Clean, Green & Healthy
Choosing Safer Household and Personal Care Products

Kate Winnebeck
Sr. Environmental Health & Safety Specialist
Email: kate.winnebeck@rit.edu
Phone: 585-475-5390

Breast Cancer Coalition of Rochester | March 26, 2014

New York State Pollution Prevention Institute (NYSP2I)
Rochester Institute of Technology (RIT)

Copyright © 2014 Rochester Institute of Technology (RIT)
Contains portions of some materials initially prepared with support of the US Environmental Protection Agency Great Lakes Restoration Initiative in the amount of $104,192 and by the NYS Pollution Prevention Institute through a grant from the NYS Department of Environmental Conservation.
Disclaimer

Although the information in this document has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement NE97201911-0 to the Rochester Institute of Technology, it has not gone through the Agency’s publications review process and, therefore, may not necessarily reflect the views of the Agency and no official endorsement should be inferred.

Any opinions, findings, and conclusions or recommendations expressed in this presentation and/or discussion do not necessarily reflect the views of the New York State Pollution Prevention Institute (NYSP2I) or the New York State Department of Environmental Conservation (NYSDEC).
New York State Pollution Prevention Institute

The vision of the NYSP2I is to foster the transformation and development of sustainable businesses and organizations in NYS in a collaborative program committed to making the State a leader in environmental stewardship.

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
- efficient use of raw materials, energy and water
Agenda

• Why should we be concerned about environmental health?
• Product safety regulations
• Chemicals that have been found in products
  – The concern
  – Products that contain them
  – How we are exposed
  – Actions you can take
• Product resources
Why should we be concerned about environmental health?

We are exposed to hundreds of chemicals every day – children are exposed to some chemicals more than adults and exposed to chemicals that adults may not be exposed to.

Chemicals enter our body – breathe them in, they pass through our skin, or we eat them – and many are stored in body fat.

Exposure linked to health effects
Children are more vulnerable & at higher risk of suffering effects than adults.

Johns Hopkins Women’s and Children’s Health Policy Center, Environmental Toxicants and Maternal and Child Health: An Emerging Public Health Challenge.
Product Safety Regulations

• Companies do not have to disclose to consumers what is in toys and other children’s & consumer products

• Consumer Product Safety Commission
  – Protects the public from unreasonable risk from consumer products
  – Protects from products that pose fire, electrical, chemical, or mechanical hazard or can harm children
  – Operates voluntary recall program

• CPSC can’t test products before sale to ensure they are safe

Endocrine Disruption

Disruption of the endocrine system can occur in various ways

1. MIMIC a natural hormone
   - Fools the body into over-responding (e.g. growth hormone that results in increased muscle mass)
   - Fools the body to respond at inappropriate times (e.g. producing insulin when not needed)

2. BLOCK the effects of hormones
   - For example, blocks growth hormones required for normal development

3. DIRECTLY STIMULATE or INHIBIT the endocrine system
   - Causes an overproduction or underproduction of hormones (e.g. an over- or under-active thyroid)

Exposure linked to: learning disabilities, severe attention deficit disorder, cognitive and brain development problems, deformations of the body, sexual development problems, feminizing of males, masculine effects on females

Link to Breast Cancer

Studies have shown a link between exposure to endocrine disruptors and breast cancer:

- Lifetime exposures to estrogen increases risk\(^1,2\)
- Exposure to non-natural estrogen may increase risk\(^3,4\)

Chemicals in everyday products are linked to endocrine disruption:

- **Phthalate & paraben exposure** is associated with numerous reproductive health and developmental problems\(^6,9\)
  - Exposure to diethyl phthalate may be associated with an increased risk of BC in premenopausal women\(^5\)
- **Brominated flame retardants** have been shown to bind to and activate estrogen receptors\(^7\)
- **Lead, mercury, and polybrominated diphenyl ethers** are associated with a greater likelihood of early menarche\(^8\)

---


\(^5\) López-Carrillo et al., Exposure to phthalates and breast cancer risk in northern Mexico, Environmental Health Perspectives, 118:4, April 2010

\(^6\) López-Carrillo et al., Exposure to phthalates and breast cancer risk in northern Mexico, Environmental Health Perspectives, 118:4, April 2010

\(^7\) Löpez-Carrillo et al., Exposure to phthalates and breast cancer risk in northern Mexico, Environmental Health Perspectives, 118:4, April 2010

\(^8\) Denham et al., Relationship of lead, mercury, Mirex, dichlorodiphenyldichloroethylene, hexachlorobenzene, and polychlorinated biphenyls to timing of menarche among Akwesasne Mohawk girls, Pediatrics, 2005:115; e127, 1/14/05

Flame Retardants

What are they?

• **Chemicals** added to plastics & foam products to make them less likely to catch fire and burn
• **Children’s exposure may be greater than adult’s**
• They are not chemically bound to the flame retardant, so they can more easily enter the environment
  – We are typically exposed through **aging and wear of consumer products** and **direct exposure from use**
  – We **inhale them or ingest dust** that contains them

**Bromine** is toxic to the liver, brain, reproductive system & may affect thyroid function

**High levels of antimony** can cause fertility problems and lung cancer in animals

**Chlorinated compounds** may cause cancer; damage to the liver, kidney, brain, and testes; and reproductive harm

United States Environmental Protection Agency, PBDEs, http://www.epa.gov/oppt/pbde/
Flame Retardants

What products typically contain them?

- **Foam**: couch cushions & upholstered furniture, car seats, carpet padding, molded foam children’s products
- **Fabrics**: upholstered furniture, curtains, children’s sleepwear
- **Electronics**: the outer case of TVs, video game consoles, DVD players, computers, etc.
Flame Retardants

What are the concerns?

Human Health Concerns

- PBDEs have been found in house dust
- Animal studies and detection of PBDEs in human tissue, blood, and breast milk raise concern for potential health hazards:
  - Liver toxicity
  - Disruption of thyroid function
  - Developmental toxicity
  - Neurobehavioral effects in children
  - Toxic to the brain & reproductive system
- Studies have not shown they cause cancer
- Studies have shown they bind to and activate estrogen receptors\(^1\)
- Stored in fat once absorbed

Environmental Concerns

- Persistent in the environment & bioaccumulate in the food chain

United States Environmental Protection Agency, PBDEs, [http://www.epa.gov/oppt/pbde/](http://www.epa.gov/oppt/pbde/)
Flame Retardants

Actions you can take

✓ Opt for materials that may not contain flame retardants, like leather, wool, or cotton
✓ When purchasing electronics, choose from brands that do not contain or are committed to phasing out brominated & chlorinated flame retardants
✓ Wash foam products & covers regularly with soap and water
✓ Avoid children chewing on electronic products, including toys
✓ Vacuum your home regularly with a HEPA filter
✓ Dust your home regularly
✓ Inspect and replace foam items when they start to rip, tear, or degrade
Phthalates

What is the concern?

- Group of chemicals commonly used as a softener in PVC plastic & components of fragrance in scented products
- Not bound to plastic so they can leach out
  - Ingested when we eat with dirty hands or children chew on plastic
  - Breathe when it offgasses from plastic
  - Breathe or absorb from scented products
- Controversial health effects, many are known/suspected endocrine disruptors
- Lead, cadmium, mercury, & arsenic are common PVC stabilizers

ASTDR, ToxFAQs, DEHP http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=377&tid=65
Phthalates

How are we exposed?

• People are mainly exposed through eating and drinking foods contaminated from their storage containers
  – Diet is the main source, particularly fatty foods
• Phthalates are highly soluble in oils – leach at a higher rate when in contact with oils & fats (think food storage containers)
• Heat increases leaching
• Exposure is greater when containers/material starts to show signs of wear and break down
• Used at concentrations of less than 10% in nail polish, hair spray, and solvents & perfumes in other products
• Soft toys typically contain 15-20% phthalates

CDC, National Report on Human Exposure to Environmental Chemicals, Phthalates Fact Sheet
ASTDR, ToxFAQs, DEHP http://www.atsdr.cdc.gov/toxFAQs/tf.asp?id=377&tid=65
Phthalates

What types of products contain them?

• **Products made from PVC**, such as plastic clothing/fabrics, vinyl decals & fabric, upholstery, floor tiles, food packaging, children’s products, adhesives, school & office supplies
  - Vinyl flooring contains DEHP that offgasses from the floor - difficult to measure amount, PVC flooring is associated with increased levels of phthalates in house dust
  - Soft toys typically contained 15-20% phthalates

• **Personal care products**, cosmetics & nail polish

• **Scented products**

More example products

- PVC & vinyl plastics, rubber, pesticides, adhesives, glue, caulk
- Soft plastic – bath toys, squeeze toys, teething rings, dolls
- Vinyl fabric – shower curtains, backpacks, binders
- Vinyl fabric coatings – decals, bibs, doll clothes
- Personal care & body products – hair spray, perfumes, cosmetics, nail polish, lotions
- Food containers & plastic wrap (Glad & Saran wraps are phthalate free)
- Foamed PVC – flooring material

## Commonly Used Phthalates and their Potential Effects

<table>
<thead>
<tr>
<th>Common Uses</th>
<th>Potential Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEHP [di(2-ethylhexyl)phthalate]</strong></td>
<td>Limited evidence of reproductive toxicity(^b)</td>
</tr>
<tr>
<td>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 &amp; cable sheathing, medical tubing, blood storage bags(^a)</td>
<td>Strong evidence of endocrine disruption(^c)</td>
</tr>
<tr>
<td></td>
<td>Respiratory toxicant(^d)</td>
</tr>
<tr>
<td></td>
<td>Possible human developmental toxicant(^e)</td>
</tr>
<tr>
<td><strong>DBP (di-n-butyl phthalate)</strong></td>
<td>Human immune system toxicant(^b)</td>
</tr>
<tr>
<td>carpets, paints, glue, insect repellents, hair spray, nail polish, and rocket fuel(^a)</td>
<td>Strong evidence of endocrine disruption(^c)</td>
</tr>
<tr>
<td></td>
<td>Possible human developmental toxicant(^e)</td>
</tr>
<tr>
<td><strong>Diethyl phthalate</strong></td>
<td>Human immune system toxicant(^b)</td>
</tr>
<tr>
<td>toothbrushes, automobile parts, tools, toys, food packaging, cosmetics, insecticides, and aspirin(^a)</td>
<td>Strong evidence of endocrine disruption(^c)</td>
</tr>
<tr>
<td></td>
<td>Limited evidence of reproductive toxicity(^b)</td>
</tr>
<tr>
<td><strong>Dimethyl phthalate (DMP)</strong></td>
<td>Human immune system toxicant(^b)</td>
</tr>
<tr>
<td>Dye carrier, plasticizer in hair spray, plasticizer in PVC, used in the past as a pesticide(^f)</td>
<td>Limited evidence of reproductive toxicity(^b)</td>
</tr>
</tbody>
</table>

\(^a\) 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  
\(^f\) US Hazardous Substances Data Bank
Phthalates

Prenatal exposure

Studies have linked prenatal exposure to problems in children:

- 3yo: decreases in psychomotor development, decrease in girl’s mental development, increase in behavioral problems\(^1\)
- 4-9yo: poor parent rated behavior; linked to aggression, attention problems, conduct problems, depression, ADHD, & externalizing problems\(^2\)
- 4-7yo: reduced masculine play in boys, no association with girls\(^3\)
- 7-9yo: poor social cognition, communication, awareness\(^4\)

1 Whyatt, R., et. al., Maternal Prenatal Urinary Phthalate Metabolite Concentrations and Child Mental, Psychomotor, and Behavioral Development at 3 years of age, Env Health Persp, 120:2, Feb 2012
2Engel, S, et. al., Prenatal Phthalate Exposure is Associated with Childhood Behavior and Executive Functioning, Env Health Persp, 118:4, April 2010.
3 Swan, S., Prenatal phthalate exposure and reduced masculine play in boys, Int J Androl, 2010 April, 33(2): 2590269
Phthalates

Risk to Children

- Children are at **especially high risk as they mouth things**
- Infants may have greater exposures from ingesting **indoor dust**
- Phthalates can **be transferred through breast milk** from mom to baby
- **Six phthalates were banned/restricted in 2009 from children’s products**
  - Children’s toys & articles limit DEHP, DBP, & BBP at 0.1%
  - Products in a child’s mouth limit DINP, DIDP, and DnOP at 0.1%
- Toys may contain DINP, DIDP, and DnOP
  - Most may cause **endocrine disruption or affect reproduction**
  - May affect the **ability to have children or cause birth defects**
- **Banned/restricted phthalates may be children’s products/toys made before 2009**

Phthalates

Actions you can take

✗ Avoid plastic with #3 or PVC identification
✗ Avoid products labeled “vinyl”
✔ Choose products labeled phthalate, vinyl, and/or PVC free
✔ Air out vinyl products before bringing them into your home
✔ Choose shower curtains made from safer plastics (i.e. EVA or PEVA) or fabric
✔ Choose toys made of safer plastics, wood, organic fabric, cloth
✔ Choose PVC free school & office supplies
Fragrance

What is the concern?

- We are exposed to a lot of scented products – personal care, cleaners, air fresheners, laundry soap, etc.
- Usually made up of a blend of chemicals
- May be from natural or synthetic sources

<table>
<thead>
<tr>
<th>Phthalates</th>
<th>Musks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvents/carriers for chemicals that create the scent</td>
<td>Man-made chemicals that replicate musk scents originally obtained from deer &amp; ox</td>
</tr>
<tr>
<td>Also in nail polish &amp; moisturizers</td>
<td></td>
</tr>
<tr>
<td><strong>Look for</strong> fragrance, -phthalate, parfum on the product label</td>
<td><strong>Look for</strong> fragrance, synthetic musk, musk on the product label</td>
</tr>
<tr>
<td>Linked to diabetes and asthma, potential risks to reproductive system &amp; thyroid</td>
<td>Potential hormone disruptors that may break down the body’s defenses against other chemicals</td>
</tr>
</tbody>
</table>

Fragrance

How are we exposed?

- **Breathe it in** – perfume, cleaners, air freshener, scented candles, other airborne products.
- **It is absorbed through the skin** – shampoo, soap, lotion, other personal care products, laundry soap on clothes & bed sheets.

Can hide many chemicals as the composition does not have to be disclosed on the label.

During use, fragrance can become airborne and is easily inhaled.

Nearly 38% of Americans report adverse effects when exposed to some kind of fragranced product.

---


EPA [http://www.epa.gov/oppt/existingchemicals/pubs/actionplans/phthalates.html](http://www.epa.gov/oppt/existingchemicals/pubs/actionplans/phthalates.html)

Perfume

Environmental Working Group & Campaign for Safe Cosmetics tested 17 name brand fragrances in 2010 & found:

- 24 chemical sensitizers
- 12 hormone disrupting chemicals
- 38 chemicals detected that were not listed on the product label

<table>
<thead>
<tr>
<th>Chemical Ingredients (tested + labeled)</th>
<th>Average for all 17 fragrances</th>
<th>Extreme product (highest number)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>29</td>
<td>40 - Giorgio Armani Acqua Di Gio</td>
</tr>
<tr>
<td>Secret chemicals (found in testing, not on label)</td>
<td>14</td>
<td>24 - American Eagle Seventy Seven</td>
</tr>
<tr>
<td>Sensitizing chemicals (can trigger allergic reactions)</td>
<td>10</td>
<td>19 - Giorgio Armani Acqua Di Gio</td>
</tr>
<tr>
<td>Hormone disruptors (can disrupt natural hormones)</td>
<td>4</td>
<td>7 - Halle by Halle Berry, Quicksilver, Jennifer Lopez J. Lo Glow</td>
</tr>
<tr>
<td>Chemicals not assessed for safety (by government or industry)</td>
<td>12</td>
<td>16 - Chanel Coco, Halle by Halle Berry, American Eagle Seventy Seven</td>
</tr>
</tbody>
</table>

Source: EWG analysis of 91 chemicals in 17 products – including 51 chemicals listed on product labels, and 38 unlabeled chemicals found in tests commissioned by the Campaign for Safe Cosmetics – combined with analysis of chemical hazard and toxicity data from government and industry assessments and the published scientific literature.
Actions you can take

✖ Avoid products with “-phthalate”, “musk”, “parfum”, or “fragrance” as an ingredient
✖ Avoid air fresheners and scented candles
✔ Choose **fragrance free products** labeled “free of perfumes and dyes,” “fragrance free”, or “unscented”
✔ Use **homemade unscented** cleaners & personal care products
✔ Choose **naturally scented products**
Personal Care Products

Use in the US

• On average, women use 12 products containing 168 ingredients every day
• Men use 6 products with 85 ingredients
• Children are exposed to an average of 61 ingredients daily

Body Burden

Shampoo
- Avg no. of chemicals: 15
- Possible side effects: irritation, eye damage

Fake Tan
- Avg no. of chemicals: 22
- Possible side effects: rashes, irritation, hormone disruption

Deodorant
- Avg no. of chemicals: 15
- Possible side effects: eye, skin, & lung irritation; headache; dizziness; respiratory problems

Nail Varnish
- Avg no. of chemicals: 31
- Possible side effects: fertility issues and problems in developing babies

Body Lotion
- Avg no. of chemicals: 32
- Possible side effects: rashes, irritation, hormone disruption

Perfume
- Avg no. of chemicals: 250
- Possible side effects: mouth, throat, and eye irritation; nausea; linked to kidney damage

Eyeshadow
- Avg no. of chemicals: 26
- Possible side effects: linked to cancer, infertility; hormonal disruptions and damage to the body’s organs

Blush
- Avg no. of chemicals: 16
- Possible side effects: rashes, irritation, hormonal disruption

Foundation
- Avg no. of chemicals: 24
- Possible side effects: allergies, disrupts immune system, links to cancer

Hair Spray
- Avg no. of chemicals: 11
- Possible side effects: allergies, irritation to eyes, nose, and throat; hormone disruption

Lipstick
- Avg no. of chemicals: 33
- Possible side effects: allergies, links to cancer
Preservatives

- Prevent bacteria from growing in water-based products
- **Parabens** are the most widely used preservatives and the most common parabens are methyl-, ethyl-, and butyl-
- Studies have detected parabens in breast tumors but it’s unclear whether the presence leads to cancer

**Parabens**

- **Look for** *methyl, ethyl, propyl, butyl parabens* on product labels
- **Found in** moisturizers, face & skin cleansers, shampoo, conditioner, sunscreen, toothpaste, makeup
- **Linked to** cancer, endocrine disruption, reproductive toxicity, immunotoxicity, neurotoxicity, skin irritation

FDA Parabens, [http://www.fda.gov/Cosmetics/ProductandIngredientSafety/SelectedCosmeticIngredients/ucm128042.htm](http://www.fda.gov/Cosmetics/ProductandIngredientSafety/SelectedCosmeticIngredients/ucm128042.htm)
Preservatives

- **Formaldehyde** is used as a preservative & is an impurity released by a number of cosmetic preservatives.
- About 20% of cosmetics & PCPs in the US contain a formaldehyde releasing chemical.

**Formaldehyde & Formaldehyde Releasing Preservatives**

- **Look for** DMDM hydantoin, diazolidinyl urea, Quaternium-15, bronopol, imidazolidinyl urea, formalin, formic aldehyde, merthaldehyde, methanal on labels.
- **FORMALDEHYDE** has been found in nail treatment, nail polish, eyelash glue.
- **DMDM HYDANTOIN** has been found in shampoo, conditioner, styling gel/lotion, body wash, moisturizer...
- **DIAZOLIDINYL UREA** has been found in conditioner, styling gel, foundation, moisturizer...
- **QUATERNIUM-15** has been found in eye shadow, facial powder, blush, foundation, body wash, mascara, baby & adult shampoo, conditioner...

**Known human carcinogen, asthmagen, neurotoxicant, developmental toxicant**

Can cause allergic skin reactions.

Antimicrobial

- Kills or slows the growth of bacteria
- **Triclosan** is commonly used in consumer products

### Triclosan

**Look for** *triclosan* on the product label

**Found in** antibacterial soap, toothpaste (to prevent gingivitis), deodorant, face & body wash, cosmetics, mouthwash, and other consumer products

**Linked to** thyroid function and emergence of bacteria resistant to antibacterial products, studies show it’s interaction with hormone receptors

**Toxic to** aquatic bacteria at levels found in the environment and inhibits photosynthesis in algae

---

**December 2013** - The US FDA issued a proposed rule to require manufacturers of antibacterial hand soaps and body washes to demonstrate their products are safe for long-term daily use and more effective than plain soap and water in preventing illness and the spread of certain infections. If companies do not demonstrate such safety and effectiveness, these products would need to be reformulated or relabeled to remain on the market.


FDA News Release, FDA issues proposed rule to determine safety and effectiveness of antibacterial soaps, [http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm378542.htm](http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm378542.htm)
Anti-Dandruff

• **Coal tar** is a by-product of the distillation of coal to produce coke or gas
• Active ingredient in OTC products

### Coal Tar

**Look for** `tar, coal; coal tar solution; carbo-cort; coal tar solution usp; coal tar, aerosol; crude coal tar; estar; impervotar; KC 261; lavatar; picis carbonis; aminophenol; diaminobenzene; phenylenediamine` on product labels

**May be found in** prescription & non prescription preparations to treat skin conditions, such as cleansing bars, gels, lotions, shampoos, and other topical solutions; ointments (1-10% coal tar) prescribed for psoriasis; shampoos to treat dandruff; ointments to treat eczema; hair dye

**Known human carcinogen**
**Linked to** cancer, endocrine disruption, reproductive toxicity, immunotoxicity, neurotoxicity, skin irritation

Antiperspirant & Deodorant

- **Aluminum** compounds slow the flow of sweat
  - Usually listed as *Aluminum Zirconium Tetrachlorohydrex GLY*

- Controversial research: *There is no conclusive research linking the use of underarm antiperspirants or deodorants and the subsequent development of breast cancer.*
  - Some research suggests that aluminum-based compounds may be absorbed by the skin and cause estrogen-like effects
  - Some scientists suggest that aluminum-based compounds may contribute to the development of breast cancer

- Alternatives: aluminum free products, reduced aluminum content

---


Aluminum content percentages from the product labels
Nail Polish

- May contain the “toxic trio”: dibutyl phthalate, toluene, and formaldehyde
- DBP is prohibited in cosmetics in Europe because it’s a possible human reproductive or developmental toxin¹
- USEPA restricts toluene in drinking water because it can cause nervous system disorders and damage the liver and kidneys²
- Formaldehyde is “known to be a human carcinogen”³

<table>
<thead>
<tr>
<th>Dibutyl phthalate (DBP)</th>
<th>Toluene</th>
<th>Formaldehyde</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adds flexibility</td>
<td>Helps suspend color</td>
<td>Found in nail hardeners</td>
</tr>
<tr>
<td>Moisturizing sheen</td>
<td>Helps forms a smooth finish</td>
<td></td>
</tr>
<tr>
<td>Helps dissolve other ingredients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reproductive &amp; developmental toxin, linked to feminizing effects in boys</td>
<td>Can cause headaches, dizziness, fatigue and is a possible reproductive &amp; developmental toxin</td>
<td>Known carcinogen; irritates the eyes, nose, and throat; can cause skin irritation</td>
</tr>
</tbody>
</table>

Nail Polish

- Look for brands that advertise as “three free” on the product packaging or company website
- May contain other ingredients of concern

<table>
<thead>
<tr>
<th>Organic Solvents</th>
<th>Acrylcs</th>
<th>Prevents Chipping</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Xylene</strong>: toxic by all routes of exposure, can cause headache, dizziness, skin and eye irritation, kidney and liver impairment(^1); very persistent in air(^2)</td>
<td><strong>Methyl methacrylate</strong>: vapors irritate eyes, nose, and throat; irritates skin(^1); toxic to fish(^2)</td>
<td><strong>Benzyl acetate</strong>: irritating to skin, eyes, and respiratory tract(^1); toxic to fish, very persistent in air(^2)</td>
</tr>
<tr>
<td><strong>Methyl ethyl ketone</strong>: vapors irritate eyes, nose &amp; throat(^1); very persistent in air(^2)</td>
<td><strong>Ethyl methacrylate</strong>: vapors irritate eyes and respiratory system, irritates skin(^1); toxic to fish(^2)</td>
<td></td>
</tr>
<tr>
<td><strong>Acetone</strong>: vapors irritate eyes, nose, and throat(^1); very persistent in air(^2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2 PBT Profiler, [http://www.pbtprofiler.net](http://www.pbtprofiler.net)
<table>
<thead>
<tr>
<th>Product</th>
<th>Common ingredients</th>
<th>Ingredient concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blush</td>
<td>Talc, powdered silica, alumina, coal tar dyes, acrylates, <strong>parabens</strong></td>
<td>Neurotoxic, strong irritants, <strong>endocrine disruptors</strong></td>
</tr>
<tr>
<td>Mineral makeup</td>
<td>Bismuth oxychloride</td>
<td>Irritate sensitive skin, cause redness &amp; itching</td>
</tr>
<tr>
<td>Face powder</td>
<td>Talc, powdered silica, <strong>coal tar dyes</strong>, <em>quaternium-15</em>, lanolin, <em>fragrances</em>, <strong>parabens</strong>, triclosan</td>
<td>Can release <strong>formaldehyde</strong>, allergic reactions, skin irritation, <strong>endocrine disruption</strong></td>
</tr>
<tr>
<td>Foundation</td>
<td>Talc, powdered silica, alumina, octenylsuccinate, mineral oil, TEA, <strong>parabens</strong>, <em>quaternium-15</em>, fragrance, <strong>coal tar dyes</strong></td>
<td>Neurotoxic, irritate skin, promote acne, may contain <strong>formaldehyde</strong>, <strong>endocrine disruption</strong></td>
</tr>
<tr>
<td>Concealer</td>
<td><strong>Propylene glycol</strong>, polyethylene glycol, <strong>parabens</strong>, retinyl palmitate, may be contaminated with <strong>1,4-dioxane and ethylene oxide</strong></td>
<td>Skin irritants, <strong>endocrine disruption</strong>, cause gene mutations &amp; damage DNA, contaminants are <strong>suspected &amp; known carcinogens</strong></td>
</tr>
<tr>
<td>Eyeshadow</td>
<td><strong>Coal tar dyes</strong>, talc, powdered silica, BHA, <strong>parabens</strong></td>
<td><strong>Carcinogens, endocrine disruptors</strong> Creams: allergens Glitter: linked to <strong>cancer</strong> &amp; neurotoxic effects</td>
</tr>
<tr>
<td></td>
<td>Cream: mineral oil, petrolatum, &amp; lanolin oil Glitter: <strong>aluminum</strong> or bronze</td>
<td></td>
</tr>
<tr>
<td>Mascara</td>
<td><strong>Petroleum distillates</strong>, phenoxyethanol, propylene glycol, <strong>TEA</strong>, <strong>parabens</strong>, synthetic plastics, <strong>BHA</strong></td>
<td>Skin &amp; eye irritation, <strong>endocrine disruption</strong>, immune system toxicant</td>
</tr>
<tr>
<td>Lipstick</td>
<td><strong>Coal tar dyes</strong>, <strong>parabens</strong>, sunscreen chemicals, fragrance</td>
<td>Skin irritation, <strong>endocrine disruption</strong></td>
</tr>
</tbody>
</table>

Ingredients in Children’s Personal Care Products

2007 survey of 3,300 parents to identify the personal care products their children use

The survey found

- Infants are exposed to **45 chemicals every day** & 40% have not been found safe for kids
- 82% are exposed to 1+ ingredients linked to **brain and nervous system damage**
- 69% are exposed to 1+ **endocrine disruptor**
- 4% are exposed to 1+ ingredients linked to **cancer**
- 41% of products warn “keep out of reach of children”

Environmental Working Group, Hazardous and Untested Chemicals in Children’s Products, [http://www.ewg.org/files/Child%27sStudyAttachment.pdf](http://www.ewg.org/files/Child%27sStudyAttachment.pdf)
Case Study: J&J Baby Shampoo

• March 2009: Compact for Safe Cosmetics reports that Johnson’s baby shampoo contains 2 cancer causing chemicals

• October 2011: J&J to phase out the carcinogenic preservatives from baby products

• January 2014: cancer causing preservatives replaced, will start seeing the product on store shelves in first half of 2014

Revising a Formula for Baby Shampoo

Responding to pressure from consumers’ groups, Johnson & Johnson revised the ingredients in its baby shampoo to remove a formaldehyde-releasing preservative called quaternium-15.

**Johnson's No More Tears Baby Shampoo**

**OLD FORMULATION**

Ingredients: Water, Cocamidopropyl Betaine, PEG-80 Sorbitan Laurate, Sodium Trideceth Sulfate, PEG-150 Distearate, Fragrance, Tetrasodium EDTA, Polyquaternium-10, Quaternium-15, Sodium Hydroxide, Citric Acid, Yellow 10, Orange 4.

**REMOVED:**

*Quaternium-15 a formaldehyde-releasing preservative*

**NEW FORMULATION**

Ingredients: Water, PEG-80 Sorbitan Laurate, Cocamidopropyl Betaine, Sodium Trideceth Sulfate, PEG-150 Distearate, Phenoxyethanol, Glycerin, Citric Acid, Fragrance, Sodium Benzoate, Tetrasodium EDTA, Polyquaternium-10, Ethylhexylglycerin, Sodium Hydroxide, Potassium Acrylates Copolymer, Yellow 6, Yellow 10.

**ADDED:**

Potassium Acrylates Copolymer helps maintain proper shampoo thickness

Phenoxyethanol, Sodium Benzoate and Ethylhexylglycerin components of the new preservative system

Glycerin helps with moisturization

---

Personal Care Products

Alternatives

• Paraben, triclosan, fragrance, phthalate-free products
  – Price varies from cost competitive to significantly more
  – Performance varies from better than to not as good as conventional counterparts
  – Consider products without these ingredients may perform differently – ie. shampoo without sodium lauryl sulfate will not be as foamy
  – Consider if the ingredient is necessary – ie. Does hand/body soap have to be antimicrobial? Does face soap have to be pH balanced? Does the scent matter?

• Antiperspirant/deodorant with lower levels of aluminum or aluminum free
  – Many lower level & aluminum free versions are cost competitive
  – Consider performance of products with less aluminum

• Nail polish without DBP, toluene, formaldehyde
  – Cost competitive
  – Function as good as if not better than polish with these ingredients
Personal Care Products

What you can do

• Eliminate unnecessary products
• Prioritize high exposure, frequently used products for replacement
• Choose organic products
• Buy from companies you trust
• Make your own products
• Choose products without harsh chemicals
  – Shampoos & body washes without SLS, phthalates, parabens
  – Lotions without parabens
  – Nail polish without the toxic trio
  – Skip perfume & antibacterial products
• Use tools to help you choose safer products
What is the California Safe Cosmetics Program Product Database?

The California Safe Cosmetics Act (the Act) requires companies that manufacture cosmetics to report any cosmetics products that contain ingredients known or suspected to cause cancer, birth defects, or other reproductive harm. The California Safe Cosmetics Program (CSCP) collects this data and makes it available to the public through this website.

Are you curious to see what ingredients have been reported for your shampoo? Want to compare the ingredients of different sunscreens? You can search the database for a type of product; a specific product name; or a brand or company name.

You can also read more about chemical ingredients, learn about how chemical exposure can affect your health, or learn more about the California Safe Cosmetics Program by clicking on links to the right.

More information on the California Safe Cosmetics Program website.

California Safe Cosmetics Program Product Database
https://www.safecosmeticsact.org/search/

- CA Act requires companies to report cosmetics products sold within the state that contain ingredients known or suspected to cause cancer, birth defects, or other reproductive harm.
- Search by product, chemical, or company
Product Name: Dove Beauty Bar (all variants)

Reported By: Conopco, Inc.
Brand: Dove
Category: Bath Products - Body Washes and Soaps
Date Reported: 10/9/2009
Updated On: 6/30/2010

Ingredients reported for this product include:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Date Reported</th>
<th>Date Removed *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titanium dioxide</td>
<td>10/9/2009</td>
<td></td>
</tr>
</tbody>
</table>

* If a product has been reformulated and the reported ingredient removed from the product, "Date Removed" refers to the date of reformulation.

The cosmetics ingredients listed here were reported to the California Safe Cosmetics Program (CSCP). Not all information has been verified. Reporting is required regardless of the amount of the ingredient in the product. Inclusion of a product in this database does not necessarily mean that it has been shown to cause harm. For more on which companies are required to report to the CSCP and the chemicals included in the CA Safe Cosmetics Act, please refer to the FAQ section of this website.
Do your purchases meet your personal standards?

Best Soap Ratings

Our scientists have rated 3,476 Soap products

GoodGuide scientifically rates the health, environmental, and social performance of products and companies.

**GoodGuide**
http://www.goodguide.com/

- Search for personal care products & other consumer products by name
- Search for product types, companies, ingredients
- Products have 3 ratings: health, environment, society
- Rating system: 0 worst – 10 best
Dove White Bar Soap - 2-4.25 Oz

Rank: 250 out of 1,642 Bar Soaps · Company: Unilever Home & Personal Care

Health

6.0
This product has insufficient ingredient information.

Human Health Impacts

6.0

Level of Health Concern of Ingredients

7.0
LOW CONCERN
Lauric Acid
Cocamidopropyl Betaine
Tetrasodium EDTA

Data Adequacy, Ingredient Disclosure

6.0

Environment

6.5
This company's environmental policies, practices and performance place it among the best 25% of companies rated by GoodGuide.

Society

6.2
This company's social policies, practices and performance place it among the best 10% of companies rated by GoodGuide.
New York State Pollution Prevention Institute

Skin Deep Cosmetics Database

http://www.ewg.org/skindeep

• Search for personal care products by name
• Search for personal care product types, companies, ingredients
• Tips & ingredient facts
• Rating system: 0 best – 10 worst
### Ingredient Concerns

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRAGRANCE</td>
<td>Ecotoxicology, Allergies/immunotoxicity, Irritation (skin, eyes, or lungs), Miscellaneous, Organ system toxicity (non-reproductive)</td>
</tr>
<tr>
<td>Ingredient</td>
<td>Concerns</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>FRAGRANCE</td>
<td>Ecotoxicology, Allergies/immunotoxicity, Irritation (skin, eyes, or lungs), Miscellaneous, Organ system toxicity (non-reproductive)</td>
</tr>
<tr>
<td>COCAMIDOPROPYL BETAINES</td>
<td>Ecotoxicology, Allergies/immunotoxicity, Contamination concerns (COCAMIDOPROPYL DIMETHYLAMINE, 3-DIMETHYLAMINOPROPYLAMINE, NITROSAMINES-in the presence of nitrosating agents), Use restrictions</td>
</tr>
<tr>
<td>TITANIUM DIOXIDE</td>
<td>Organ system toxicity (non-reproductive), Occupational hazards</td>
</tr>
<tr>
<td>SODIUM PALMITATE</td>
<td>Ecotoxicology, Multiple, additive exposure sources</td>
</tr>
<tr>
<td>TETRASODIUM EDTA</td>
<td>Enhanced skin absorption, Organ system toxicity (non-reproductive), Occupational hazards</td>
</tr>
</tbody>
</table>
EWG’s Guide to Sunscreens
http://www.ewg.org/2013sunsceen/
• Rates the safety and efficacy of 1,800 SPF products
• Products with high ratings provide broad spectrum, long lasting protection, with ingredients that pose low human health concerns
• Anticipate 2014 released mid-May
To register, email greenhomes@rit.edu

March 18
How Green is Your Clean?

March 26
Safer Household Products

April 2
Hazardous Waste at Home

April 9
Potential Hidden Dangers of Personal Care Products

The Green Homes for Cleaner Lakes brochure is available for download and distribution!

This trifold brochure summarizes key concepts and Actions You Can Take from all four of the workshops – green cleaning, household hazardous waste, safer household products, and personal care products.

To request printed copies to distribute through your organization, contact Bonnie at 585-475-2512 or bswasp@rit.edu.