

# Chemical Consciousness

The Hazards of  
Personal Care  
and  
Cleaning Products



1981



CHeM  
*Conscious*

2014













RP-18  
TEQUILA STORAGE TANK  
CAP. 100,000 WG







10

SAUTTER  
Class  
Export  
1932-1432

LIEBHERR

SAUTTER  
Class  
Export  
1932-1432

LIEBHERR

RES

PA 231

07/20/2010

# Agenda

- ▶ Donna's Story
- ▶ Risk
- ▶ Everyday Chemicals – Where are they?
- ▶ Understanding Labels
- ▶ Cosmetic Ingredients
- ▶ Cleaning Product Ingredients
- ▶ Resources
- ▶ Detoxify YOUR Life





# Donna's Detox





Jan 30, 2012



Feb 23, 2012



March 8, 2012



May 9 2012



June 23, 2012



Aug 1, 2012



Oct 24, 2012



Dec 7, 2012



Feb 4, 2013



March 15, 2013



# The Concept of Risk

# A Risky Game





# A Risky Game



# A Risky Game





# RISK

Risk Is The Product of  
Frequency Of Occurrence (F)  
And  
Potential Consequences (C)  
for an Event

$$\text{RISK} = F \times C$$



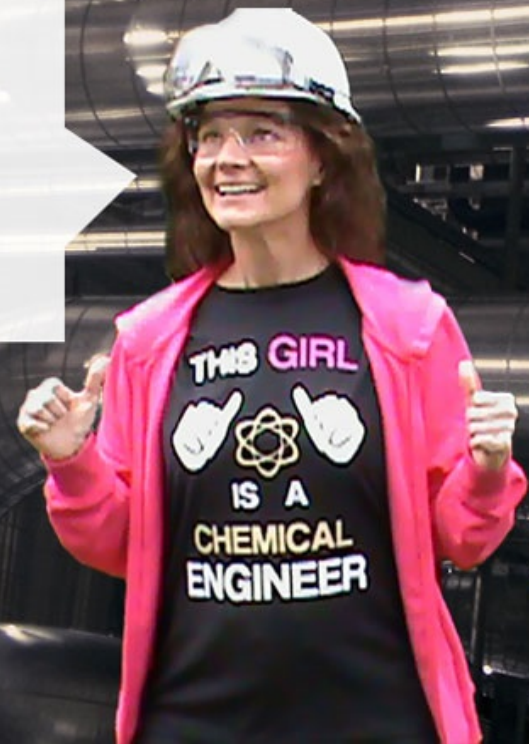
# Acceptable Risk

What is acceptable to **YOU**?





**Look at the things  
you do **EVERY DAY.**  
Reduce those  
hazards to get the  
biggest risk  
reduction.**



# Evaluate the Things that You Do Every Day

Swim    Clean House    Eat Brownies    Chew Gum

Exercise    Drink Coffee    Paint    Sleep    Travel





# Everyday Chemicals



# Routes of Exposure

Four ways that toxins enter the body:

- ▶ Inhalation
- ▶ Absorption
- ▶ Ingestion
- ▶ Injection



# Airborne Contaminants - Inhalation

- ▶ Carpet, furniture, cookware and other household items that “off-gas” into the home
- ▶ Heating systems including fireplaces, woodstoves and space heaters
- ▶ Dry cleaning brought into the house
- ▶ Candles and fragrances
- ▶ Cleaning Products
- ▶ Toxins brought in to the house on our shoes
- ▶ Mold, Fungi and other things that “grow” in the house





# How to Clean Up the Air

- ▶ Ventilation
- ▶ Filtering



# Water Contaminants

Inhalation Ingestion Absorption

How your household water supply becomes unhealthy

- ▶ Chemicals added by the Water Company
- ▶ Chemicals that enter the water supply
- ▶ Substances naturally in some water supplies
- ▶ Mold, Fungi, bacteria and other things that “grow” in the water system



# How to Clean Up the Water

- ▶ Public vs. Private Well
- ▶ Purification vs. Filtration
- ▶ Bottled Water





# What's In Our Products?

- ▶ Very common hazardous ingredients in personal care and cleaning products (GRAS)
- ▶ Toxins in cleaning products – no labeling requirement for cleaning products
- ▶ Threats to family pets and small children from cleaning products and flea products
- ▶ Incompatible mixtures of cleaning products
- ▶ Other hazards of personal care/cleaning products – flammability, reactivity, corrosivity



# How to Choose Our Products

- ▶ Learn to understand labels
- ▶ Learn to recognize the dangerous ingredients
- ▶ Research and purchase safe alternatives
- ▶ Consider making your own products
- ▶ Understand advertising techniques and deceptions



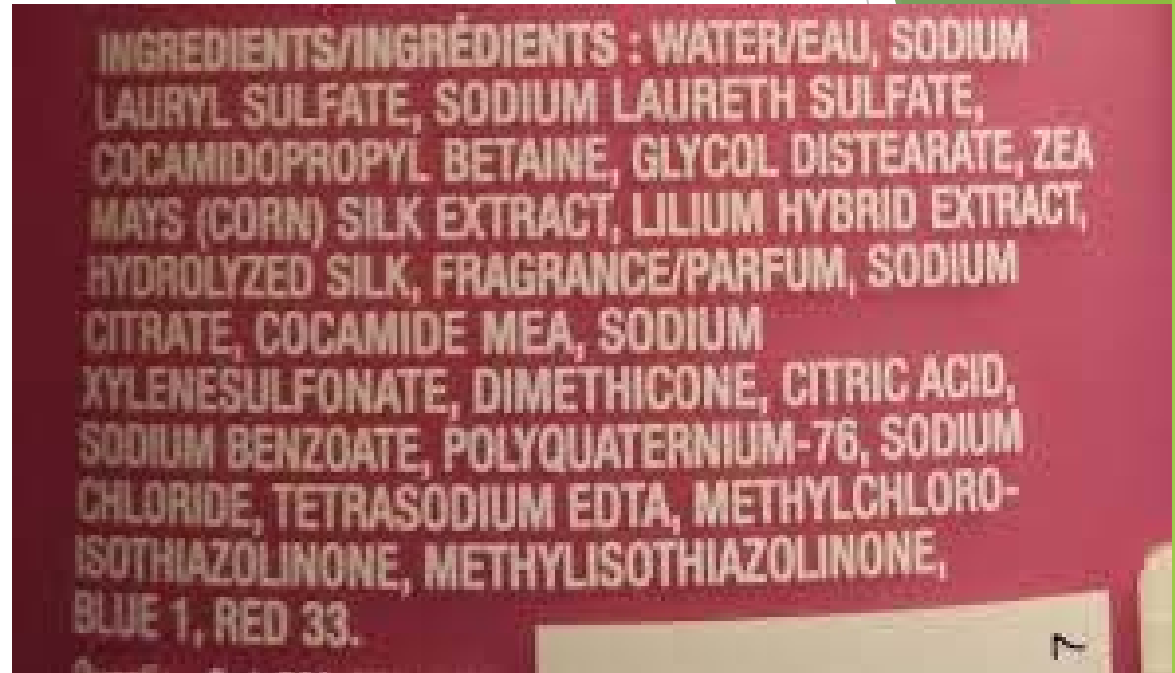
# Understanding Labels





# How Labeling Works

- ▶ Ingredients are listed in decreasing order of weight
- ▶ Less than 2%, they can be listed in any order or sometimes not at all
- ▶ FDA does not require cosmetics companies to conduct safety assessments on their products



# What is NOT on the Label

- ▶ Processing Aids
- ▶ Ingredients that are present in quantities less than 2% by weight are optional
- ▶ “Harmless Markers” that producers add to identify their products
- ▶ Herbicides
- ▶ Pesticides



# Naturally Misleading





# Cosmetic Ingredients



# Cosmetics and Personal Care Products

- ▶ The skin is the largest organ in the body
- ▶ *Never put anything on your skin that you wouldn't be willing to eat!*
- ▶ Exception: large-molecule substances like titanium dioxide and zinc oxide (found in sunscreens)
- ▶ Use [www.ewg.org](http://www.ewg.org) Skin Deep and Sunscreen databases to check all personal care products



# Parabens

- ▶ Class of compounds used in cosmetics as antifungal preservatives
  - ▶ Butylparaben, ethylparaben, isobutylparaben, methylparaben, propylparaben
- ▶ Is absorbed by the skin and mimics estrogen in the body
- ▶ Can cause problems with male fertility
- ▶ Has been found in breast tumors
- ▶ When put on skin, can cause DNA damage and increased skin aging

# "Fragrance"

- ▶ An undisclosed mixture of chemicals
- ▶ Can cause irritability, muscle pain, asthma, bloating, joint aches, sinus pain, fatigue, sore throat, eye irritation, gastrointestinal problems, laryngitis, headaches, dizziness, swollen lymph nodes, spikes in blood pressure, coughing, and/or burning or itching skin irritations.
- ▶ Many people are allergic to fragrance and often do not know it until they are away from it for a while and then experience an immediate return of symptoms upon re-exposure.



# Butylphenyl Methylpropional

- ▶ Used as a fragrance ingredient
- ▶ Acts as an allergen, can cause dermatitis
- ▶ May act as estrogen within the body and lead to breast cancer.

# Benzoyl Peroxide

- ▶ Treats acne by causing the skin to dry and peel
- ▶ Can bleach towels, eyebrows, hair, and clothing
- ▶ Can cause peeling, itching, irritation, and reddened skin
- ▶ Some people may have severe allergic reactions leading to rash, swelling, dizziness, and trouble breathing
- ▶ Shown to promote tumors in rats.

# Phthalates

- ▶ May be disruptive to the endocrine system - developmental, reproductive, and neurological damage.
- ▶ Ability to mimic human hormones –
  - ▶ could cause reproductive abnormalities and decreased production of testosterone in males, and decreased male fertility.
  - ▶ Link between phthalates and premature delivery and endometriosis in women.
- ▶ Used to plasticize products, making them more flexible or better able to hold in color and scent. Can be grouped under and listed as “fragrance.”



# Lead

- ▶ A proven neurotoxin linked to miscarriage; reduced fertility; and delays in the onset of puberty for females.
- ▶ Campaign for Safe Cosmetics found lead in over half of the 33 brands of lipstick they tested. A more recent study by the FDA tested popular brands and found 400 that contained up to 7.19ppm of lead.
- ▶ Not added as an ingredient, but enters through contamination. Color additives are some of the most common sources. Buy products colored with fruit and other natural pigments.
- ▶ Hazardous to municipal workers





# Aluminum Chlorohydrate

- ▶ Found in antiperspirants
- ▶ Aluminum has been found in breast tumors
- ▶ Alzheimer victims have elevated levels of aluminum
- ▶ Interferes with normal body route of detoxification
- ▶ Hazardous process for plant employees



# Ceteareth-20

- ▶ May contain impurities containing ethylene oxide or 1,4-dioxane, which are known carcinogens.
- ▶ Furthermore, it enhances penetration of the skin by other chemicals, which could allow these carcinogens and other harmful substances into the body.

# Formaldehyde

- ▶ Formaldehyde is a known carcinogen
- ▶ Formaldehyde is released from certain common preservatives
- ▶ Phenoxyethanol is a safer alternate preservative, however still has some hazards such as shutdown of the central nervous system and vomiting. It is also an irritant.

# Formaldehyde-Releasing Ingredients

- ▶ Preservatives that release formaldehyde
  - ▶ Diazolidinyl urea,
  - ▶ DMDM hydantoin,
  - ▶ imidazolidinyl urea
  - ▶ BHT (butylated hydroxytoluene)
  - ▶ Bronopol
  - ▶ sodium hydroxymethylglycinate
  - ▶ imidazolidinyl urea
  - ▶ methenamine
  - ▶ quarternium-15, Quaternium-18, Quaternium-26





# Preservatives

- ▶ BHA– Causes cancer in mice, rats, hamsters, and fish, and is suspected to be a carcinogen for humans.
- ▶ TBHQ—High doses can cause nausea or collapse. Linked to stomach cancer and DNA damage.
- ▶ BHT – Linked to organ, developmental and reproductive toxicity. May induce allergies.
- ▶ European Commission on Endocrine Disruption lists BHT and BHA as a Category 1 priority substance due to evidence that it interferes with hormonal function

# Sodium Benzoate and Potassium Benzoate

- ▶ Form carcinogenic benzene (known arcinogen) in soft drinks when combined with ascorbic acid (Vitamin C).
- ▶ Linked to leukemia.
- ▶ Can cause allergic reactions.
- ▶ Avoid soft drinks and cosmetics preserved with these chemicals

# PEG-(number)

- ▶ A polymer made from polyethylene glycol used to thicken cosmetics.
- ▶ May be contaminated with carcinogens (ethylene oxide and 1, 4 – dioxane) which are known to cause uterine, breast, and brain cancer. If used on broken or damaged skin can cause kidney toxicity.
- ▶ Examples: PEG-100 Stearate, PEG-23M, PEG-7 Glyceryl Cocoate

# Retinyl Palmitate

- ▶ When exposed to UV light, breaks down to create free radicals which damage skin and cause skin tumors. Can be toxic to a developing fetus.
- ▶ Found in lipstick, foundation, sunscreen, moisturizers, etc
- ▶ Often listed as "Vitamin A"



# Sodium Laureth Sulfate and Sodium Lauryl Sulfate

- ▶ Can cause skin or eye irritation. Exposure over time may cause allergic reactions of redness, swelling, or hives.
- ▶ May be contaminated with carcinogens which are known to cause uterine, breast, and brain cancer.
- ▶ Look for products that have a Compact for Safe Cosmetics signature.



# p-Phenylenediamine

- ▶ A type of coal tar dye sometimes listed as CL followed by a five-digit number (CL-xxxxx)
- ▶ It is a respiratory hazard and can cause asthma, hives, redness, and swelling of skin
- ▶ Can be absorbed by the skin and cause allergic reactions. Can cause swelling of the mouth and throat
- ▶ Found in hair dyes
- ▶ Can be contaminated with heavy metals

# Other Ingredients

- ▶ Myristyl alcohol—Linked to skin tumors in animals. Can irritate skin, especially sensitive skin.
- ▶ Propylene Glycol Alginate—can cause allergic reactions that include hair loss, rashes, and eye irritation. High doses can cause seizures in children.
- ▶ Siloxanes - Used in cosmetics to soften, smooth, and moisten. They disrupt the endocrine system and are toxic to the reproductive system. These end in -siloxane or -methicone
- ▶ Carbon Black – found in eyeliner. Linked to cancer and organ toxicity. (Also called pigment black 6 or 7, acetylene black, black pearls, channel black, froflow, arogen, arotone, arovel, arrow or atlantic.)



# Other Ingredients

- ▶ Cyclomethicone—May irritate eyes. Linked to uterine cancer in rats at high concentrations.
- ▶ D&C Violet No.2—Banned for use in food and for around the eyes, may be carcinogenic.
- ▶ Isobutane—Can irritate skin, eyes, and lungs. May cause asphyxiation, narcosis, drowsiness, or shortness of breath. May be contaminated with carcinogens.
- ▶ Octinoxate - an unstable chemical linked with endocrine disruption and thyroid disorders. Often found in foundations.



# Triethanolamine - TEA

- ▶ Inhalation of this chemical can cause allergies as well as asthma.
- ▶ Can interfere with hormones.
- ▶ Can damage immune system by desensitizing it and making you less capable of fighting infection.
- ▶ May be contaminated with cancer-causing nitrosamines.



# Cleaning Products



# Cleaning Products

- ▶ NOT required to be labeled with ingredients
- ▶ Responsible companies voluntarily disclose ingredients
- ▶ Use [www.ewg.org](http://www.ewg.org) Cleaning Product database to check cleaning products even if the label says they are safe



# Cleaning Products

- ▶ In the absence of labeling.....

Pay Attention to the Warnings!!!



# Chlorine

- ▶ Acutely toxic by inhalation
- ▶ Chronic effects by skin absorption and ingestion
- ▶ Affects thyroid by interfering with iodine absorption
- ▶ Reacts with organic materials to form trihalomethanes (THM's) which are carcinogenic
  - ▶ Your body is organic!
  - ▶ Many contaminants in drinking water are organic



# Triclosan

- ▶ Used in cleaning supplies and antibacterial hand washes
- ▶ Impairs muscle function
- ▶ Mimics estrogen in the body and can increase risk of breast cancer
- ▶ Linked to liver toxicity
- ▶ Linked to antibiotic resistance
- ▶ Destroys probiotic environment in the gut



# Deet (Insect Repellant)

- ▶ Heavy exposure can cause memory loss, headache, weakness, fatigue, tremors, and shortness of breath.
- ▶ Use sparingly, wear long clothes and spray onto clothes. Follow instructions on label strictly. Wash skin after exposure.

# Synthetic Dyes

- ▶ Some are linked to hyperactivity in children
- ▶ Variety of effects:
  - ▶ Red 3: Linked with thyroid damage
  - ▶ Red 4: Toxic to kidney and bladder
  - ▶ Yellow 5: Can cause allergic reactions, migraines, blurred vision, itching
  - ▶ Yellow 6: Can cause allergic reactions of upset stomach, diarrhea, vomiting, rash, and swelling
  - ▶ Yellow 10: Can damage DNA

# Resources

- ▶ [www.ewg.org](http://www.ewg.org)
- ▶ [www.epa.gov](http://www.epa.gov)
- ▶ <http://www.cdc.gov/niosh/>
  
- ▶ [www.ChemConscious.com](http://www.ChemConscious.com)



# Detoxify Your Life Product

- ▶ Program that effortlessly guides you through the hazard identification process in 5 areas of your life
- ▶ Assess **YOUR** risk based on the likelihood that **YOU** will be exposed to toxins based on **YOUR** own personal habits, behaviors and your environment.
- ▶ Risk based online downloadable checklist
- ▶ Step-by-step formula for uncovering hidden toxins



# SHINE Special Pricing

- ▶ Special Pre-launch Pricing
- ▶ Regular price \$19.99 – your price today only \$9.99
- ▶ Includes lifetime membership to [www.chemconscious.com](http://www.chemconscious.com)
- ▶ Includes
  - ▶ Checklists and instructions
  - ▶ Invitation to exclusive conference call with Donna – only those who purchase at SHINE
  - ▶ MP3 of never-released call with Donna and Dr. Ritamarie on the topic of Detoxification

