

Not Too Pretty

Phthalates,
Beauty Products
& the FDA

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Phthalates, Beauty Products & the FDA

Chemicals that cause birth defects do not belong in products marketed to women of childbearing age

Summary

In May 2002 a coalition of environmental and public health organizations contracted with a major national laboratory to test 72 name-brand, off-the-shelf beauty products for the presence of phthalates, a large family of industrial chemicals linked to permanent birth defects in the male reproductive system. The laboratory found phthalates in nearly three-quarters of the products tested (52 of 72 products, Table 1), including nine of 14 deodorants, all 17 fragrances tested, six of seven hair gels, four of seven mousses, 14 of 18 hair sprays, and two of nine hand and body lotions (Table 2), in concentrations ranging from trace amounts to nearly three percent of the product formulation.

Major loopholes in federal law allow the \$20-billion-a-year cosmetics industry to put unlimited amounts of phthalates into many personal care products with no required testing, no required monitoring of health effects, and no required labeling. To our knowledge, the 72 product tests detailed in this study represent the most comprehensive information available on the occurrence of phthalates in individual beauty care products. None of the 52 phthalate-containing products lists the offending chemical on its ingredient label.

In animal tests some phthalates damage the developing testes of offspring and cause malformations of the penis and other parts of the reproductive tract. The same phthalates that cause permanent harm of the male reproductive system in laboratory studies are also found in hair spray, deodorant, and fragrances – big-name products like Revlon, Calvin Klein, Christian Dior, and Procter & Gamble. The laboratory found phthalates in Pantene Pro V “Healthy Hold” and Aqua Net hair sprays, Arrid and Degree deodorants, and fragrances like Poison by Christian Dior and Coty’s Healing Garden Pure Joy Body Treatment, to name just a few (Table 2).

Chemicals that cause birth defects do not belong in products marketed to women of childbearing age. Although the 72 items tested here represent just a minute fraction of the market, the

Table 1. At least five different phthalates are present in cosmetic products

| | Percent of products tested or surveyed that contain this phthalate (and number of products out of the 72 products tested) | Types of products | Average concentration from all positive tests (parts per million) | Maximum concentration found (parts per million) |
|-------------------------------|---|---|---|---|
| All phthalates tested | 72 percent (52 products) | Deodorant, fragrance, hair gel, hair mousse, hair spray, hand and body lotions, nail polish | | |
| Diethyl phthalate (DEP) | 71 percent (51 products) | Deodorant, fragrance, hair gel, hair mousse, hair spray, hand and body lotions | 4070 | 28,000 (or 2.8 percent) |
| Dibutyl phthalate (DBP) | 67 percent* | Nail polish | 50,000 (or 5 percent)* | N/A |
| Dibutyl phthalate (DBP) | 8 percent (6 products) | Deodorant, fragrance, hair spray | 275 | 890 |
| Butylbenzyl phthalate (BBzP) | 6 percent (4 products) | Fragrance, hair spray | 14 | 46 |
| Diethylhexyl phthalate (DEHP) | 4 percent (3 products) | Fragrance | 11 | 25 |
| Dimethyl phthalate (DMP) | 1 percent (1 product) | Deodorant | 33 | 33 |

Source: Environmental Working Group compilation of product testing results from Stat Analysis Corporation, Chicago, Illinois.

*All results shown reflect data from laboratory chemical analysis except results for nail polish, which stem from an EWG analysis of nail polish ingredient labels and nail polish patent records.

test results indicate in all likelihood a substantial fraction of beauty products available on store shelves contain phthalates.

Government data show that women are exposed to individual phthalates at levels above federal safety standards

In September 2000, researchers at the Centers for Disease Control and Prevention (CDC) reported that they found seven phthalates in the bodies of 289 persons tested, and that every person tested had a particular phthalate called dibutyl phthalate, or DBP, in their body. The ubiquity of phthalates in the general population surprised the scientists: “From a public health perspective, these data provide evidence that phthalate exposure is both higher and more common than previously suspected.” (Blount et al 2000).

But the biggest surprise came when the researchers broke the data down by age and gender for the phthalate called DBP. They discovered that the most critical population, women of child-bearing age whose fetuses are exposed to DBP in the womb, appear to receive the highest exposures. CDC scientists found that DBP exposures for more than two million women of child-bearing age may be up to 20 times greater than for the average person in the population. Even more significantly, the highest

Phthalate exposure is both higher and more common than previously suspected

— CDC Scientists, 2000

exposure estimates for women of childbearing age were above the federal safety standard (Blount et al 2000, Kohn et al 2000, EPA 1990).

Buyer beware: nail polish, deodorant, fragrances, hair spray

When CDC scientists found high levels of DBP in some women's bodies, they speculated that cosmetics might be a source. In a study published in November 2000 (EWG 2000), the Environmental Working Group identified popular nail care products that contain DBP, including polishes, top coats, and hardeners made by L'Oréal, Maybelline, Oil of Olay, and others.

We spent \$175 per product to determine if phthalates are present, a cost hardly within the budget of most pregnant women trying to steer clear of myriad products that could potentially harm a fetus

Eight months later, Urban Decay, a California-based company whose DBP-containing nail polish was highlighted in EWG's study (EWG 2000), announced it had reformulated its entire line of nail polish to be DBP-free, and called on other cosmetics companies to "eliminate this dangerous chemical from their formulas" (Urban Decay, June 11 2002). But our updated survey shows that most companies have not been as progressive: in a limited, online drugstore search conducted last month, we found that 67 percent of the nail polishes surveyed (16 of 24) contain dibutyl phthalate (Table 1).

Phthalates in nail polish are subject to federal labeling requirements, and therefore they appear on ingredient lists posted on the back of nail polish bottles or on the box. Not so for the 72 other products we tested in this study, none of which listed the "phthalate" chemical on its label. In these products, phthalates are claimed as fragrances or as a part of trade secret formulas, and are exempt from federal labeling requirements. We spent \$175 per product to determine if phthalates are present, a cost hardly within the budget of most pregnant women trying to steer clear of myriad products that could potentially harm a fetus.

People are exposed to more than one phthalate

Our testing showed the presence of five individual phthalates in cosmetics. CDC tested for the presence of seven phthalates in people's bodies and found all seven (Blount et al 2000). But when setting safety standards, the government still assumes that no one is exposed to more than one phthalate at a time. And they also assume that people's bodies are completely free of phthalates prior to the exposure being considered in any given safety assessment, whether it be for phthalates in food, drugs, cosmetics, medical supplies, or consumer products. CDC's studies show that both of these assumptions are wrong.

Table 2. Phthalates were found in all 17 fragrances tested

| Contains phthalates | No detected phthalates |
|--|--|
| DEODORANT | |
| Arrid Extra Extra Dry Maximum Strength Solid | Certain Dri Anti-Perspirant Roll-On |
| Arrid Extra Extra Dry Ultra Clear Ultra Clean Spray | Dove Powder Anti-Perspirant Deodorant |
| Arrid Extra Extra Dry Ultra Clear Ultra Fresh Spray | Lady Speed Stick Soft Solid Anti-Perspirant |
| Ban Delicate Powder Roll On | Secret Anti-Perspirant & Deodorant Platinum Protection Ambition Scent |
| Degree Original Solid Anti-Perspirant & Deodorant | Soft & Dri Anti-Perspirant Deodorant Clear Gel |
| Dove Solid Anti-Perspirant Deodorant | |
| Secret Sheer Dry Regular | |
| Secret: Powder Fresh Aerosol | |
| FRAGRANCE | |
| Calgon Hawaiian Ginger Body Mist | |
| Calgon Turquoise Seas Body Lotion | |
| Charlie Cologne Spray | |
| Escape by Calvin Klein | |
| Eternity by Calvin Klein | |
| Fire & Ice Cologne Spray | |
| Freedom | |
| Jovan White Musk | |
| Lancome Paris Tresor | |
| Liz Claiborne Eau De Toilette Spray | |
| Oscar | |
| Parfums de Coeur White Tahitian Ginger Fantasy | |
| Poison by Christian Dior | |
| Red Door | |
| The Healing Garden Pure Joy Body Treatment | |
| White Diamonds Elizabeth Taylor | |
| Wind Song Extraordinary Cologne by Prince Matchabelli | |
| HAIR GEL | |
| Clairol Herbal Essences Natural Volume Body Boosting Gel | Physique Extra Control Structuring Gel |
| Dep Level 4 Shine Gel | |
| LA Looks Styling Gel: Extra Super Hold | |
| Suave Naturals Ocean Breeze Extra Control Spray Gel | |
| TRESemme European Slick Melting Gel | |
| Pantene Pro V Spray Gel Volumizing Root Lifter | |
| HAIR MOUSSE | |
| Aussie Megahold Mousse | Finesse Touchables Silk Protein Enriched Mousse |
| Clairol Herbal Essences Styling Mousse Maximum Hold | Helene Curtis Thermasilk Heat Activated Mousse for Fine/Thin Hair |
| Helene Curtis Salon Selectives Rise Up Volumizing Mousse | L'Oreal Paris Studio Line: Springing Curls Mousse |
| Pantene Pro V Mousse Body Builder | |

Table 2 (con't).

| Contains phthalates | No detected phthalates |
|---|--|
| HAIR SPRAY | |
| Aqua Net Professional Hair Spray | Aussie Mega Styling Spray |
| Herbal Essences Non Aerosol Hairspray | Helene Curtis Finesse Touchables Silk Protein Enriched |
| Jheri Redding Finishers Flexible Hold Hairspray | Helene Curtis Thermasilk Heat Activated Firm Hairspray |
| Pantene Pro V Strong Hold Spray | Suave Naturals Aloe Vera Extra Hold Hairspray |
| Pantene Pro V Stronghold Healthy Hold Spray | |
| Rave 4x Mega | |
| Redken Cat Finishing Spritz | |
| Salon Selectives Hold Tight Style Freeze Maximum Hold Finishing Spray | |
| Sebastian Collection Shaper Plus | |
| Suave Maximum Hold Hairspray Unscented, non-aerosol | |
| Suave Naturals Extra Flexible Hold Non Aerosol Hairspray | |
| Freesia | |
| TREsemme European Freeze-Hold Hair Spray | |
| VO5 Crystal Clear 14 Hour Hold | |
| Vidal Sassoon Microfine Mist Hair Spray, Aerosol | |
| HAND AND BODY LOTION | |
| Jergens Skincare Original Scent Lotion | Curel Soothing Hands Moisturizing Hand Lotion |
| Nivea Crème | Eucerin Dry Skin Therapy Original Moisturizing Lotion |
| | Lubriderm Skin Therapy Moisturizing Lotion |
| | Neutrogena Hand Cream |
| | Suave Naturals Sun Ripened Moisturizing Body Lotion |
| | Vaseline Intensive Care Advanced Healing |
| | Vaseline Intensive Care Dry Skin Lotion |
| NAIL POLISH* | |
| Avon beComing Radiant Long Last Nail Gloss | Kiss Colors Nail Polish |
| Cover Girl NailSlicks | L'Oreal Jet Set Nail Enamel |
| Maybelline Express Finish Fast-Dry Nail Enamel | L'Oreal Jet-Set Quick Dry Nail Enamel |
| Maybelline Ultimate Wear Nail Enamel | Maybelline Shades of Your Nail Color |
| Naturistics Super Shine Nail Gloss | Naturistics 90 Second Dry! Super Fast Nail Color |
| Oil of Olay Nail Laquer | Revlon Nail Enamel |
| OPI Nail Laquer | Revlon Super Top Speed |
| Orly Salon Nails French Manicure | Urban Decay |
| Orly Salon Nails Nail Color | |
| Sally Hansen Chrome Nail Makeup | |
| Sally Hansen Hard as Nails Nail Polish | |
| Sally Hansen Hard as Nails With Nylon Nail Polish | |
| Sally Hansen Teflon Tuff Nail Color | |
| Tropez Nail Enamel | |
| Wet N Wild Crystallic Calcium Enriched Nail Color | |
| Wet N Wild Nail Color | |

Source: Environmental Working Group compilation of product testing results from Stat Analysis Corporation, Chicago, Illinois.

*All results shown reflect data from laboratory chemical analysis except results for nail polish, which stem from an EWG analysis of nail polish ingredient labels and nail polish patent records.

Cosmetics are just one possible source of phthalates in people's bodies, and may be the source that leads to high exposures for some women tested by the CDC. But government studies have made it increasingly clear that people are routinely exposed to multiple phthalates, sometimes at high levels, that can be found in a startling array of everyday products - from food wrap to shower curtains, from automobile interiors to grout and paint, and from pesticides to hospital supplies and cosmetics.

The Food and Drug Administration holds a substantial fraction of the power that could be used to reduce people's exposures to phthalates, through their authority to regulate food, drugs, cosmetics, and medical supplies, all of which can contain phthalates. Yet, when confronted with new evidence of high levels of phthalates in people, they have chosen to do almost nothing to mitigate exposures. Under political pressure and after a citizen's petition from Health Care Without Harm, FDA recently conducted a focused safety assessment on the phthalate called diethylhexyl phthalate (DEHP) in hospital supplies, concluding that newborn baby boys in the hospital can be overexposed to DEHP that leaches from plastic tubing, IV, and food bags (FDA 2001).

Despite this finding, now nine months old, FDA has yet to make recommendations to doctors and hospitals on how to mitigate exposures. FDA has taken no action to reduce the use of phthalates in cosmetics, drugs, and food packaging, despite mounting evidence showing that some people are exposed to potentially dangerous levels of phthalates.

Seventeen years ago, the largely self-policing safety review board of the cosmetics industry, the Cosmetics Industry Review, or CIR, published a safety assessment concluding that phthalates "are safe for topical application in the present practices of use and concentrations in cosmetics." On June 18, 2002, the expert panel of the CIR voted to update this review. Considering the breadth of what has been learned of phthalate toxicity and human exposures in the past 17 years, The CIR decision to re-review is a responsible and hopeful step that should serve as a signal to the cosmetics industry.

Phthalates are dangerous

More than two decades ago, scientists began building a body of work indicating that phthalates like DEHP and DBP can be a powerful reproductive and developmental toxicant in laboratory animals, particularly for males. Early studies focused on phthalates' ability to cause testicular atrophy (e.g., Gray et al 1980), but phthalates are now known to cause a broad range of birth defects and lifelong reproductive impairment in laboratory ani-

FDA has taken no action to reduce the use of phthalates in cosmetics, drugs, and food packaging, despite mounting evidence showing that some people are exposed to potentially dangerous levels of phthalates

Table 3. DEP was found in all types of cosmetic products tested

| | Total products tested | All phthalates tested | Diethyl phthalate (DEP) | Dibutyl phthalate (DBP) | Butylbenzyl phthalate (BBzP) | Diethylhexyl phthalate (DEHP) | Dimethyl phthalate (DMP) |
|-----------------------|-----------------------|-----------------------|-------------------------|-------------------------|------------------------------|-------------------------------|--------------------------|
| All products tested | 72 | 72 % (52) | 71 % (51) | 8 % (6) | 6 % (4) | 4 % (3) | 1 % (1) |
| Deodorant | 14 | | 64 % (9) | 14 % (2) | | | 7 % (1) |
| Fragrance | 17 | 100 % (17) | 100 % (17) | 12 % (2) | 6 % (1) | 18 % (3) | |
| Hair gel | 7 | 86 % (6) | 86 % (6) | | | | |
| Hair mousse | 7 | 57 % (4) | 57 % (4) | | | | |
| Hair spray | 18 | 78 % (14) | 72 % (13) | 11 % (2) | 17 % (3) | | |
| Hand and body lotions | 9 | 22 % (2) | 22 % (2) | | | | |
| Nail polish* | 24 | 67 % (16) | Not tested | 67 % (16) | Not tested | Not tested | Not tested |

Source: Environmental Working Group compilation of product testing results from Stat Analysis Corporation, Chicago, Illinois.

*All results shown reflect data from laboratory chemical analysis except results for nail polish, which stem from an EWG analysis of nail polish ingredient labels and nail polish patent records.

Phthalate exposures damage the testes, prostate gland, epididymis, penis, and seminal vesicles in laboratory animals.

Most of these effects persist throughout the animal's life.

mals exposed in-utero and shortly after birth (e.g., Ema et al 1998, Marsman et al 1995, Mylchreest et al 1998, 1999, and 2000, Gray et al 1999, Wine et al 1997).

Scientists have shown that phthalates can damage the female reproductive system, but it is the male reproductive system that appears to be more sensitive. Phthalate exposures damage the testes, prostate gland, epididymus, penis, and seminal vesicles in laboratory animals (see, for example, Mylchreest et al 1998). Most of these effects persist throughout the animal's life, and include, specifically:

Testicular atrophy — a defect that leads to reduced capacity to form sperm and male sex hormones;

Hypospadias — a defect of the penis in which the opening occurs on the bottom of the penis instead of the tip;

Undescended testicles — a condition in which the testes fail to descend into the scrotal sac during pregnancy;

Ectopic testes — a condition in which testes are grown outside the scrotal sac;

Absent testes — testes are not formed at all;

Absent prostate gland — the prostate gland contributes liquid secretions to semen;

Absent or small seminal vesicles — these structures, like the prostate gland, contribute liquid secretions to semen;

Reduced sperm count — leads to reduced fertility;

Malformed or absent epididymis — the epididymis is the structure where sperm mature and are stored.

Trends in human male reproductive health include many of the same effects seen in lab animals dosed with phthalates. Although a cause and effect relationship has not been established, the ubiquity of phthalates in the human population vali-

Table 4. DEP is present at very high levels in fragrances

| Product type | Product name | Results (parts per million) |
|--------------------------------|---|-----------------------------|
| DIBUTYL PHTHALATE (DBP) | | |
| Fragrance | The Healing Garden Pure Joy Body Treatment | 890 |
| Deodorant | Arrid Extra Extra Dry Ultra Clear Ultra Fresh Spray | 200 |
| Fragrance | Poison by Christian Dior | 38-260 |
| Hair spray | Aqua Net Professional Hair Spray | 160 |
| Deodorant | Arrid Extra Extra Dry Ultra Clear Ultra Clean Spray | 140-150 |
| Hair spray | Vidal Sassoon Microfine Mist Hair Spray, Aerosol | 55 |
| DIETHYL PHTHALATE (DEP) | | |
| Fragrance | Red Door | 28000 |
| Fragrance | Lancome Paris Tresor | 25000 |
| Fragrance | White Diamonds Elizabeth Taylor | 23000 |
| Fragrance | Charlie Cologne Spray | 21000 |
| Fragrance | Wind Song Extraordinary Cologne by Prince Matchabelli | 20000 |
| Fragrance | Fire & Ice Cologne Spray | 17000 |
| Fragrance | Liz Claiborne Eau De Toilette Spray | 14000 |
| Fragrance | Eternity by Calvin Klein | 10000 |
| Fragrance | Oscar | 9400 |
| Fragrance | Escape by Calvin Klein | 8900 |
| Fragrance | The Healing Garden Pure Joy Body Treatment | 7300 |
| Fragrance | Calgon Hawaiian Ginger Body Mist | 7200 |
| Fragrance | Parfums de Coeur White Tahitian Ginger Fantasy | 4200 |
| Fragrance | Poison by Christian Dior | 3400-4200 |
| Deodorant | Arrid Extra Extra Dry Maximum Strength Solid | 2900-3300 |
| Hair spray | VO5 Crystal Clear 14 Hour Hold | 1500 |
| Deodorant | Arrid Extra Extra Dry Ultra Clear Ultra Clean Spray | 1100-1200 |
| Deodorant | Arrid Extra Extra Dry Ultra Clear Ultra Fresh Spray | 1100 |
| Fragrance | Freedom | 570 |
| Hair spray | Redken Cat Finishing Spritz | 520 |
| Deodorant | Ban Delicate Powder Roll On | 400 |
| Fragrance | Calgon Turquoise Seas Body Lotion | 350 |
| Hair spray | Jheri Redding Finishers Flexible Hold Hairspray | 320 |
| Hair spray | Aqua Net Professional Hair Spray | 250 |
| Hair gel | LA Looks Styling Gel: Extra Super Hold | 220 |
| Hair spray | Herbal Essences Non Aerosol Hairspray | 210 |
| Hair spray | TRESemme European Freeze-Hold Hair Spray | 210 |
| Hair spray | Rave 4x Mega | 170 |

Table 4 (con't).

| Product type | Product name | Results (parts per million) |
|--|---|-----------------------------|
| DIETHYL PHTHALATE (DEP) (CONTINUED) | | |
| Deodorant | Degree Original Solid Anti-Perspirant & Deodorant | 140 |
| Hair spray | Salon Selectives Hold Tight Style Freeze Maximum Hold Finishing Spray | 140 |
| Hair gel | Suave Naturals Ocean Breeze Extra Control Spray Gel | 130 |
| Hand and body lotions | Jergens Skincare Original Scent Lotion | 80-190 |
| Deodorant | Dove Solid Anti-Perspirant Deodorant | 110-110 |
| Hair spray | Pantene Pro V Stronghold Healthy Hold Spray | 100-140 |
| Hair spray | Pantene Pro V Strong Hold Spray | 84-88 |
| Hair mousse | Pantene Pro V Mousse Body Builder | 75 |
| Fragrance | Jovan White Musk | 67-67 |
| Deodorant | Secret Powder Fresh Aerosol | 63 |
| Hair gel | Pantene Pro V Spray Gel Volumizing Root Lifter | 57 |
| Hair spray | Suave Maximum Hold Hairspray Unscented, non-aerosol | 53 |
| Hair mousse | Claïrol Herbal Essences Styling Mousse Maximum Hold | 50 |
| Deodorant | Secret Sheer Dry Regular | 49 |
| Hair mousse | Aussie Megahold Mousse | 47 |
| Hair mousse | Helene Curtis Salon Selectives Rise Up Volumizing Mousse | 38 |
| Hair spray | Suave Naturals Extra Flexible Hold Non Aerosol Hairspray Freesia | 35-40 |
| Hair gel | TRESemme European Slick Melting Gel | 36 |
| Hair gel | Claïrol Herbal Essences Natural Volume Body Boosting Gel | 21-57 |
| Hand and body lotions | Nivea Crème | 26 |
| Deodorant | Sure Clear Dry Anti-Perspirant & Deodorant | 20 |
| Hair spray | Sebastian Collection Shaper Plus | 17 |
| Hair gel | Dep Level 4 Shine Gel | 14 |
| DIETHYLHEXYL PHTHALATE (DEHP) | | |
| Fragrance | Oscar | 14 |
| Fragrance | Fire & Ice Cologne Spray | 13 |
| Fragrance | Poison by Christian Dior | 0-25 |
| BUTYLBENZYL PHTHALATE (BBzP) | | |
| Hair spray | TRESemme European Freeze-Hold Hair Spray | 25 |
| Hair spray | Pantene Pro V Stronghold Healthy Hold Spray | 0-46 |
| Hair spray | Sebastian Collection Shaper Plus | 11 |
| Fragrance | Poison by Christian Dior | 0-29 |
| DIMETHYL PHTHALATE (DMP) | | |
| Deodorant | Secret Sheer Dry Regular | 33 |

Source: Environmental Working Group compilation of product testing results from Stat Analysis Corporation, Chicago, Illinois.

Results from twenty percent of the products tested (14 products) were verified by confirmatory tests run on up to five individual containers of the product. For only two of these products did phthalate occurrence vary: the laboratory found DEHP and BBzP in one of five bottles of Poison by Christian Dior (DEP and DBP were found in all five bottles tested), and found BBzP in 3 of 5 bottles of Pantene Pro V Stronghold Healthy Hold Spray (but all five contained DEP).

dates the notion that phthalates may be contributing to these problems. Until proven safe, phthalates should be considered as potential contributors to the following human health effects:

Declining sperm count: Recent analysis of 101 studies (1934-1996) by Dr. Shanna Swan of the University of Missouri confirms results of previous studies: average sperm counts in industrialized countries are declining at a rate of about one percent each year (Swan et al 2000).

Hypospadias: Data from the Centers for Disease Control show that rates of hypospadias in the U.S. began climbing in about 1970, and continued this increase through the 1980s. This condition is a physical deformity of the penis in which the opening of the urethra occurs on the bottom of the penis instead of the tip. Currently the occurrence of hypospadias appears to be stable, at about 30 to 40 cases per 10,000 births (Paulozzi 1999).

Undescended testicles: This birth defect, where testicles fail to completely descend into the scrotum during pregnancy, occurs in two to five percent of full-term boys in Western countries. Rates of the defect increased in the U.S. in the 1970s and 1980s. Men born with this defect are at higher risk for testicular cancer and breast cancer (Paulozzi 1999).

Testicular cancer: This is the most common cancer of young men in many countries, including the U.S. Its incidence continues to increase at a rate of about two to four percent each year in industrialized countries, although rates appear to have stabilized in the U.S. after a 20-year increase. Men with hypospadias, infertility, and undescended testicles – the same constellation of conditions seen in lab animals exposed to certain phthalates – are at greater risk for developing testicular cancer (Toppari et al 1996 and Moline 2000).

Potent reproductive toxins are not on the label

Altogether, the laboratory found five of seven phthalates in the products tested, at concentrations that varied widely from product to product and from chemical to chemical (Tables 3 and 4). But one thing that did not vary was the lack of labeling: none of the 52 phthalate-containing products listed an individual phthalate chemical on its ingredient list (Clairol's Herbal Essences Non-Aerosol Hairspray unhelpfully lists the general term "isophthalates" on its label).

Three of the five phthalates found by the laboratory are considered relatively potent in their ability to harm the male reproductive system: dibutyl phthalate (DBP), butylbenzyl phthalate (BBzP), and diethylhexyl phthalate (DEHP). The laboratory detected DBP in eight percent of the products tested (six of 72), at substantial concentrations. The lab also found trace levels of

DEHP in some individual bottles of three products (four percent of the products tested), and BBzP in some individual bottles of four products (six percent of the products tested).

The fourth phthalate found by the lab, diethyl phthalate or DEP, is thought to be less potent in its ability to damage the male reproductive system. Yet other considerations keep DEP in the forefront as an issue of potential concern for women. In their Fall 2000 study, CDC scientists reported finding DEP in the body of every women of childbearing age tested (Kohn 2000), at levels they characterized as a “substantial internal human dose” (Blount et al 2000). In product testing, the lab found DEP at by far the highest prevalence and at the highest concentrations of any phthalate detected, with Elizabeth Arden’s Red Door fragrance topping the list (at 28,000 parts per million, DEP is almost three percent of the product). All told, 51 of 72 products tested were found to contain DEP.

In this limited survey, DBP and DEP stand out as chemicals of concern, both because of the combination of their prevalence in products, the concentrations at which they are found in both cosmetics and in people’s bodies, and because of their links to birth defects in laboratory studies.

A study by the National Toxicology Program showed that DEP can damage the male reproductive system of animals in the womb. Not only did the scientists find reduced sperm concentrations at the highest DEP dose, but they also found abnormally large prostate glands (Lamb et al 1997).

The final phthalate found by the laboratory, dimethyl phthalate or DMP, was detected in one of the 72 products tested (Secret Sheer Dry Regular deodorant). The laboratory did not find diisononyl phthalates (DINP) or di-n-octyl phthalate (DNOP) in any of the 72 products tested.

Taken as a whole, the lab results indicate that a substantial fraction of cosmetics companies may be hiding phthalates on store shelves within the containers of their products, with no warning for pregnant women who might want to avoid purchasing products that contain chemicals linked to birth defects. In this limited survey, DBP and DEP stand out as chemicals of concern, both because of the combination of their prevalence in products, the concentrations at which they are found in both cosmetics and in people’s bodies, and because of their links to birth defects in laboratory studies.

Alternatives to phthalates

The cosmetics industry knows how to make products free of phthalates. The limited testing done for **Not Too Pretty** reveals that the same big companies that produce phthalate-laced beauty products, also make similar products without phthalates (Table 4).

Table 5. Almost all major cosmetics companies market some products made without phthalates

| Manufacturer or distributor | Products with phthalates | Products with no detected phthalates |
|------------------------------------|--|---|
| Alberto-Culver | TRESemme European Freeze-Hold Hair Spray TRESemme European Slick Melting Gel VO5 Crystal Clear 14 Hour Hold | |
| The Andrew Jergens Company | Ban Delicate Powder Roll On (deodorant) Jergens Skincare Original Scent Lotion | Curel Soothing Hands Moisturizing Hand Lotion |
| AM Cosmetics, Inc. | Wet N Wild Crystalic Calcium Enriched Nail Color Wet N Wild Nail Color Tropez Nail Enamel | |
| Avon Products, Inc. | Avon beComing Radiant Long Last Nail Gloss | |
| Beiersdorf, Inc. | Nivea Crème (hand and body lotion) | Eucerin Dry Skin Therapy Original Moisturizing Lotion |
| Carter-Wallace | Arrid Extra Extra Dry Maximum Strength Solid Arrid Extra Extra Dry Ultra Clear Ultra Clean Spray Arrid Extra Extra Dry Ultra Clear Ultra Fresh Spray | |
| Chesebrough-Ponds USA | Oil of Olay Nail Laquer | Vaseline Intensive Care Advanced Healing Vaseline Intensive Care Dry Skin Lotion |
| Clairol | Clairol Herbal Essences Natural Volume Body Boosting Gel Clairol Herbal Essences Styling Mousse Maximum Hold Herbal Essences Non Aerosol Hairspray | |
| Colgate-Palmolive | | Lady Speed Stick Soft Solid Anti-Perspirant |
| Conair | Jheri Redding Finishers Flexible Hold Hairspray | |
| Coty | Calgon Hawaiian Ginger Body Mist Calgon Turquoise Seas Body Lotion Jovan White Musk The Healing Garden Pure Joy Body Treatment (fragrance) | |
| Del Laboratories, Inc. | Naturistics Super Shine Nail Gloss Sally Hansen Teflon Tuff Nail Color Sally Hansen Hard as Nails With Nylon Nail Polish | Naturistics 90 Second Dry! Super Fast Nail Color |
| Elizabeth Arden | Sally Hansen Hard as Nails Nail Polish Sally Hansen Chrome Nail Makeup Red Door (fragrance) White Diamonds Elizabeth Taylor (fragrance) | |
| Gillette | | Soft & Dri Anti-Perspirant Deodorant Clear Gel |
| Kiss Products, Inc. | | Kiss Colors Nail Polish |
| L'Oreal | Lancome Paris Tresor (fragrance) Redken Cat Finishing Spritz (hair spray) Maybelline Ultimate Wear Nail Enamel Maybelline Express Finish Fast-Dry Nail Enamel | L'Oreal Paris Studio Line: Springing Curls Mousse L'Oreal Jet-Set Quick Dry Nail Enamel Maybelline Shades of Your Nail Color L'Oreal Jet Set Nail Enamel |

Table 5 (con't).

| Manufacturer or distributor | Products with phthalates | Products with no detected phthalates |
|------------------------------------|--|--|
| Liz Claiborne Cosmetics | Liz Claiborne Eau De Toilette Spray (fragrance) | |
| Los Angeles Research | LA Looks Styling Gel: Extra Super Hold | |
| Louis Vuitton | Poison by Christian Dior (fragrance) | Urban Decay nail polish |
| Neutrogena | | Neutrogena Hand Cream |
| Numark Labs | | Certain Dri Anti-Perspirant Roll-On |
| OPI | OPI Nail Laquer | |
| Orly International, Inc. | Orly Salon Nails Nail Color Orly Salon Nails French Manicure | |
| Oscar de la Renta | Oscar (fragrance) | |
| Parfum de Coeur | Parfums de Coeur White Tahitian Ginger Fantasy (fragrance) | |
| Procter & Gamble | Cover Girl NailSlicks Pantene Pro V Mousse Body Builder Pantene Pro V Spray Gel Volumizing Root Lifter Pantene Pro V Strong Hold Spray Pantene Pro V Stronghold Healthy Hold Spray | Physique Extra Control Structuring Gel Secret Anti-Perspirant & Deodorant Platinum Protection Ambition Scent |
| | Secret Sheer Dry Regular (deodorant) Secret Powder Fresh Aerosol (deodorant) Sure Clear Dry Anti-Perspirant & Deodorant Vidal Sassoon Microfine Mist Hair Spray, Aerosol | |
| Redmond Products | Aussie Megahold Mousse | Aussie Mega Styling Spray |
| Revlon | Charlie Cologne Spray Fire & Ice Cologne Spray | Revlon Super Top Speed (nail polish) Revlon Nail Enamel |
| Schwarzkopf & DEP | Dep Level 4 Shine Gel (hair gel) | |
| Tommy Hilfiger | Freedom (fragrance) | |
| Unilever HPC | Aqua Net Professional Hair Spray Degree Original Solid Anti-Perspirant & Deodorant Dove Solid Anti-Perspirant Deodorant | Dove Powder Anti-Perspirant Deodorant Finesse Touchables Silk Protein Enriched Mousse Helene Curtis Finesse Touchables Silk Protein Enriched (hair spray) |
| | Escape by Calvin Klein (fragrance) Eternity by Calvin Klein (fragrance) Helene Curtis Salon Selectives Rise Up Volumizing Mousse | Helene Curtis Thermasilk Heat Activated Firm Hairspray Helene Curtis Thermasilk Heat Activated Mousse for Fine/Thin Hair Suave Naturals Aloe Vera Extra Hold Hairspray |
| | Rave 4x Mega (hair spray) Salon Selectives Hold Tight Style Freeze Maximum Hold Finishing Spray Suave Maximum Hold Hairspray Unscented, non-aerosol | Suave Naturals Sun Ripened Moisturizing Body Lotion |
| | Suave Naturals Extra Flexible Hold Non Aerosol Hairspray Freesia Suave Naturals Ocean Breeze Extra Control Spray Gel Wind Song Extraordinary Cologne by Prince Matchabelli | |
| Warner-Lambert | | Lubriderm Skin Therapy Moisturizing Lotion |
| Wella Group | Sebastian Collection Shaper Plus (hair spray) | |

Source: Environmental Working Group compilation of product testing results from Stat Analysis Corporation, Chicago, Illinois.

*All results shown reflect data from laboratory chemical analysis except results for nail polish, which stem from an EWG analysis of nail polish ingredient labels and nail polish patent records.

Unilever make hair sprays with (Salon Selectives and Aqua Net) and without phthalates (Thermasilk and Suave).

L’Oreal markets Jet Set nail polish without DBP but puts the phthalate in its Maybelline brand.

Procter & Gamble sells Secret Sheer Dry deodorant with phthalates and Secret Platinum Protection Ambition Scent without phthalates.

Louis Vuitton has taken phthalates out of its Urban Decay nail polish but still has these dangerous chemicals in Christian Dior nail polish and the fragrance Poison.

Chemicals that can damage the development and future fertility of babies don’t belong in products designed to make women feel more attractive. Particularly for companies that have phthalate-free formulations in place, a move toward complete phthalate-free product lines should be achievable.

What Women Can Do

Go to www.nottoopretty.org to send your “Label today and remove tomorrow” message to the Food and Drug Administration (FDA), the Cosmetics Ingredients Review Panel and the major manufacturers of beauty products marketed to women of child-bearing age.

The next time you go to the drug store, take along **Not Too Pretty’s** list of products that do and don’t contain phthalates. But remember, just because a product isn’t on the list doesn’t mean it’s free of phthalates. And show your list to the store manager. Ask for their help in convincing cosmetics companies to get phthalates out of their products.

The next time you have a medical appointment, take along **Not Too Pretty** as well as the comprehensive study on phthalates in medical products called **Aggregate exposures to phthalates in humans** (HCWH 2002). Give them to your health care provider and talk with them about phthalates in medical products.

What the FDA Should Do

Using authority over “poisonous and deleterious substances” given them under the Food, Drug, and Cosmetics Act, the FDA must prohibit the marketing of all cosmetics used by women of childbearing age that contain chemicals like phthalates known to cause birth defects.

The FDA must follow that action with a thorough, probability-based safety assessment that considers aggregate exposure to phthalates from all relevant food, drugs, medical devices, cosmetics, and consumer products, and that makes use of and is consistent with CDC biomonitoring data.

What the Cosmetics Ingredients Review (CIR) Should Do

The CIR should base their new safety assessment of phthalates in cosmetics on recent scientific findings of multiple government agencies (e.g., FDA 2001 and Blount et al 2000), and consider aggregate doses and cumulative effects from exposures to multiple phthalates with common mechanisms and health endpoints. The CIR should sponsor studies of occupational exposures for the more than 400,000 people who work in beauty salons and nail parlors in the U.S.

The CIR should conduct a comprehensive survey across the industry to define the occurrence of phthalates in individual personal care products, and provide this data to the FDA for use in an aggregate risk analysis.

The CIR should urge cosmetics manufacturers to immediately label all phthalate-containing products while they work to reformulate and transition to phthalate-free products.

What Manufacturers Should Do

Companies should publicly pledge to voluntarily remove phthalates from their products, starting with those likely to cause the greatest exposure and those marketed to children and women of childbearing age.

Manufacturers should label all phthalate-containing products on a label that can be read easily before purchase.

Manufacturers should test cosmetics ingredients and final products, using a complete battery of health and safety studies equivalent to what is required for food additives, and market only those products that meet rigorous, comprehensive safety standards.

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