TOXICFREE®
LIVING GUIDE

The tide of research continues to grow, indicating that toxic chemicals play a significant role impacting every stage of growth from conception to adulthood.

No infant is born free of synthetic chemicals, and chemical toxicity is passed from one generation to the next, putting our children and future generations at serious risk.

– Linda Chaé

Presented by Healthy Home Company in partnership with the ToxicFree® Foundation

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COSMETIC INDUSTRY INSIDER TELLS ALL
TOXICFREE™ FOUNDATION

WE ARE COMMITTED

...to providing healing solutions for a ToxicFree® world, and empowering integrity in lifestyle choices for all generations.

This booklet is part of the ToxicFree® Foundation's initiative to help you gain the knowledge and power to protect yourselves and your children.We urge you to use this as a reference guide, and to check the ingredient labels on products. Please share this information with others.

Together we can make a difference.

"Never doubt that a small group of thoughtful committed citizens can change the world; indeed, it's the only thing that ever has."

Margaret Mead

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Do not reproduce this brochure in any form, photocopy or electronic. Profits from the sale of this brochure go to the ToxicFree™ Foundation, in order to fund further research and education. Thank you.

We dedicate this booklet to everyone who is helping improve the health of all men, women, and children by eliminating needless exposure to toxic, synthetic chemicals.

Today, we are creating the safe environment of the future. Together we can do our best to assure a healthy and viable generation for tomorrow.

ACKNOWLEDGEMENTS

Thank You to Barbara Masse, M.S., for her tireless and relentless research of credible studies about toxic chemicals. Without her research over the past five years, this booklet would not have been possible. Ms. Masse is the Director of Research for the ToxicFree™ Foundation and she is the Executive Director of Other Ways, Inc., a non-profit domestic violence agency.

Thank You to all the companies willing to manufacture clean, ToxicFree products. Now more people can have access to healthier alternatives for brushing their teeth, caring for their skin, hair and families. Thank You to all the companies willing to manufacture clean,ToxicFree™ products.

Thank You to all the people becoming conscious about these chemicals. We appreciate your desire for reference material. You inspired all the hours it took to present this material.

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PART I:
CHEMICALS AFFECT OUR LIFE

- "99.6 percent of the products examined contain one or more ingredients never assessed for health risks by the Cosmetic Ingredient Review panel, the cosmetic industry's self-regulated trade association.
- Nearly 70 percent of all products contain ingredients that can be contaminated with impurities linked to cancer and other health problems.
- 71 percent of hair dyes contain ingredients derived from carcinogenic coal tar." [1]

500 CHEMICALS A DAY AFFECT QUALITY OF LIFE

Have you noticed the sharp increase in learning disabilities, ADHD, cancer, arthritis, heart disease, birth defects, infertility, foggy thinking and memory loss, hormonal imbalances, chronic fatigue, obesity (adults and children), early puberty and immune system diseases?

We come into contact with more than 500 chemicals and toxic substances every day… and there are already approximately 200 chemicals in the average person's body fat. It is not a question of if we are carrying a burden of toxic compounds, but how much.[2]

The toxic chemicals in products that families use everyday have created a serious problem that is impacting their health, quality of life and their very future. We are the first generation of people ever exposed to such an unprecedented number of chemicals on a daily basis—more than 70,000 chemicals are commercially produced in the U.S., and the number is increasing.

While there are multiple causes of disease, evidence exists that repeated daily exposure to chemicals found in products is a major contributing factor to our escalating health crisis. Daily or even weekly

use of the following products contributes to the chemical “overload” that is creating a lack of wellness and disease.

For specific ingredients see Part 2 of this booklet.

Fragranced Products	Bubble Bath
Deodorant & Antiperspirant	Hair Care Products
Toothpaste & Mouthwash	Sunscreens
Nail Polish & Remover	Baby Care
Skin Care	Shower Products
Makeup, Cosmetics	Household Cleaners
Antibacterial Hand Soaps	Perfume

CONCLUSIVE EVIDENCE IS BEING UNCOVERED:

Universities, scientific researchers, the World Health Organization, American Cancer Society and government agencies (Centers for Disease Control, Environmental Protection Agency and National Institutes of Health, among others) are releasing reports about chemicals in topically applied products. In recent months, an increase in the number of studies have been featured in news reports from CBS, U.S. News & World Report, National Library of Medicine, PBS, USA Weekend, and others.

HERE ARE A FEW QUOTES:

“Many common household products contain chemicals that may harm childhood development and increase developmental disease.” This includes problems like learning, memory, attention, as well as behavioral and emotional disturbances. [3]

– Medical News Today

“Cosmetics are being marketed in the United States, which may pose a serious hazard to the public. Over 2,983 chemicals used in cosmetics… and one-third (884) of these ingredients have been reported as toxic substances…” [4]

– Senator Edward Kennedy, quoting a Government Report

These numbers are estimated to be more than double today:
“125 ingredients used in cosmetics are suspected of causing cancer. Twenty ingredients may cause adverse effects of the nervous system….Cosmetic

ingredients are suspected of causing birth defects...cosmetics are being marketed in the United States which may pose a serious hazard to the public…" [5]

– National Institute of Occupational Safety and Health (NIOSH) Study

In March 2001, Bill Moyers presented a documentary on PBS about the recent study completed by the Centers for Disease Control in Atlanta. The CDC found that numerous synthetic chemicals are now showing up in the human body. The most alarming fact is: "Not a single child today is born free of synthetic chemicals." [6]

"Sodium lauryl sulfate and sodium laureth sulfate…[are] the most dangerous of all ingredients in personal care products." [7]

– Journal American College of Toxicology

"It is in hundreds of cosmetics products, a chemical called diethanolamine (listed as DEA on labels). But it does something more than make soap bubbles…A federal government study says that DEA and DEA-based detergents have been shown to greatly increase the risk of cancer, especially liver and kidney cancer." [8]

– CBS This Morning

Dr. Richard Irwin of the National Institutes of Health states, "The bio-pathways in animals are basically the same as in humans. I certainly think that adds a little extra urgency to consider the risk associated with the exposure to DEA." [9]

– NBC National News

Researchers at the CDC report, "...the average American may be exposed to other chemicals in the phthalate family—substances shown to cause cancer, birth defects and adverse hormonal disruption…" [10]

– Concerns over Chemicals in Cosmetics MSNBC

"Mt. Sinai School of Medicine revealed traces of 53 chemicals known to cause cancer in human or animal tests. In addition, they had an average of 62 chemicals toxic to the brain or nervous system, plus 55 associated with birth defects. The scientists did not find any single substance in amounts the government describes as unhealthy, but said the sheer number of chemicals was unnerving, especially given the uncertainty about the health effects of trace amounts." [11]

– NBC NEWS

"Are common chemicals scrambling your hormones? Ingredients in shampoos, dyes and detergents may be mixing up your hormonal signals." [12]

– USA Weekend, by Brenda Biondo

"Except for a handful of banned chemicals, manufacturers can add almost any ingredients to those revitalizing eye creams, vitamin-stuffed conditioners and kiss - resistant (lipsticks)…" [13]

– U.S. News & World Report

PREGNANCY, BABIES & CHILDREN

A growing body of research suggests that toxic chemicals play a significant role in impacting every stage of growth from conception to adulthood. Chemical toxicity is often passed from one generation to the next, which puts our children and future generations at serious risk.

"No young person alive today has been born without some in utero exposure to synthetic chemicals that can disrupt development." [2]

There is a limit to the amount of toxins the body can process. We get sick from ingesting, inhaling or absorbing synthetic chemicals. During fetal development, the child is much more vulnerable to the harmful effects of these chemicals, even if the mother does not have any immediate symptoms.

Dr. Steven Zeisel, a researcher at the University of North Carolina School of Public Health, states they are learning that DEA, MEA and TEA compounds have the biggest effect on the developing brain during pregnancy and the first few years of life. Just the amount absorbed from washing your hair twice a week could cause abnormal brain development in the baby, affecting intelligence levels later in life.[14]

"While parents endeavor to stimulate their children's development and protect them from hazards, the very products their children are surrounded by are likely exposing them to chemicals that could harm their development." [3]

"Concern for cosmetics products should also carry over to all women as chemical-based hair dyes, hair sprays, facial makeups and fingernail polish are routinely used by the majority of American women. Many of these chemicals were stated as being mutagenic (having the ability to damage the genes and chromosomes)." [15]

"Preventing birth defects is far more important than producing nail polish that doesn't chip," said [California Assemblywoman] Chu. "It's unacceptable for women in America not to have the same health protections as women in Europe." [16]

"Pregnant women who have periodontal disease may be seven times more likely to have a baby that is born too early and too small." [17] Avoid

sodium lauryl sulfate due to its protein-denaturing property, causing skin [and gums] to separate and become inflamed. This is a major cause of gingivitis, the leading periodontal disease.

Products often contain chemicals that may harm childhood development and increase a child's frustration and ability to cope with school, discipline and sexual development. These are a few of the prices our children are paying:

Premature Birth	Learning Disorders
Depression and Moodiness	Low Sperm Count
Male Genital Defects	Reduces I.Q. and Memory
Emotional Disturbances	Sexual Identity Confusion
Brain Development	Early Puberty (breast development in girls and boys)
Obesity	

"There is evidence to strongly suggest that chemicals can affect the health and sexual functioning of offspring if either parent has been exposed to toxic chemicals." [18] "The toxins reaching the womb depends not only on what the mother takes in during the pregnancy, but on the contaminants accumulated in her body up to that point in her lifetime. Children are especially vulnerable to the effects of chemicals because their neurological systems are still developing and are more susceptible to permanent damage—one study suggests that lawn sprays can cause a four-fold increase in cancer in children." [2]

In a recent study of the feminization of wildlife, the conclusion is that "Boys will be girls—eventually." Blame has fallen on the increasing prevalence of a group of chemicals known as endocrine disruptors found in plastics, food packaging, shampoos and pesticides. A reduction in the size of male genitals, a lower sex drive and parts of the testes turning into ovary tissue are among the symptoms that are leading to falling sperm counts and infertility among men.[19]

THE SKIN IS A MAJOR ROUTE OF ENTRY

How do these chemicals get into the body? Doesn't the skin prevent chemicals from penetrating? Your skin absorbs far more than you think and millions of Americans suffer from adverse effects after using skin care products. The skin is the largest organ of the body and it is not an impenetrable shield. Modern medicine makes increasing use of this fact by delivering drugs transdermally. For example, medicines that prevent motion sickness, hormonal deficiencies, and those that help you stop smoking can be placed in an adhesive patch for delivery through the skin.

"Recent studies by dermatologists at the University of California confirm that skin absorption is a major route of entry. Chemicals absorbed topically are undiluted and unchanged by the digestive process and readily lodge with lipid [fat] tissue." [20]

Research also has discovered that significant amounts of chemical ingredients, including mutagenic and carcinogenic substances, penetrate through the skin and enter the blood stream.

DEA. Tests show that DEA is easily absorbed through the skin and accumulates in body organs, even the brain.

Parabens. A decade ago, Brunel University (UK) researchers identified parabens as xenoestrogens that penetrate the skin. [21]

Triclosan. The EPA registers triclosan as a pesticide, giving it high scores as a risk to both human health and the environment. "Many pesticides can be absorbed through the skin into the blood and cause toxic effects. The amount of pesticide absorbed through the skin (percutaneous absorption) may be enough to produce severe toxic reactions including death. In addition, pesticides can also injure the skin directly, a process known as cutaneous toxicity." [22]

Triclosan is included in detergents, dish soaps, laundry soaps, deodorants, cosmetics, lotions, creams, toothpastes and mouthwashes, and even clothes and sheets.

Psoralen. Psoralen is a compound that is used to treat psoriasis that penetrates the skin and increases skin cancer rates 83-fold. [23]

NO ONE IS IMMUNE - ARE YOU SUFFERING?

You may not have a specific disease, but you and your family are probably suffering from a lack of well being, including pain, low energy, loss of memory and learning functions, less optimism and difficulty maintaining a balanced weight.

We may all be experiencing an undetected and cumulative level of chemical pollution. Fragrances, sunscreens, and toxic/carcinogenic pesticides are impacting us and the environment, causing irreversible change. [24]

"New science documented in **Growing Up Toxic** shows that exposure to toxic chemicals can occur in our homes. From cosmetics and beauty products to furniture and electronics, many consumer products contain chemicals that either have not been tested for safety or have been linked to adverse health effects." [3]

"We are creating new disease symptoms that cannot be diagnosed. Physicians who practice environmental medicine (chemically induced illnesses) estimate that chemical sensitivity affects up to 50% of today's population. No one is immune. For those with chemical sensitivities, it takes only a few exposures. Consistent daily exposure slowly weakens the constitution, causing tiredness, memory lapse and moodiness. Over time, people succumb to malignancies, lymphomas, neurological, vascular and other diseases." [2]

Recovery from fatigue, allergies, moodiness, poor memory, central nervous system disorders, pain and even cancer is possible when the body is free from the on going daily chemical assault.

OBESITY

"Humans are exposed to tens of thousands of potentially harmful synthetic organic and inorganic chemicals in their daily lives in the form of pesticides, dyes, pigments, perfumes, flavorings, and other products. At relatively low levels of exposure, these chemicals may promote weight gain by altering metabolic functions in the body. According to a study reported in the April 2002 issue of Journal of Alternative and Complementary Medicine, these chemicals may have damaged many of the body's natural weight-control mechanisms and may play a significant role in the global obesity epidemic." [25]

HORMONE DISRUPTION

EPA tests conclude that ingredients in personal care products and home care products "may be playing havoc with hormones that control reproduction and development."[12] Phthalates are hormone disruptors that studies show may cause infertility, early breast development in girls and boys, birth defects and reproductive system disorders. Phthalates can be found in perfumes, nail polish, baby toys, baby bottles, and plastics used in many products. They leach out of these products and can enter the body.

Estrogenic chemicals can mimic hormonal (or real) estrogen, the key female sex hormone. When the body's hormone receptors recognize the estrogenic chemical as estrogen, the result is feminization of the tissue. Many common, free-radical generating sunscreen chemicals also have estrogen-like effects. Such effects may increase the incidence of cancer, may cause birth defects in children, may lower sperm counts and penis size in men, plus a plethora of other medical problems. These effects are similar to many banned chemicals such as DDT, dioxin and PCBs. [23]

Even the FDA states "hormone disruptors pose enormous long-term chronic health risks, early puberty, certain types of breast, uterine, prostate and testicular cancers, neurological disorders and immunological disorders." [26]

BREAST CANCER

The existence of parabens found in a large number of topically applied products could be causing hazardous exposure levels suspected to be contributing to the rising incidence of breast cancer.

"The most common group of chemicals used as preservatives in cosmetics and deodorants has been detected for the first time in human breast cancer tissue." [27]

The Journal of Applied Toxicology recently published a paper regarding parabens, which contain synthetic estrogen, a major factor in the growth and development of the majority of human breast cancers. It has been found that parabens can accumulate intact in the body from long-term, low-dose exposure. [28]

The study found parabens, as xenoestrogens, may contribute to sterility in male mice and hormone imbalances in females. Xenoestrogens (hormone disruptors) are suspected of contributing to early puberty in young girls and boys. They may be some of the

ingredients involved in the increase of breast cancer in men.

LIST OF TOXIC EFFECTS

Following are the symptoms and diseases that may be manifested from toxic ingredients. Research has linked personal care and household products to all of the following health problems and illnesses:

Accelerated Aging	Depression	Lung Damage
Acne	Diabetes	Lupus
ADHD, ADD	Dizziness	Memory Loss
Allergies	Eczema	Migraines
Anxiety	Fatigue	Muscle Pain
Arthritis	Fibromyalgia	Nausea
Asthma & Breathing Disorders	Headaches	Obesity
Autoimmune Diseases	Hearing Problems	Paralysis
Birth Defects	Heart Disease	PMS
Bone Marrow Damage	Herpes	Psoriasis
Brain Fog	Hormone Disruption	Rashes, “Sensitive” Skin
Brain Hemorrhage	Hot Flashes	Rheumatism
Breast Cancer	Immune System Dysfunction	Sexual Dysfunction
Cancer	Infertility	Shingles
Chronic Fatigue Syndrome	Insomnia or Over Sleeping	Skin Dysfunctions
Circulatory Collapse	Joint Pain	Slow Healing
Cold Sores	Kidney Damage	Strokes
Coma	Learning Disabilities	Vision Problems
Convulsions	Liver Damage	Wrinkles

WHAT DOES "NATURAL" MEAN?

The term "natural" is commonly used for products sold everywhere, yet no standards for the term currently exist. In health food stores, many "natural" products include synthetic chemicals such as parabens, propylene glycol and sodium lauryl sulfate. "Like hypoallergenic, 'natural' can mean anything to anybody. There are no standards for what natural means," says John Bailey. "They could wave a tube [of plant extract] over the bottle and declare it natural. Who's to say what they're actually using?" [26]

Some so-called "natural" cleaners contain "natural surfactants." This often is sodium lauryl sulfate, which once was made from coconut oil but the processing was anything but natural. Now it is synthetically made from petroleum stock.

One "natural" brand shampoo that claims to be 100% natural lists the first two ingredients as coconut oil soap and coconut oil-corn oil soap. Neither ingredient name is official as per CTFA guidelines. It is suspected that both contain sodium lauryl sulfate.

Another mass-market brand claims to be "natural" because of its natural plant extracts, yet when questioned the company admits that the base formulas are the same as conventional products. Companies are selling natural because that is what people are buying and they are counting on people not reading ingredient labels or understanding what they read. [29]

Another example is a brand that advertises "Natural skincare products—no animal by-products." Following is their ingredient listings, which you may want to look up in Part 2.

INGREDIENTS: Infusion of Calendula Officinalis Extract, Propylene Glycol, Dicaprylate/Dicaprate, Cetearyl Alcohol, Ceteareth-20, Ascorbic Acid (Vitamin C) Tocopherol (Vitamin E), Retinyl Palmitate (Vitamin A), Dimethicone, Triethanolamine, Diazolidinyl Urea, Methylparaben, Propylparaben.Propylparaben.

NON-TOXIC DOESN'T MEAN SAFE

"Non-toxic" is not free of toxins or toxic free.

"The word non-toxic appears on many consumer products, but it is misleading. According to the federal regulatory definition, nontoxic does not necessarily mean not-at-all toxic or absolutely safe, but it can mean, for example, that no more than half of the laboratory animals exposed to the product through ingestion or inhalation died within two weeks. A product can also be called nontoxic if no serious [immediate] damage occurred through eye or skin contact. These tests reflect only short-term health effects that may be associated with the product. Long-term or chronic effects are not considered." [30]

"Every day we use products that we think are safe; but the truth is that products are NOT always safe—and manufacturers don't have to tell us so." [31]

The cosmetics industry disputes that some commonly used and patented ingredients are harmful because the chemicals are in low doses. But the National Toxicology Program, a division of the National Institutes of Health, completed a comprehensive study confirming that low doses of hormone disruptors and carcinogens do have harmful effects.

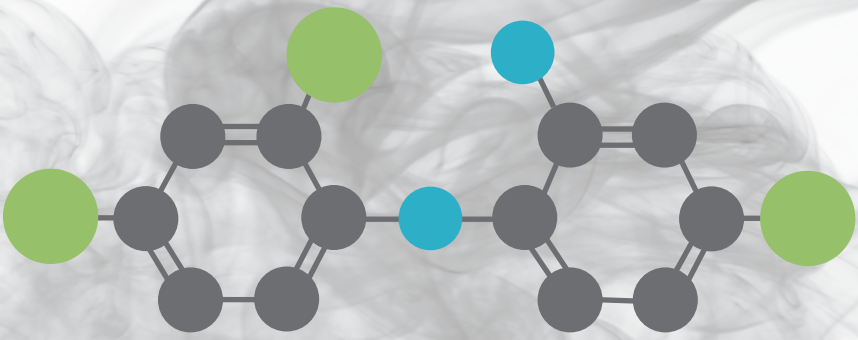
Smoking "just one" cigarette probably won't cause cancer. How many personal care products do you use "just once" in a lifetime? Once a year? Once a week? Once a day or more often? Multiple uses add up!

The vast majority of the hundreds of thousands of synthetic chemicals now on the market have not been tested for toxicity. At least 1,000 new chemicals are added each year and the FDA cannot keep up. The magnitude of this problem is overwhelming.

Absence of evidence is NOT evidence of absence.

Fragrance is a chemical that is considered non-toxic. However, the National Academy of Sciences reports, "95% of chemicals used in fragrances are synthetic compounds derived from petroleum. They include benzene derivatives, aldehydes and many other known toxins and sensitizers—capable of causing cancer, birth defects, central nervous system disorders and allergic reactions." [32, 33] "Central nervous system disorders (brain and spine) include multiple sclerosis, Parkinson's disease, Alzheimer's disease, and sudden infant death syndrome." [34]

TRICLOSAN



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POISON CONTROL CENTER REPORTS

According to the Poison Control Center's annual report, more than 2.2 million cases of exposure to poisonous substances are reported annually. In this report, household cleaning substances are the number one source, responsible for more than 217,400 cases of exposure resulting in poisonings each year.

The number three source is personal care products, which includes cosmetics, at more than 205,200 exposures. Household and personal care products together are responsible for more than FIVE TIMES the number of serious incidents reported from pesticides.

For children under the age of six, the number one source of exposure is personal care products including cosmetics (153,057), and the number two source is household cleaning substances (123,575).

The Poison Control Center's report also detailed which types of products cause the most problems. Here are just some that are listed in the personal care products category:

Perfume, cologne and aftershave (23,342)
Toothpaste with fluoride (21,678)
Nail products, except polish (19,731)
Creams, lotions and makeup (19,519) Soaps (16,631)
Mouthwash (alcohol) (12,934)
Nail polish (10,422)
Deodorants (10,330)
Suntan/sunscreen (8,330)
Bath oil and bubble bath (8,260)
Shampoos (8,136)
Powders with talc (4,429)
Lipsticks and lip balms (3,395)

Most men, women and children are exposed to at least half of these products every single day. Are you still surprised that household products like sunscreen and toothpaste could really be TOXIC? The Poison Control Center considers many of the ingredients in these products to be POISONOUS.

Poison Control Center Reports can be found at: **www.aapcc.org**

FDA & THE SELF-REGULATED COSMETIC INDUSTRY

Each day American women reach for shampoo and conditioner, deodorant, moisturizer, and dusting powder. We apply blush, eye shadow, mascara, and lipstick, then maybe dab on nail polish and perfume. We look good, we smell good, and we have just potentially exposed ourselves to 200 different chemicals.

As American consumers we have every confidence that someone in a lab coat in a big government building has checked these substances, right? Not exactly. "You know more about the ingredients in your dog's flea collar than you know about the toxicity of whatever you're putting on your skin," argues David Wallinga, a senior scientist with the Natural Resources Defense Council in Washington, D.C. [13]

The FDA (Food and Drug Administration) classifies cosmetics and personal care products, but it does not regulate them. In 1938, the FDA granted self-regulation to the Cosmetics, Toiletries and Fragrance Association (CTFA), the self-appointed industry organization. Isn't that like the fox guarding the hen house? Even though the FDA relies on the industry to police itself, the vast majority of the 100,000 chemicals now on the market have not been tested for toxicity.

"The cosmetics manufacturers aren't required to submit safety data to the FDA, so we don't really know what sort of tests they run," says Wayne Stevenson of the FDA Cosmetics Registration Section. "When they run tests, they keep the results in their own files. They don't share the information with the FDA." [13]

"Except for color additives and a few prohibited ingredients, a cosmetics manufacturer may use any ingredient or raw material and market the final product without government approval." [26]

"By law, the FDA does not have the authority to approve cosmetics products or ingredients, except for color additives." [35]

The magnitude of this problem is overwhelming. Since the FDA doesn't have access to cosmetics test reports, they have to rely on independent research.

"Any safety testing and reporting by manufacturers to the FDA is completely voluntary. The problem with this regulatory system is that

industry holds all the cards. They decide what safe means. They decide what tests to do. If the FDA believes a product is harming human health, they have to take legal action to get it off the market and there is a very high burden of proof." [36]

The FDA must prove in a court of law that a product is injurious… before the product can be recalled.The FDA admits they are reluctant to take a company to court as they don't have the budget to win in court against the giant cosmetic companies, and they cannot afford to lose. We suspect that in order to protect its powerful reputation, the U.S. government feels it is safer to do nothing.

SENATOR EDWARD KENNEDY'S SPEECH TO CONGRESS

Following are excerpts from Senator Kennedy's plea to Congress to stop a bill to reduce the government's regulatory power over cosmetics, skin and baby products.

"Congressional deregulation of cosmetics products is especially outrageous and shows a callous disregard for the health of American women and, in many cases, of the children they may be carrying in their wombs.

"Whether the product in question is hair spray, shampoo, lipstick, baby powder, suntan lotion, soap or toothpaste, every American routinely assumes that the product is safe. But this confidence is too often unjustified because federal oversight of the $20 billion cosmetics industry is so limited. The FDA has less than 30 employees overseeing this huge industry. The FDA has no authority to require manufacturers to register their plants and products. It cannot require manufacturers to file data on the ingredients in their products. It cannot compel manufacturers to file reports on cosmetics-related industries. It cannot require that products be tested for safety or that the results of safety testing be made available to the agency. It does not have the right of access to manufacturers' records. It cannot even require recall of a product.

"The cosmetics industry wants the public to believe that no effective regulation is necessary or desirable. They are masters of the slick ad and expensive public relations campaign. But all the glamorous pictures in the world cannot obscure the facts: this is an industry that is under-regulated and its products are too often hazardous. Long-term illnesses ranging from cancer to birth defects may not be linked to their underlying

cosmetics-related causes because symptoms of chronic toxic effects may not occur until months or years after exposure.

"What does this mean for consumers? No warning labels. No information that a product contains carcinogens or can cause severe allergic reactions. No 'keep out of reach of children' labels. No notification that a product has been recalled because it is dangerous or adulterated. The cosmetics industry seems to believe that, for purchasers of their products, ignorance should be bliss.

"Mr. President, my colleagues may wonder why the FDA has not tried to expand its authority or resources in light of the problems with cosmetic safety. I would suggest we look to ourselves for the answer: we [Congress] hold the purse strings and we pass the laws. Make no mistake, the FDA has tried to find creative solutions to its lack of authority and lack of information.

"Given the lack of a federal presence in the area of cosmetics regulation, I would call this a fool's gold standard. Cosmetics regulation in other countries is far superior to our own." [4]

This remains a worldwide problem with more than 3,000 toxic cosmetics and skin care ingredients still in use. If American-made products with suspected harmful ingredients are being imported to another country, that country's FDA equivalent either does not have a pre-set standard forbidding these ingredients or they are lacking the regulatory control.

TOOTHPASTE: A POISON WHERE YOU LEAST EXPECT IT

Dental hygiene products may contain toxins that have been linked to acne, cancer, blindness, and even death. Toothpastes and mouthwashes often contain potentially harmful ingredients such as sodium fluoride, triclosan, FD&C Blue Dye #1, and sodium lauryl sulfate. These ingredients may penetrate through the tissue of your mouth, enter the blood stream, and build up in the liver, kidneys, heart, lungs and tissues. Did you ever wonder why manufacturers are required to put the following warning label on toothpastes? [37]

"WARNING: *Keep out of the reach of children under 6 years of age. If you accidentally swallow more than used for brushing, seek professional assistance or contact a Poison Control Center immediately."*

All Major Brands of Toothpaste

"Toothpastes contain enough fluoride in four ounces to kill a small child within 2 to 4 hours." [38] "FD&C Blue # 1 is in several children's toothpastes and it has been shown to produce malignant tumors when ingested." [39] Triclosan is in antibacterial toothpastes and its manufacturing process often produces dioxin, a powerful carcinogenic and hormone-disrupting chemical with toxic effects in the parts per trillion (one drop in 300 Olympic-sized swimming pools!).[40]

HOUSEHOLD PRODUCTS: GREATER INDOOR POLLUTION THAN OUTDOORS

Did you know that when you clean your house, you might be exposing yourself to greater toxic air pollution indoors than what exists outdoors? A 1985 EPA report concluded that "toxic chemicals in household cleaners are three times more likely to cause cancer than outdoor air pollution" and most homes have airborne concentrations of hazardous and toxic chemicals that are 70 times higher inside the home than outside. "The Consumer Product Safety Commission reported that 150 common household chemicals have been linked to allergies, birth defects, cancer and psychological abnormalities." [41]

Household cleaning substances are responsible for more than 217,000 cases of poisoning each year. Manufacturers are not required to list the ingredients that require warnings or the symptoms they cause.

SUNSCREEN: INCREASED INCIDENCES OF SKIN CANCER

The use of sunscreen chemicals has been linked to increasing incidences of cancer.[42] Melanoma has more than doubled in the past 20 years, directly proportionate to sunscreen sales. Users stay in the sun longer without getting a burn, which would have been nature's warning signal.[43] Scientific evidence has shown the following reasons to avoid chemical-based sunscreens:

1. Their estrogenic or "gender-bending" activity interferes with sexual development [44] and can cause genetic damage." [45]

2. Benzophenone is a registered pesticide. [46] Sunscreens create environmental toxicity and are toxic to humans, dolphins, etc., when swimming.

3. Sunscreens are dangerous free-radical generators. Free radicals promote skin aging, wrinkles and cancer development. [47]

4. 35% of sunscreen can pass through skin into the bloodstream, with greater absorption the longer they are on the skin.[48] This may be a factor in the large increases in cancer in Northern Australia, where the use of sunscreens has been heavily promoted. [49]

5. Sunscreen increases incidences of cancer: “The increased use of chemical sunscreens is the primary cause of the skin cancer epidemic.” [50] “The use of sunscreens causes more cancer deaths than it prevents; 17% increase in breast cancer observed between 1981 and 1992 may be the result of the pervasive use of sunscreens.” [51]

WHAT CAN YOU DO?

"A basic tenet of human health is once you've found something (harmful to human beings), stop exposure." [52]

– National Institute of Occupational Safety and Health

"We must reduce everyday exposures to toxic chemicals linked to breast cancer and a host of other diseases. Companies that manufacture personal care products need to put public health before private profit. Products that are bad for people are ultimately bad business." [3] When you stop buying products with toxic ingredients, your buying power will eventually cause companies to offer clean, ToxicFree™ products. As a consumer you have the power to cause companies to eliminate ingredients that you are not willing to buy.

Reduce your daily exposure to chemicals by carefully selecting the products you and your family use, such as shampoo, conditioner, toothpaste, deodorant, skin care & shaving products, lotions, soaps, cosmetics and household products including odor eliminators, cleaning compounds, laundry and dish soap to name a few.

Look for the "Certified ToxicFree Product" seal on products produced by a number of conscientious companies. This seal guarantees that for any listed ingredient, there is reputable research indicating no negative health effects. The ToxicFree Certification Committee also checks to make sure companies are not omitting the listing on their labels of preservatives, emulsifiers and other potentially toxic ingredients.

You have a **RIGHT TO KNOW** whether the ingredients in your products have been proven safe or unsafe. Until that time, become informed and read labels. Check the ingredients on all products you use.

We encourage you to become a member of the ToxicFree Foundation. Your membership dollars will support the work to make research easily available. Visit **www.theTFF.org.**


R-C-C-N-R
-C-C-N-
Titanium
Zirconium
Hafnium
Rutherfordium
Manganese
Technetium
Tungsten
Seaborgium
Iron
Nickel
Copper
Indium
Gold
Meitnerium
Darmstadtium
Neodymium
Samarium
Curium

PART II:
INGREDIENTS TO AVOID

WORST OFFENDERS - INGREDIENTS IN ALPHABETICAL ORDER

The following is a glossary of some of the most common cosmetic, personal care and household ingredients that have caused adverse or toxic effects as documented by researchers, scientists and physicians around the world. By reading labels and avoiding these ingredients, you can improve the condition of your skin and hair and avoid potential health risks due to long-term exposure to problem-causing substances. Many of these chemicals have more than one effect; some are suspected carcinogens, as well as being skin irritants, hormone disruptors, poisons, etc.

- **1,4-Dioxane.** See Dioxins.

- **2-bromo-2-nitropropane-1,3-diol.** Contains free formaldehyde, see Formaldehyde.

- **Acetone.** Acetone is a solvent in nail polish and nail polish removers and possibly some astringents. In 1992 the FDA proposed a ban on acetone in astringent products because it had not been shown to be safe as claimed. It may cause adverse reactions, may be carcinogenic, mutagenic or toxic.

  How can acetone affect my health? Acetone is a solvent in nail polish and nail polish removers and possibly some astringents. In 1992 the FDA proposed a ban on acetone in astringent products because it had not been shown to be safe as claimed. It may cause adverse reactions, may be carcinogenic, mutagenic or toxic.

  Swallowing very high levels of acetone can result in unconsciousness and damage to the skin in your mouth. Skin contact can result in irritation and damage. Acetone's smell and respiratory irritation or burning eyes that occur from moderate levels of exposure are warning signs that can help you avoid breathing damaging levels of acetone.

Health effects from long-term exposures are known mostly from animal studies: kidney, liver, and nerve damage, increased birth defects, and lowered ability to reproduce (males only) occurred in animals exposed long-term. It is not known whether these same effects can occur in humans.[53]

- **Ammonium Lauryl Sulfate.** See Sodium Lauryl Sulfate.

- **Ammonium Laureth Sulfate.** See Sodium Laureth Sulfate.

- **Antibacterial / Antimicrobials.** See formaldehyde, parabens, quaternium 15, and triclosan.

- **Avobenzone.** [butyl-methyoxydibenzoylmethane] also known as Parsol 1789. This is the only chemical sunscreen currently allowed by the European Community. However, avobenzone is a powerful free radical generator and also should have been banned. Avobenzone is easily absorbed through the epidermis and is still a chemical that absorbs ultraviolet radiation energy. Since it cannot destroy this energy, it has to convert the light energy into chemical energy, which is normally released as free radicals. In sunlight, avobenzone degrades and becomes ineffective within about 1 hour.[23] Also see Benzophenone and Page 32.

- **Benzophenones (dixoybenzone, oxybenzone).** Benzophenone is used in sunscreens, perfumes and cosmetics to prevent the color in cosmetics from deteriorating. It also is identified on the PAN Pesticides Database as a toxic pesticide.

Benzophenone (and similar sunscreen compounds) is one of the most powerful free-radical generators known. Used in industrial processes as free-radical generators to initiate chemical reactions, benzophenone is activated by ultraviolet light energy that breaks benzophenone's double bond to produce two free-radical sites. The free radicals then react with other molecules and produce damage to the fats, proteins and DNA of the cells. This is the type of damage that produces skin aging and the development of cancer.[23]

Inhalation: Vapors are irritating to the respiratory tract, causing sneezing, coughing and possible shortness of breath. At high concentrations, dizziness or other narcotic effects may be noted while excessive exposure can produce CNS disturbance, coma and possible fatalities.

Ingestion: Ingestion of benzophenone causes gastrointestinal disturbances including nausea and vomiting. It is also a potential aspiration hazard: ingestion of significant amounts may

cause respiratory depression. Vomiting may cause aspiration into the lungs that may result in chemical pneumonitis.

Skin Contact: Benzophenone causes irritation to skin, with symptoms that include redness, itching and pain.

Eye Contact: Benzophenone causes irritation to eyes and may be severe with possible corneal damage.

Environmental Toxicity: Benzophenone is toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

- **Benzoyl Peroxide.** Commonly used in acne preparations, benzoyl peroxide may be absorbed through the skin. The MSDS states the following: "Toxicology: tumorigenic; facilitates action of known carcinogens and possible tumor promoter. May act as a mutagen, it produces DNA damage in human and other mammalian cells in some concentrations. Also toxic by inhalation, may be harmful if swallowed and in contact with skin. It is an eye, skin and respiratory irritant."[54]

  The MSDS for benzoyl peroxide should be referenced by all manufacturers making acne products.

- **BHA and BHT.** (Butylated Hydroxyanisole and Butylated Hydroxytoluene) BHA and BHT are phenolic compounds that often are added to foods to preserve fats and very commonly used in cosmetics and personal care products. BHA is absorbed through the skin, stored in body tissues, and is an animal carcinogen, suspected human carcinogen, and a xenoestrogen. BHT is all of the above, as well as being highly irritating to the skin and eyes. "The same chemical properties which make BHA and BHT excellent preservatives may also be implicated in health effects. The oxidative characteristics and/or metabolites of BHA and BHT may contribute to carcinogenicity or tumorigenicity; however, the same reactions may combat oxidative stress. There is evidence that certain persons may have difficulty metabolizing BHA and BHT, resulting in health and behavior changes."[55]

- **Butyl Paraben.** Butyl paraben is used as a preservative with antimicrobial properties. See parabens (hormone disruption, possible birth defects).

- **Butylene Glycol (BG).** Butylene glycol is now being used to replace propylene glycol in some personal care products, even though butylene glycol is the only glycol that has not been able to clear the FDA's GRAS list (FDA's Generally Recognized As Safe list). See propylene glycol.

- **Cinnamates.** (cinoxate, ethylhexyl p-methoxycinnamate, octocrylene, octyl methoxycinnamate). Also see methoxycinnamate

- **Cocamide DEA.** Cocoamide DEA is a thickener and foam booster in bubble baths and hair products, and it is listed as having similar brain and memory side effects as DEA. It may also contain nitrosamines, a known carcinogen, as a by-product of manufacturing. Also see DEA - MEA – TEA.

- **Cocamide MEA.** Cocoamide MEA is a thickener and foam booster in bubble baths and hair products, and it is listed as having similar brain and memory side effects as DEA. It may also contain nitrosamines, a known carcinogen, as a by-product of manufacturing. Also see DEA - MEA – TEA.

- **Colors & Pigments.** Ingredient labels list artificial colors as either FD&C (Food, Drug & Cosmetics) or D&C (Drug & Cosmetics), followed by a color and a number. For example: FD&C Yellow No. 5. These are known in the industry as coal-tar colors. These artificial hues are made from a thick tar obtained from bituminous coal, a volatile coal containing harmful constituents that can cause skin irritation, allergic reactions, and contact dermatitis. Some coal tar colors have been implicated in various forms of cancer. Many of these tints—particularly D&C Violet No. 2, FD&C Blue No. 1, and FD&C Green numbers 1 through 3—contain benzene, a substance banned from a number of household products in the 1970s because research indicated it increased the risk of leukemia.[56]

  Most colors are derived from coal tars; other artificial colors are exactly that, artificial, and created by combining various chemicals, many of which may be highly toxic. It is not necessary to use products containing artificial colors. We suggest you avoid these colors to avoid the chance of incurring serious health reactions.

- **D&C Colors.** See Colors & Pigments and FD&C Colors.

- **DEA - MEA - TEA.** Diethanolamine (DEA), monoethanolamine (MEA) and tri-ethanolamine (TEA) and related ingredients are emulsifiers and rich foaming agents widely used in a variety of cosmetics products, particularly bubble bath, body wash, shampoo, soap and facial cleansers. All are ethanolamines, which are eye and skin irritants that cause contact dermatitis. DEA is easily absorbed through the skin and accumulates in body organs, even the brain.

Memory gaps, foggy thinking. "Washing your hair might make you lose your mind. Substantial and recent research proves DEA is easily absorbed through the skin and accumulates in body organs, even the brain. Researchers have uncovered evidence that shows DEA may rob the brain's ability to make memory cells. DEA, and a similar ingredient—TEA—seep through the skin and block the brain's ability to absorb choline, a key nutrient that plays a crucial role in the memory cell making process in the developing brain." [14]

Cancer. TThe National Toxicology Program (NTP) did a research study showing an association between cancer in laboratory animals and diethanolamine (DEA) and certain DEA-related ingredients when applied topically in the same amounts as shampooing a couple times a week.[57] "Animal tests show it causes damage to the liver, kidney, brain, spinal cord, bone marrow and skin. Contact with the eyes can cause impaired vision".[58]

John Bailey, head of the Cosmetic Division for the FDA, says "the study is especially important since the risk equation changes significantly for children." [59]

DEA, when in the presence of nitrate preservatives and contaminants, can form the nitrosamine NDELA (nitrosodiethanolamine). NITROSAMINES ARE CARCINOGENS. "In 1991, two surveys were conducted which found that of 29 products tested, 27 were found to contain NDELA…. in 1980, the FDA analyzed 335 cosmetic products and found that 42% were contaminated with NDELA." [58]

The concentration of nitrosamines in these products is as much as 50% to 100% higher than that in nitrate-processed bacon, which is no longer produced in this country because of the carcinogenic effects.

- **DEA-Cetyl Phosphate.** DEA-cetyl phosphate is a conditioning foam booster in bubble baths and hair products. It is listed as having similar brain and memory side effects as DEA and may also contain nitrosamines, a known carcinogen, as a by-product of manufacturing. Also see DEA - MEA - TEA.

- **DEA-Laureth Sulfate.** See DEA and sodium laureth sulfate.

- **DEA Oleth-3 Phosphate.** DEA oleth-3 phosphate is an emulsifying agent and foam booster in numerous products that foam. It is listed as having similar brain and memory side effects as DEA and it may contain nitrosamines, a known carcinogen, as a by-product of manufacturing. Also see DEA - MEA – TEA.

- **Diazolidinyl Urea.** Diazolidinyl urea contains free formaldehyde. Also see formaldehyde.

• **Dibutyl Phthalate.** Dibutyl phthalate is found in nail polishes, perfumes and fragrances, deodorants, anti-perspirants. It is not always listed on the ingredient label. Also see phthalates.

• **Dichlorobenzene.**

Symptoms: Eye irritation, swelling periorbital (situated around the eye); pro- fuse rhinitis; headache, anorexia, nausea, vomiting; weight loss, jaundice, cirrhosis. In animals studies indicate damage to the liver and kidney injury. It is a potential occupational carcinogen.

Health Concerns: Used in mothballs and toilet deodorants, dichlorobenzene also is used as an intermediate in the production of other chemicals. The general population is mainly exposed through breathing vapors from products used in the home and public restrooms. "1,4 Dichlorobenzene (p-dicholorobenzene) is reasonably anticipated to be a human carcinogen based on sufficient evidence of carcinogenicity in experimental animals."[60]

Exposure Routes: Inhalation, skin absorption, ingestion, skin and/or eye contact.

Symptoms: Eye irritation, swelling periorbital (situated around the eye); profuse rhinitis; headache, anorexia, nausea, vomiting; weight loss, jaundice, cirrhosis; in animals: liver, kidney injury; [potential occupational carcinogen].

Target Organs: Liver, respiratory system, eyes, kidneys, skin.

Cancer Site: liver & kidney.

• **Dicholorophenoxy.**

Synonyms: 2,4-dichlorophenoxy acetic acid and 2,4-D.

Immediate Health Effects: If swallowed, (2,4-dichlorophenoxy) acetic acid is highly toxic. If absorbed through the skin, (2,4-dichloro-phenoxy) acetic acid is highly toxic.

Long-term or Delayed Health Effects: This chemical may cause cancer. It is considered a possible carcinogen by the World Health Organization and the U.S. Environmental Protection Agency.

Neurotoxin: This chemical can harm the brain and the central nervous system.

Development Toxicant: This chemical can interfere with the normal development of a fetus or child.

Suspected Endocrine Disruptor: "May interfere with, mimic or block hormones. 2,4-dichlorophenoxy acetic acid is ranked as Orange for Warning. We recommend that you avoid exposure." [61, 62]

• **Digalloyl Trioleate.** Digalloyl trioleate is an ingredient in sunscreen with toxic side effects.

• **Dioxins.** You will not see this chemical name on an ingredient listing, yet it is present as a by-product of other listed ingredients. Dioxins are a class of

chlorine-containing chemicals widely recognized as some of the most toxic chemicals ever made by humans. A 1992, an FDA survey found the highly toxic 1,4 dioxane in 27 out of 30 children's bubble bath and shampoo products. In addition, 54 ethoxylated raw materials used in cosmetics were tested and all 54 contained 1,4 dioxane.[61]

Dioxins often are contained in antibacterial ingredients, such as triclosan, emulsifiers, PEGs, and ethoxylated cleansers such as sodium laureth sulfate and ammonium laureth sulfate. Dioxins and PCBs are readily found in fat samples.

"Of all the chemicals used in cosmetics, the National Institute of Occupational Safety and Health has reported that nearly 900 are toxic, although other groups attack that figure as being far too conservative. Compared with the toxins found in our air, soil and waterways, cosmetics seem a trivial pursuit to many environmental health and consumer advocacy groups. But many of the same poisons that pollute our environment, from dioxins to petrochemicals, can be found in the jars and bottles that line our bathroom shelves." [63]

There are 75 related forms of dioxin, all organochlorine compounds, which share similar properties. Dioxins are potent chemicals that are known to cause cancer and damage to the brain and central nervous system. The most toxic is 2,3,7,8-tetrachlorodibenzo-para-dioxin, or TCDD. Dioxins are now widespread in the environment.[64]

Dioxins are considered persistent organic pollutants (POPs), which tend to remain in the environment and animals for long periods of time and can travel long distances.[65]

Fetuses and breastfeeding infants may be at particular risk from exposure to dioxins and dioxin-like compounds because they may cause harm to the developing brain and immune system.[61]

"Research has shown that SLS and SLES may cause potentially carcinogenic nitrates and dioxins to form in the bottles of shampoos and cleansers by reacting with commonly used ingredients found in many products. Large amounts of nitrates may enter the blood system from just one shampooing. Dr. David H. Fine, the chemist who uncovered NDELA contamination in cosmetics, estimates that a person would be applying 50 to 100 micrograms of nitrosamine to the skin each time he or she used a nitrosamine-contaminated cosmetic. By comparison, a person consuming [the now-prohibited] sodium

nitrite-preserved bacon is exposed to less than one microgram of nitrosamine."

- **DMDM (Dimethylol Dimethol) Hydantoin.** This chemical contains free formaldehyde. Also see formaldehyde.

- **Ethyl Paraben.** Ethyl paraben is used as a preservative with antimicrobial properties. Also see parabens (hormone disruption, possible birth defects).

- **Ethylhexyl p-Methoxycinnamate.** Also see methoxycinnamate.

- **Ethylene Glycol (EG).** Also see propylene glycol.

- **FD&C Colors.** Artificial colors labeled FD&C are those the Food and Drug Administration (FDA) deems safe for use in food, drugs and cosmetics. (Also see colors, pigments, phthalates in Part 1 to see how color is linked to obesity.) Several examples include the following:

FD&C Yellow No.5 (Tartrazine) Tartrazine is contained in hundreds of cosmetic and personal care products, including lipsticks, after shave, moisturizers, body and hand lotions, eye shadow, face powder, hair colors, shampoos, conditioners, toothpaste, deodorants, and baby shampoos and soaps. It is an azo dye with an orange-yellow color that is used in fabrics, foods and cosmetics.

Overall, research has shown that tartrazine can be linked to asthma, certain rashes, hyperactivity (particularly in children) and migraine. It is the second most common cause of migraines in younger people. Research has shown that tartrazine is known to provoke asthma attacks, although the FDA does not recognize this, and urticaria (nettle rash) in children. It is also linked to thyroid tumors and chromosomal damage and is banned in Norway and Austria. Tartrazine appears to cause the most allergic and/or intolerance reactions of all the azo dyes, particularly amongst those with an aspirin intolerance and asthmatics. Other reactions can include migraine, blurred vision, itching, rhinitis and purple skin patches. In conjunction with benzoic acid (E210) tartrazine appears to create over-activity in children."[56]

FD&C Blue # 1 "Brilliant Blue" (Triphenylmethane) FD&C Blue # 1 is synthetic coal tar dye approved by the FDA for both cosmetics and food use, and it is only acceptable for non-food use by the World Health Organization. It has been shown to produce malignant tumors when ingested and is used in foods in the U.S., particularly those marketed to children. It is in several children's toothpastes (it is very difficult to keep children from ingesting at least some of their toothpaste) as well as many external cosmetics and those intended for mucous membranes (douche, for instance).[39]

The latest research indicates that people who frequently color their hair DOUBLE their risk of bladder cancer. "Risk…[tripled]…among regular (at least monthly) users of 15 or more years. Subjects [in the study] who worked for 10 or more years as hairdressers or barbers experienced a five-fold increase in risk compared to individuals not exposed." [66]

FD&C Blue # 1 is often used in conjunction with Tartrazine to produce various shades of green. It is used in cosmetics and personal care products, dairy products, sweets and drinks. It is a synthetic usually occurring as aluminum lake (solution) or ammonium salt, and it is banned in Belgium, France, Germany, Switzerland, Sweden, Austria, and Norway.[67]

- **Fluoride.** Check out that tube of toothpaste and avoid fluoride. Since April 1997, all toothpaste containing fluoride in the U.S. must carry a warning label, advising parents what to do if their child swallows more than the pea-size brushing amount. There is a good reason for that warning: one tube of toothpaste contains enough fluoride to kill a two-year-old child.[38]

Despite fluoride's controversial claim to prevent cavities, it is a dangerous, toxic chemical. Most of the fluoride used in dental products and in water sup- ply fluoridation is a by-product of making fertilizer. "Fluoridation opponents (scientists) say it's 'politics overriding science,' with a widespread government conspiracy allowing the phosphate fertilizer industry to profit from—rather than pay for—disposing of a harmful by-product. Some say the industry should be charged with child abuse." [68]

"Because of health concerns, Belgium banned the sale of fluoride supplements to prevent tooth decay, France removed sodium fluoride from the market for the treatment of osteoporosis and Ireland plans to lower water fluoride levels. And, because poor quality research has been carried out on fluoride and health, British scientists called (on Thursday, September 5, 2002) for more research into the health effects of adding fluoride to drinking water in a report published by the Medical Research Council, according to a Reuters article.[69]

The FDA lists fluoride as an "unapproved new drug" and the EPA lists fluoride as a "contaminant." Fluoride has never received FDA Approval.[70]

It is contained in the following preservatives listed in the ingredients in numerous personal care products. These preservatives include imidazolidinyl urea, diazolidinyl urea and 2-bromo-2-nitropropane-1,3-diol.

A July 1998 report for The American Academy of Pediatric Dentistry states that at least 22% of all American children now have dental fluorosis as a result of ingesting too much fluoride. Fluorosis results in light spots and discoloration forming on the developing teeth of children. In advanced cases, pitting of teeth can occur.

Fluoride has been linked to many harmful health effects including acne, Alzheimer's, kidney damage, gastrointestinal problems, cancer,

genetic damage, neurological impairment, bone and tooth decay, arthritis and osteoporosis.

- **Formaldehyde.** In June 2004, a World Health Organization panel of 26 scientists from 10 countries announced its conclusions that formaldehyde poses a greater hazard than previously thought. Formaldehyde has long been a "suspected" carcinogen and now they confirm the chemical is "carcinogenic to humans." [78]

There are many other problems with formaldehyde: it is both a skin irritant and an allergen, according to the EPA.[79]

Formaldehyde is a common ingredient in perfumes, cosmetics and personal care products, and is also formed in these products from reactions with other ingredients (called formaldehyde donors). A study determined that "free" formaldehyde was present in products preserved with three different formaldehyde donors: imidazolidinyl urea, diazolidinyl urea and 2-bromo-2-nitropropane-1,3-diol.[80]

The cosmetics industry has claimed for decades that these formaldehyde donors do not contribute "free" formaldehyde into product. Free formaldehyde means fully present, active formaldehyde rather than the precursor not yet in active form.

Cancer. It is implicated in DNA damage and inhibits DNA repair. It is mutagenic and can cause mucous membrane irritation, asthma, nausea, vomiting, rashes, nosebleeds, respiratory system problems, neurological problems, and menstrual disorders. It is one of the main irritants in MCS (multiple chemical sensitivity).

Joint Pain. Another problem from commonly used skin and hair care product preservatives (as well as the outgassing from adhesives in wood and new carpets) is an increase in muscle and joint pain as well as fatigue.[81]

Does it seem possible that today's arthritis epidemic could be directly related to formaldehyde donors found in products we use on a daily basis?

- **Fragrance.** Most deodorants, shampoos, sunscreens, skin care, body care, baby products, household products, and, of course, perfumes, contain fragrance. It is very important to recognize that the word "fragrance" on an ingredient deck most often means "artificial" fragrance, composed entirely of chemicals, unless it is qualified by the words "organic" or "from essential oils." These fragrance chemicals do not have to be listed according to the FDA. Many of these chemicals are carcinogenic or otherwise toxic.

"Fragrance on a label can indicate the presence of up to 4,000 separate ingredients, with most or all of them being synthetic. Symptoms reported to the FDA have included headaches, dizziness, rashes, skin discoloration, violent coughing and vomiting, and allergic skin reactions. Clinical observation by medical doctors has shown that exposure to fragrances can affect the central nervous system, causing depression, hyperactivity, irritability, inability to cope and other behavioral changes." [82]

One perfume has been targeted by the Environmental Health Network of California. "Eternity," by Calvin Klein, has been reported by consumers as having neurological and respiratory effects, and the EHNC has petitioned the FDA on this perfume due to the chemical ingredients. Just a few of the chemicals analyzed in this product are diethyl phthalate, hydrocinnamaldehyde, phenol 2-methoxy-4-(2-propenyl), and benzene ethanol. All are skin irritants, many have central nervous system effects, some are suspected carcinogens and some are hormone disruptors.[83]

Other fragrance compounds have been found to contain the highly toxic chemicals toluene, ethanol, acetone, formaldehyde, benzaldehyde, benzyl acetate and methylene chloride (which is on the FDA prohibited list).[84]

According to the FDA, even those products that say "fragrance-free" or "unscented" often contain fragrance chemicals. Manufacturers do not have to list fragrance if the purpose is only to cover up unpleasant odors from other ingredients.[85]

- **Imidazolidinyl Urea.** Contains free formaldehyde. Also see formaldehyde.

- **Isopropyl Alcohol.** This chemical can get into the body through the skin as well as through ingestion. It is used as a preservative and disinfectant and can be found in cleaning agents, cosmetics and personal care products, perfumes, and rubbing alcohol.

Alcohol poisoning symptoms include flushing, dizziness, depression, nausea, headaches and coma. Rubbing alcohol baths or sponges used to soothe a fever can lead to acute poisoning through skin absorption or inhalation. Package warnings suggest using protective gloves and using in a well-ventilated area.

- **Lauramide DEA.** Lauramide DEA is a foam booster for thick lather in bubble baths and hair products. It is listed as having similar brain and memory side effects as DEA and may contain nitrosamines, a known

carcinogen, as a by-product of manufacturing. Also see DEA-MEA-TEA.

- **Linoleamide MEA.** Linoleamide MEA is a foam booster for thick lather in bubble baths and hair products. It is listed as having similar brain and memory side effects as DEA and may contain nitrosamines, a known carcinogen, as a by-product of manufacturing. Also see DEA - MEA – TEA.

- **Menthyl Anthranilate.** This chemical can be found in sunscreen and has been known to produce toxic side effects.

- **Methoxycinnamate.** Also commonly called octyl methoxycinnamate, this chemical is in many sunscreens. However, there is recent evidence that the chemical itself is implicated in causing increased incidences of skin cancer.

"A chemical used in most sunscreens to protect against skin cancer could damage human cells, according to a study. Research carried out in Norway found that octyl methoxycinnamate (OMC), which is used in 90% of sun creams to protect against ultraviolet rays, could be harmful if it seeps into a person's blood stream. The scientists, from the Norwegian Radiation Protection Authority, suggest that this is because the chemical becomes twice as toxic when it comes into contact with light. They add that the chemical could damage human cells and warn the public only to use sunscreens that contain OMC when they have no other choice.

But the findings of the study have been dismissed by the Cosmetic, Toiletry & Perfumery Association, which represents sunscreen manufacturers in Britain. Their spokeswoman said that the chemical had been "thoroughly tested" and was approved in the FDA's Sunscreen Monograph in the U.S. as a safe and effective sunscreen." [86]

"Although sunscreens do seem to help prevent the development of a treatable form of skin cancer known as squamous cell carcinoma, two studies have found that their use is associated with a substantially increased risk of the often-deadly condition known as malignant melanoma. It seems that using sunscreens to guard against this form of skin cancer may not be such a bright idea after all."[87]

- **Methylchloroisothiazolinone** and **Methylisothiazolinone.** Commonly used as preservatives, these chemicals are bacterial mutagens and they are extremely potent skin irritants.[88]

"The preservative was responsible for an epidemic of contact

sensitivity, in some geographical areas, in the 1980s and early 1990s." [89]

- **Methylene Chloride.** Despite the fact that this chemical is on the FDA's prohibited list, it is still in products that you use every day, including household cleaning products and perfumes.[84] Also see fragrance.

- **Methyl Paraben.** Also see parabens.

- **Mineral Oil.** Mineral oil coats the skin in a similar way as holding plastic wrap tightly over the skin's surface. This disrupts the skin's natural immune barrier and inhibits the skin's ability to breathe and absorb moisture and nutrition. It is extremely comedogenic (blackhead producing), can promote acne and other disorders, and slows down normal cell development, resulting in premature aging of the skin. It also may contain polycyclic aromatic hydrocarbons (PAH) that are mutagenic and the carcinogenic.

- **Myristamide DEA.** Myristamide DEA is a foam booster for thick lather in bubble baths and hair products. It is listed as having similar brain and memory side effects as DEA and may contain nitrosamines, a known carcinogen, as a by-product of manufacturing. Also see DEA - MEA - TEA.

- **Octyl Methoxycinnamate.** This chemical is found in sunscreen and may produce toxic side effects.[23] Also see methoxycinnamate.

- **Oleamide DEA.** Oleamide DEA is a foam booster and thickener in bubble baths and hair products. It is listed as having similar brain and memory side effects as DEA and may contain nitrosamines, a known carcinogen, as a by-product of manufacturing. Also see DEA - MEA - TEA.

- **Oxybenzone.** Also see Benzophenone.

- **PABA and PABA esters (ethyl dihydroxy propyl PAB, glyceryl PABA, p-aminobenzoic acid, padimate-O or octyl dimethyl PABA).** In March 1998, Dr. John Knowland of the University of Oxford reported studies showing that certain sunscreens containing PABA and its derivatives can damage to DNA, at least in the test tube experiments. When a chemical sunscreen, padimate-o, was added to DNA and the mixture exposed to the ultraviolet rays of sunlight, it was found that the sunscreen broke down in sunlight, releasing highly active agents that could damage DNA. It did not block out the UV, but instead absorbed

energy. “It became excited and set off a chemical reaction that resulted in the generation of the dangerous free radicals and broken DNA strands that can lead to cancer,” he said and further com- mented that while it’s too early to make blanket recommendations, “I would not use a product containing PABA, padimate-o or other PABA derivatives.” Dr. Martin Rieger reported that PABA may play a role in genetic damage.[23]

- **Padimate-O.** Also see PABA.

- **Parabens.** The U.S. Food and Drug Administration has called parabens the most widely used preservatives in the United States. Recently they have been detected in human breast cancer tissue.

Parabens in deodorants and antiperspirants linked to breast cancer.
“Parabens, a group of chemicals found in thousands of cosmetics, food and pharmaceutical products, are the most widely used preservatives in the United States. But a new study released by the Journal of Applied Toxicology found parabens have been linked to cancer. Preservatives used in leave-on products such as makeup and skin lotions are of greatest concern because the long-term exposure to the skin increases the opportunity for chemicals to reach the bloodstream. Experts say parabens can demonstrate estrogenic-like activity in the body, which increases the risk of breast tumors.” [90]

A decade ago, Brunel University (UK) researchers identified parabens as xenoestrogens that penetrated the skin. “The inadvertent estrogenicity of certain synthetic chemicals, and their subsequent effects on the endocrine system of humans and wildlife, is of concern. [21]

This study found parabens, as xenoestrogens, may contribute to sterility in male mice and hormone imbalances in females. Xenoestrogens (hormone disruptors) are suspected of contributing to early puberty in young girls and boys. Parabens may be involved in the increase of breast cancer in men and are now implicated in breast cancer in women.

Yet the cosmetics industry continues to claim these ingredients are safe: “Parabens are a class of preservatives (ingredients that help to prevent microbial contamination) that have been used in a wide variety of foods, drugs and cosmetics and keep products safe. Parabens have a long history of use in these products and have been specifically recognized as safe by the U.S. Food and Drug Administration. Additionally, the Cosmetic Ingredient Review Expert Panel reviewed their use in cosmetics in 1984 and concluded that they were safe as used in cosmetics.” [91] Also see phthalates.

One should note that this statement is somewhat misleading: “Parabens have been specifically recognized as safe by the U.S. Food and Drug Administration.” The FDA’s GRAS (Generally Recognized As Safe) list means that items on this list haven’t been proven unsafe.

Absence of evidence is not evidence of absence.

There are four types of parabens used as preservatives and they are not always called "parabens." Check your labels for all of the following:

Methyl Paraben. Methyl chemosept; methyl parasept; 4-hydroxybenzoic acid methyl ester; Nipagin M; Tegosept M; aseptoform; nipagin; 4-hydroxy methyl benzoate.

Ethyl Paraben. 4-hydroxybenzoic acid ethyl ester; Nipagin A; ethyl parasept; Solbrol A.

Propyl Paraben. Nipasol; propyl chemosept; Solbrol P; propyl parasept; propyl 4-hydroxybenzoate; 4-hydroxybenzoic acid propyl ester; p-hydroxy propyl benzoate; n-propyl p-hydroxybenzoate; aseptoform p; betacide p; paseptol; propyl aseptoform; protaben p; tegosept p; 4-hydroxybenzoic propyl ester.

Butyl Paraben. n-butyl paraben; n-butyl p-hydroxybenzoate; butyl 4-hydrox- ybenzoate; butoben; butyl chemosept; butyl parasept; p-hydroxybenzoic acid n-butyl ester; 4-(butoxycarbonyl)phenol; aseptoform butyl; butyl tegosept; nipabutyl; solbrol b; tegosept butyl; butyl butex; p-Hydroxy butyl benzoate; 4- hydroxybenzoic acid butyl ester.

- **Parsol 1789.** A chemical ingredient found in sunscreen. Also see avobenzone.

- **PEG.** "PEG is the abbreviation for polyethylene glycol. Each number behind the PEG on a label indicates the molecular weight. The low numbers up to 400 may cause hives and eczema." [92]

PEG-based ingredients are in a wide variety of personal care products, baby care and sunscreens. They are made by ethoxylating propylene glycol (see propylene glycol). "As a manufacturing by-product of ethoxylation, dangerous levels of the toxin dioxin have been found."[93]

A 1992 FDA survey found 54 ethoxylated raw materials used in cosmetics were tested; all 54 contained 1,4 dioxane. Also, the highly toxic 1,4 dioxane was found in 27 out of 30 children's bubble bath and shampoo products.[30] (Also see dioxins.)

- **Phthalates.** Phthalates are xenoestrogens, which are hormone disruptors. They are com- monly found, although usually not listed on the labels, in cosmetics and personal care products, especially nail polish, perfumes, hair sprays, and skin lotions, as well as clothes, household cleaners and deodorizers, baby toys, garden hoses, shower curtains, insect repellants, toothbrushes, deodorants and antiperspi- rants, food packaging, aspirin, medical tubing and fluid bags, gum, candy, biodegradable tampon injectors, and prescription medications.[94]

Exposure to all these sources of xenoestrogens (especially

those rubbed onto the skin and hair), and however weak, may add incrementally to the total estrogenic effect even at very low concentrations. This is detrimentally affecting all of our health.[95]

Harvard University School of Public Health investigators found a link between sperm damage and monoethyl phthalate, a compound used to maintain the color and scent in many cosmetics items.[94]

Many acne products, for instance, contain synthetic color, and often contain phthalates as well. Scientists at the Centers for Disease Control and Prevention have found that dibutyl phthalates cause birth defects in animals, and are present in a high percentage of pregnant and women of child-bearing age.[96]

Pthalates are also banned in Europe: “The European Parliament has voted to make permanent a temporary ban on the use of certain phthalate plasticizers in soft polyvinyl chloride (PVC) toys that children may put into their mouths.” [97]

And in January 2003, the European Parliament prohibited the use of the phthalates DEHP and DBP in cosmetics.” [98]

Environmental Health Network of California reported that independent laboratory tests revealed a common fragrance ingredient is diethyl phthalate, an irritant and suspected hormone disruptor, which is absorbed through the skin. Huber Chemicals of Switzerland found this chemical made up about 10% of the fragrance portion of many perfumes.[99]

In September 2000, researchers at the Centers for Disease Control and Prevention found that every person tested had DBP (dibutyl phthalate) in their bodies. 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.[100]

In 2002, a major national laboratory tested 72 name brands of off-the-shelf beauty products for the presence of phthalates. “The laboratory found phthalates in nearly 80% of the products. More than half of the tested cosmetics con- tained more than one type of phthalate. Major brands included products by Boots, Christian Dior, L’Oreal, Procter & Gamble, Lever Fabergé, and Wella. None of the products listed phthalates as an ingredient on the label.

Chemicals that cause birth defects do not belong in products marketed for personal or household use. While the levels of phthalates in some individual products were low, people are being exposed to phthalates from many different products each day. The 34 well-known perfumes, deodorants and hair care products tested in this study represent a small fraction of the market, but the results suggest that a substantial proportion of beauty products available in retail stores contain phthalates.[101]

The Environmental Working Group found dibutyl phthalate in the patents for a wide variety of name brand items, including Cover Girl, Maybelline, Shiseido, L'Oreal, Elizabeth Arden, Chesebrough Ponds, Procter & Gamble, Lever Brothers, Colgate Palmolive, Kraft General Foods, and others.[98]

Phthalates are regulated as toxic substances under environmental laws that limit their discharge into air, land, and water, but there are no limitations on the amount of phthalates used in consumer products, including cosmetics.[100]

Health effects of phthalates include damage to the liver and kidneys, birth defects, decreased sperm counts, testicular cancer, early puberty onset in girls, andearly breast development in girls and boys.[102]

"Metabolites of diethyl phthalate, used in volatile components of cosmetics like perfumes, nail polishes and hairsprays were found at levels about 70 times higher than metabolites of [one of] the [phthalates] chemicals banned in soft plastic toys." [103]

- **Polyethylene Glycol.** Also see PEG.

- **Propyl Paraben.** Propyl paraben is used as a preservative with antimicrobial properties. Also see parabens (hormone disruption, possible birth defects).

- **Propylene Glycol (PG).** PG along with butylene glycol (BG), polyethylene glycol (PEG), and ethylene glycol (EG) are petroleum derivatives that act as solvents, surfactants, and wetting agents. They can easily penetrate the skin and can weaken protein and cellular structure. In fact, PG penetrates the skin so quickly that the EPA warns factory workers to avoid skin contact to prevent brain, liver, and kidney abnormalities. PG is present in many stick deodorants, often in heavier concentrations than in most industrial applications.[50] And propylene glycol is what is used to carry the "active" ingredients in those

transdermal patches into your body.[104]

The MSDS (Material Safety Data Sheet) for propylene glycol says: "May be harmful by inhalation, ingestion or skin absorption. May cause eye irritation, skin irritation. Exposure can cause gastrointestinal disturbances, nausea, headache and vomiting, and central nervous system depression." [105]

Propylene glycol is also used as a solvent in acrylics, stains, inks and dyes, and in cellophane and brake fluid. It is used as a preservative in flavored coffees. PG can have an anesthetic effect. Other side effects on animals exposed to PG include heart arrhythmia, stunted growth, decreased blood pressure, and even death.

Propylene glycol is also on the SPIN list, which is an internationally recognized list of allergens reported to cause human health problems.[89]

- **Psoralen.** Psoralen is a compound that is used to treat psoriasis. It penetrates the skin and increases skin cancer rates 83-fold.[23]

- **Quarternium-15.** Quarternium-15 is a common preservative in cosmetics and personal care products and is a formaldehyde donor. It is listed on the SPIN list as the second highest allergen in causing skin reactions, it is a preservative and anti-microbial and a severe cause of dermatitis. [106] (Also see formaldehyde.)

  Reproductive effects. Quarternium-15 has been found to be a teratogen (causes birth defects in animals).

  Developmental Abnormalities. Eye, ear, other developmental abnormalities have been associated with exposure to quarternium-15.

  Registered Pesticide. Quarternium-15 is a primary irritant and is registered pas a pesticide by the EPA.[107]

- **Sodium Hydroxide.** Also known as lye or caustic soda, sodium hydroxide is found in toothpaste, eye drops and other personal care products. The MSDS for it says "POISON! DANGER! Corrosive. May be fatal if swallowed, harmful if inhaled. Causes burns to any area of contact, reacts with water, acids, and other materials. Health effects include mild irritation to serious damage, severe burns of mouth, throat, and stomach, severe scarring and death may result, causes irritation of eyes."

  Why is it included in toothpastes? The action of the lye raises the pH and helps remove stains and discolorations on teeth. This seems to be an extreme way to get whiter teeth!

Sodium hydroxide is in drain cleaners and oven cleaners. You can buy lye in the plumbing department of your hardware store. All these products have the same warnings as that noted above, but there are no warnings about sodium hydroxide on toothpaste tubes.

- **Sodium Laureth Sulfate.** Sodium laureth sulfate is an ethoxylated cleanser. A 1992 FDA survey found 54 ethoxylated raw materials used in cosmetics were tested and all 54 contained 1,4 dioxane. Also, the highly toxic 1,4 dioxane was in 27 out of 30 children's bubble bath and shampoo products. [30] Also see 1,4 dioxane.

- **Sodium Lauryl Sulfate, Sodium Laureth Sulfate & Ammonium Lauryl Sulfate.** SLS, SLES, and ALS are used as detergents, surfactants and foaming agents. These compounds can be found in almost any kind of industrial cleaning agent. They are even more widely used as major ingredients in cosmetics, hair conditioners, toothpaste, about 90% of all shampoos, other products that foam (including those made especially for babies), and in products designed to be left on the skin for an extended period of time, such as bubble bath.

Penetrates into Heart, Brain. An American Cancer Society news report quotes Keith Green, Ph.D., D.Sc. in refuting the rumor that SLS causes cancer: "Like many other chemicals, it is the manner of usage that is important. As long as you don't rub it all over your body and reapply it every hour for 24 hours, it's perfectly safe." [108] But people DO rub it all over their bodies many times a day while using many different personal care products and don't rinse it off immediately when they sit in bubble bath, or leave conditioner on their hair.

"We did a study using diluted SLS as an eye drop. We put the test amount [1 percent] on the eye of a rabbit and after a certain amount of time we found that SLS got inside the tissues, heart, brain, lungs." [89] It is at a concentration of more than 1 percent in most shampoos and liquid hand soaps, and other personal care products. SLS, SLES and/or ALS are usually the second ingredient listed after water. Check the shampoo shelves in your local store, and read the labels.

Skin & Eye Irritant. ""The CIR (Cosmetic Ingredient Review), the expert panel used by the CTFA Panel (Cosmetic, Toiletries & Fragrance Association) wishes to point out that these two ingredients (SLS and ALS) produce eye and/or skin irritation in experimental animals and in some human test subjects." [109] "The longer [SLS] stays in contact with the skin, the greater the likelihood of irrita- tion. [SLS] causes severe epidermal changes to the area of the skin of mice to which it was applied. This study indicates a need for tumor-enhancing activity assays, studies of rat skin treated with [SLS] found heavy deposition of the detergent on the skin surface and in the hair follicles. Further, it has been reported that 1 percent and 5 percent SLS produced a significant number of comedones [pimples and blackheads]. These two problems—possible hair loss and comedone formation—along with proven irritancy, should be considered in the formulation of cosmetics products." [110]

Accelerates Aging. It is now known that accelerated signs of aging, such as wrinkles, brown spots, and sagging skin are formed from a chain of events that are precipitated by inflammation. Scientists use SLS when they desire to irritate skin in order to test an

anti-inflammatory drug. [111]

Gingivitis. SLS is a very common detergent used in toothpastes, even those sold at health food stores. Another research paper shows that SLS has protein-denaturing properties, causing skin [and gums] to separate and become inflamed. This is a major cause of gingivitis, the gum disease present in 97% of the population.[112]

Ulcers. It is this property that may leave mucous membranes in the mouth open to microscopic damage. SLS has been shown to contribute to mouth and gastrointestinal ulcers12 and yet SLS is an ingredient in most national brands of toothpaste.[113]

- **Stearamide MEA.** This chemical ingredient is an emulsifier used to hold oil and water together. It is listed as having similar brain and memory side effects as DEA and may contain nitrosamines, a known carcinogen, as a by-product of manufacturing. Also see DEA - MEA - TEA.

- **Talc.** Reports in The Lancet (1979) and Obstetrics & Gynecology (1992) confirm a cancer risk associated with frequent and prolonged use of talcum powder in the genital area. Talc is the main ingredient in most baby powders and adult after-bath dusting powders.[114]

- **Triethanolamine (TEA).** TEA is commonly found in cleansers, lotions, gels, shave creams and bath powders. It is often used to raise the pH of formulas and as a coating agent for fresh fruit and vegetables. Listed as having similar brain and memory side effects as DEA, it may contain nitrosamines, a known carcinogen, as a by- product of manufacturing. Also see DEA - MEA -TEA.

- **TEA-Lauryl Sulfate.** A high-foaming detergent found in shampoos, TEA-lauryl sulfate is a combination of triethanolamine and the salt of lauryl sulfuric acid. It may contain nitrosamines, a known carcinogen, as a by-product of manufacturing. It also is listed as having similar brain and memory side effects as DEA. Also see DEA - MEA- TEA

- **Toluene.** Toluene (also known as toluol or methylbenzene) and xylene (also known as xylol or dimethylbenzene) are aromatic hydrocarbons found around the home, in cosmetics, perfumes in paints, paint and varnish removers, degreasers, cleaners, lacquers, glues, nail polish, and cement. Because of their excellent ability to dissolve substances, they are often used in insecticides and other pesticides to dissolve the active ingredient. Toluene and xylene are volatile, flammable and toxic and used as an octane booster in gasoline.(Also See Xylene)

Toluene and xylene are irritating to the skin and respiratory tract and may cause liver damage. These aromatic hydrocarbons enter your system through inhalation and ingestion, but are poorly absorbed by the

skin. The target organs attacked by toluene and xylene are the central nervous system, eyes, liver, kid- neys, and skin. Toluene and xylene are narcotic in high concentrations.

Inhaling these substances can cause headache, giddiness, and a transient euphoria followed by depression. Hallucinations may occur, especially following chronic exposure. Neurological damage occurs from concentrated inhalation of these fumes. Symptoms include fatigue, weakness, confusion, headache, tearing, nervousness, muscular fatigue, insomnia, dermatitis and an intolerance of light.

- **Triclosan.** The latest rage in the arsenal of antibacterial chemicals is Triclosan. It is included in toothpastes, mouthwashes, deodorants, cosmetics, lotions, creams, detergents, dish soaps and laundry soaps. The EPA registers triclosan as a pesticide, giving it high scores as a risk to both human health and the environment. During mixing, loading and application of pesticides, the skin is the most likely body surface to come into contact with the product. Many pesticides can be absorbed through the skin into the blood, and can cause toxic effects. The amount of pesticide absorbed through the skin (percutaneous absorption) may be enough to produce severe toxic reactions including death. In addition, pesticides can also injure the skin directly, a process known as cutaneous toxicity.[115]

Hormine Diruptor. Triclosan's manufacturing process may produce dioxin and furans, powerful carcinogens and hormone-disrupting chemicals with toxic effects115 in the parts per trillion (one drop in 300 Olympic-sized swimming pools). Research states these compounds are very similar to those in Agent Orange.

Cancer. Triclosan is a chlorophenol, a class of chemicals suspected of causing cancer in humans. Externally, it can cause skin irritations, but since "phenols can temporarily deactivate the sensory nerve endings, contact with [triclosan] often causes little or no pain. Internally, it can lead to cold sweats, circulatory collapse, convulsions, coma, and even death. Stored in body fat, it can accumulate to toxic levels, damaging the liver, kidneys, and lungs, and can cause paralysis, sterility, suppression of immune function, brain hemorrhage, decreased fertility and sexual function, heart problems, and coma." [116]

Other Names. As you look at product labels, be aware of some of the other names for triclosan: aquasept, sapoderm, gamophen, sterzac CH-3635. Some of these are used when triclosan is melded with plastics to produce hot tubs, baby bottle nipples and pacifiers and toys.

Does it even work? "In 1998, Americans snatched up $540 million of these products, without proof that they even do what they claim."[117] The FTC's Bureau of Consumer Protection has warned that antibacterial-containing products don't protect any better than soap-and-water washing.[118] Triclosan is ineffective as an antibacterial when used on hard surfaces, such as on counters and dishes.

"In households with young children, they have become a standard fixture at the sink. Foamy, glittery, neon-colored or fruity, antibacterial soaps are to today's parents what a warm hat was to their parents: a guardian against illness and a visible yardstick of good parenting. As it turns out, plain soap would do just as well. That's the finding of a recent study, which concluded that using antibac- terial products—soaps or detergents with triclosan, quarternary ammonium compounds or oxygenated bleach—seemed to make no difference in a family's likelihood of suffering coughs, runny noses, sore throats, fever, vomiting or diarrhea."[119]

Triclosan creates superbugs: Boston-based microbiologist Laura McMurray and colleagues at the Tufts University School of Medicine, say that triclosan may be capable of forcing the emergence of superbugs.[120] These scientists warn against using products that contain triclosan: "It could backfire by changing the kind of bacteria in our houses [hospitals and doctors offices] to those that may actually be harmful," said Dr. Stuart Levy of Tufts University. A new study in the journal Nature states that triclosan may cause some bacteria to mutate and create new strains that are resistant to antibacterial chemicals.115 "Use of bug-killers contributes to the growth of resistant strains. Then, when you really need to kill a disease microbe, you can't." [121]

- **Xylene.** Xylene (also known as xylol or dimethylbenzene) and toluene are aromatic hydrocarbons found around the home in paints, paint and varnish removers, degreasers, cleaners, lacquers, glues, nail polish, and cement. Because of their excellent ability to dissolve substances, they are often used in insecticides and other pesticides to dissolve the active ingredient. Toluene and xylene are volatile, flammable and toxic. [122] (Also see toluene.)

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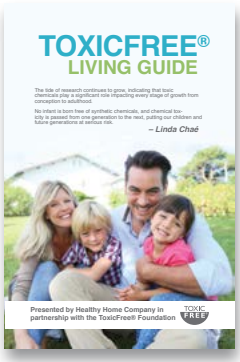

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