinyl Chloride
Baby wipes	CT004-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diapers	CT005-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Petroleum Jelly	DT008-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.40	0.0
Cornstarch Baby Powder	DT012-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bedtime Baby Cream	DT033-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby wipes	FM005-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby powder	FM006-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby oil	FM008-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby powder	FM009-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flushable toddler wipes	FM011-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby lotion	RA003-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sensitive wipes	SF000-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mom to mom unscented wipes	SF002-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby Wash	SK022-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby lotion	TG001-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby bedtime bath	TG002-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby changing wipes	TG004-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby bath nighttime	TG005-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Petroleum Jelly	TG019-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HPA lanolin	TG020-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Toddler wipes	TR002-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Item description	Baby Accessories	1,1,2,2-Tetrachloroethane	1,4-Dioxane	1-Butanol	2-Butanone (MEK)	Acrylonitrile	Benzene	Carbon Disulfide	Ethylbenzene	Hexachloro-butadiene	Methylene Chloride	Styrene	Tetrachloro-ethylene	Toluene	Vinyl Chloride
Baby lotion	TR003-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby lotion	TR003-d01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Travel Baby wipes	TR014-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby Lotion	WG001-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby Lotion	WG002-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby Lotion	WG003-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby Wash	WG004-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby bubble bath & wash	WM006-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Item description	Bath Accessories	1,1,2,2-Tetrachloroethane	1,4-Dioxane	1-Butanol	2-Butanone (MEK)	Acrylonitrile	Benzene	Carbon Disulfide	Ethylbenzene	Hexachloro-butadiene	Methylene Chloride	Styrene	Tetrachloro-ethylene	Toluene	Vinyl Chloride
Body "splash" (Body spray)	DT011-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tinkerbell bubble bath	RA001-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Soothing Vapor Bath	RA002-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detangling spray	TG059-C01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bubble Bath	TG060-C01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 in1 Shampoo conditioner body wash	TG061-C01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Item description	Bath Accessories	1,1,2,2-Tetrachloroethane	1,4-Dioxane	1-Butanol	2-Butanone (MEK)	Acrylonitrile	Benzene	Carbon Disulfide	Ethylbenzene	Hexachloro-butadiene	Methylene Chloride	Styrene	Tetrachloro-ethylene	Toluene	Vinyl Chloride
Body Wash - Vanilla Swirl	TG062-C01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bubble Bath Sweet Strawberry	TG063-C01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 in 1 Conditioning detangler	TG064-C01	0.0	0.0	0.0	4.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strawberry Body wash	TG066-C01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Body wash	WM000-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.53	0.0
Body wash	WM001-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bubble Bath	WM003-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bubble Bath	WM003-d01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Color Bath Dropz	WM004-c04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baby lotion	WM007-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Item description	Cosmetics	1,1,2,2-Tetrachloroethane	1,4-Dioxane	1-Butanol	2-Butanone (MEK)	Acrylonitrile	Benzene	Carbon Disulfide	Ethylbenzene	Hexachloro-butadiene	Methylene Chloride	Styrene	Tetrachloro-ethylene	Toluene	Vinyl Chloride
Princess lip gloss/nail polish	CL002-c02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30	0.0	0.0	0.16	0.0	0.17	0.0
Nerds scented nail polish pack	CL003-c01	0.0	0.0	0.0	0.0	0.0	0.69	0.0	0.05	0.0	0.0	0.0	0.0	0.43	0.0
Nail Polish Pack	CL004-c01	0.0	0.0	380.0	0.0	0.0	0.14	0.0	45.00	0.0	0.0	0.52	0.0	0.18	0.0
Claire's make up pack	CL007-c03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.20	0.0	0.0	0.0	0.0	2.00	0.0
Lip gloss set	CL009-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Item description	Cosmetics	1,1,2,2-Tetrachloroethane	1,4-Dioxane	1-Butanol	2-Butanone (MEK)	Acrylonitrile	Benzene	Carbon Disulfide	Ethylbenzene	Hexachloro-butadiene	Methylene Chloride	Styrene	Tetrachloro-ethylene	Toluene	Vinyl Chloride
Lip gloss set	CL010-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.33	0.0
Lip gloss set	CL011-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.09	0.0	0.30	0.0
Scented neon nail polish set	FM003-c01	0.0	0.0	0.0	0.0	0.0	0.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Face paint crayons	FM004-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.12	0.0	0.0	0.58	0.0	0.0	0.0
Scented Nail Polish	RA004-c01	0.0	0.0	5,100.0	0.0	0.0	0.91	0.0	0.80	0.0	0.0	0.0	0.0	2.80	0.0
Face paint transfer sheets & crayon	SF001-c02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Monster Value Makeup Set	WM058-c02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Item description	Fragrance	1,1,2,2-Tetrachloroethane	1,4-Dioxane	1-Butanol	2-Butanone (MEK)	Acrylonitrile	Benzene	Carbon Disulfide	Ethylbenzene	Hexachloro-butadiene	Methylene Chloride	Styrene	Tetrachloro-ethylene	Toluene	Vinyl Chloride
Eau de toilette	JC000-C01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.22	0.0
Eau de parfum spray & Body lotion	MC001-C01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eau de parfum spray & Body lotion	MC001-C02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perfume & Body Wash	PF000-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perfume & Body Wash	PF000-d01	0.0	0.0	0.0	1.40	0.0	0.0	0.41	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eau de toilette	PF001-C01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Item description	Fragrance	1,1,2,2-Tetrachloroethane	1,4-Dioxane	1-Butanol	2-Butanone (MEK)	Acrylonitrile	Benzene	Carbon Disulfide	Ethylbenzene	Hexachloro-butadiene	Methylene Chloride	Styrene	Tetrachloro-ethylene	Toluene	Vinyl Chloride
Eau de toilette & Body lotion	PF002-C01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eau de toilette & Body lotion	PF002-C02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.49	0.0
Body spray	PF003-C01	0.0	0.0	0.0	230.0	0.0	0.0	0.55	0.0	0.0	0.0	0.0	0.0	1.90	0.0
Mickey Eau de Toilette	PF004-C01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adorable Eau de Toilette	PF005-CO1	0.0	0.0	0.0	0.0	0.0	0.0	0.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Body mist	TG058-C01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Most Wanted fragrance Body spray	TG065-C01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.0
Someday Eau de parfum spray	TG067-C01	0.0	0.0	0.0	2.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Item description	Lip balm	1,1,2,2-Tetrachloroethane	1,4-Dioxane	1-Butanol	2-Butanone (MEK)	Acrylonitrile	Benzene	Carbon Disulfide	Ethylbenzene	Hexachloro-butadiene	Methylene Chloride	Styrene	Tetrachloro-ethylene	Toluene	Vinyl Chloride
Princess lip balm & keychain in tube	FM007-c02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13	0.0	0.0	0.0	0.0	0.45	0.0
Daisy Duck large chapstick tube	WG000-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Princess keychain & chapstick	WM010-c02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.15	0.0	0.0	0.0	0.0	0.20	0.0
Lip smackers bath & Body collection	WM037-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Item description	Lip balm	1,1,2,2-Tetrachloroethane	1,4-Dioxane	1-Butanol	2-Butanone (MEK)	Acrylonitrile	Benzene	Carbon Disulfide	Ethylbenzene	Hexachloro-butadiene	Methylene Chloride	Styrene	Tetrachloro-ethylene	Toluene	Vinyl Chloride
Lip smackers bath & Body collection	WM037-c02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lip smackers bath & Body collection	WM037-c03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 Lip glosses with zipper pouch	WM053-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0

Item description	Miscellaneous	1,1,2,2-Tetrachloroethane	1,4-Dioxane	1-Butanol	2-Butanone (MEK)	Acrylonitrile	Benzene	Carbon Disulfide	Ethylbenzene	Hexachloro-butadiene	Methylene Chloride	Styrene	Tetrachloro-ethylene	Toluene	Vinyl Chloride
Childs Khaki pants	MC000-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Girly temp tattoos	TR006-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Boy temp tattoos	TR007-c01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0