

# ENVIRONMENTALLY SOUND CLEANING PRODUCTS

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# WHAT'S UNDER YOUR KITCHEN SINK?



If you take a look under the typical kitchen sink, you'll find an assortment of cleaning products hanging around there.

Those products mostly fall into broad groups based on their mode of action.

# WHAT'S INSIDE YOUR BOTTLE? HOW DO YOU KNOW?

It can be hard to find out exactly what's in the bottle in your hand. Words like "green", "naturally derived" and "natural" can be misleading and the absence of mandated full ingredient lists make things tougher.

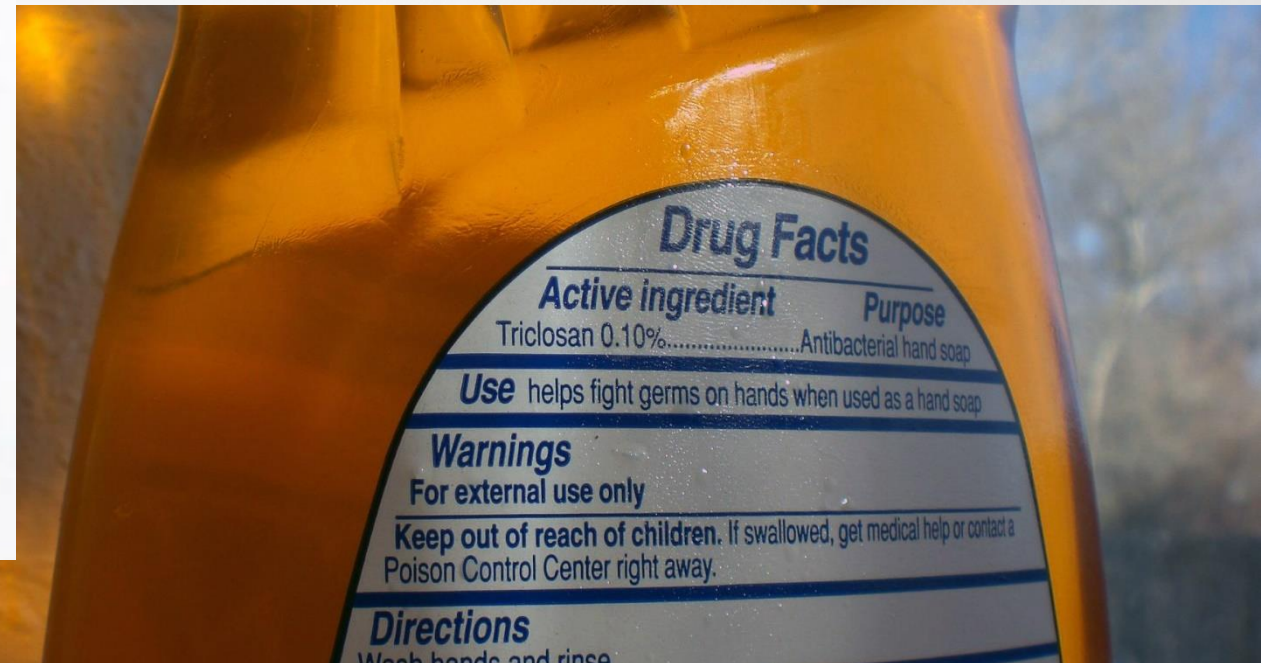
Understanding the classes of cleaning compounds can help you to know what chemicals might be present in the cleaning product you own or are considering buying, and whether it is likely to contain chemicals or compounds that you should be wary of.

and ensure cap is closed securely.



 <b>CORROSIVE</b>	 <b>OXIDISING</b>	 <b>HARMFUL</b>	 <b>HIGHLY FLAMMABLE</b>
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**DRAIN CLEAR CONTAINS SODIUM NITRATE AND SODIUM HYDROXIDE.**  
Harmful if swallowed. Flammable. Contact with combustible material may cause fire. Contact with water liberates extremely flammable gases. Causes severe burns. Keep locked up and out of the reach of children. Avoid contact with skin and eyes. Wear suitable protective clothing gloves, eye/face protection. In case of contact with skin or eyes, rinse immediately with plenty of water and seek medical advice. In case of accident, or if you feel unwell, seek medical advice immediately (show this label where possible).



# IS THE PRODUCT SAFE? HOW CAN YOU TELL?



martha stewart  
**clean**



**ECOVER**  
POWERED BY NATURE

seventh  
**GENERATION.**

biokleen  
PROFESSIONAL

green  
works

method.  
detox your home



# WHAT ARE SOME OF THE WATER QUALITY PROBLEMS CLEANERS POSE?




In general terms, the problems that household cleaners cause are through direct exposure during the cleaning process by irritating or causing allergenic reactions.

They may persist in the environment either in the home or in water bodies. They can cause health impacts such as; disrupting hormone cycles, causing cancer or other toxicological problems, they can cause unintended additive impacts when multiple products are mixed together in waste water systems, and finally, by introducing non-natural materials into the environment.



# TYPICAL CLEANING PRODUCT COMPONENT CHEMICALS

- DEGREASERS
  - SURFACTANTS
  - ABRASIVES
  - DISINFECTANTS AND ANTIMICROBIALS
  - BLEACHES
  - MINERAL STAIN AND HARD WATER SPOT REMOVERS
  - SPECIALIZED STAIN REMOVERS
  - POLISHES
  - FRAGRANCES
- 

**“Madge! You use a dishwashing liquid to soften hands?”**

Found in Mom's Basement



**“Doesn't everybody?”**



“Seriously. It would have to be awfully mild.”

“Palmolive® Dishwashing Liquid is a lot more than just mild. At home the suds last me a lifetime. And it softens hands while you're doing the dishes!”

Don't just do dishes. Soften your hands!

©1968, Colgate-Palmolive Co.

## DEGREASERS

Here are the basic ingredients of most cleaning products and they work:

Degreasers - break down oils and fats - from finger prints on glass to dried on food residue.

Household cleaners typically have degreasing agents in combination with other compounds that hold dissolved grease in suspension ,and 'builders' which keep minerals and dirt from being redeposited.



# SURFACTANTS

Surfactants - these compounds lower the [surface tension](#) between two liquids or between a liquid and a solid.

Think of adding a drop of detergent to an oily pans. Surfactants may act as [detergents](#), or [wetting](#) agents. They can break fats up into tiny drops and [dispersants](#).

Whitening agents, optical brighteners, enzymes and perfumes are typically present.



**Bon Ami**

*Makes it glisten—*

Bon Ami powder makes the tub so clean and white that I just like to stand and look at it!

It makes the tub glisten, for it is the only cleaning powder with a real polishing action. And it does not scratch or grind the delicate enamel.

Bon Ami also cleans the nickel faucets—makes them look like new silver.

Made in both color and powder form.

That's what's so good!

## ABRASIVES

Abrasives- Abrasive cleaners are designed to provide some built in elbow grease to reduce the amount of scrubbing required.

The abrasive ingredient can be provided by inert materials such as metal particles, minerals such as quartz, feldspar, silica or calcite, or even plastic or metal fragments or granules.

The abrasive cleaners clean and polish and surfactants remove oily films on solid surfaces without scratching too much.

# DISINFECTANTS AND ANTI-MICROBIALS

Disinfectants contain antimicrobial agents, such as pine oil, sodium hypochlorite, quaternary ammonium compounds or phenols, which kill bacteria and viruses on surfaces.

Bleach and triclosan are other chemicals added to cleaners for their anti-microbial effects. A surface needs to be free of heavy soil for effective disinfection.

Disinfectant cleaners contain surfactants and builders to remove soil in addition to antimicrobial agents to kill germs. Therefore, they are effective at cleaning surfaces as well as killing germs.



Good counsel for the counselor. Spray Lysol on bathroom surfaces to kill germs other people leave behind.



Put air-conditioned air in better condition. Spray Lysol in enclosure to freshen up the air-conditioned air.

## Send a can of Lysol<sup>®</sup> to camp this summer.



Hit the showers with Lysol. Spray to kill athlete's foot fungus on the shower floor.



Spray inside sneakers to eliminate odors.



Freshen the great indoors. Spray Lysol to eliminate odors in the air.



Make a fresher bed. Use Lysol to freshen sheets, pillows, mattresses and blankets.

**Lysol Disinfectant Spray kills household germs, including germs that cause odors.**



# Who are the brightest kids in America?



In a recent national survey, moms rated Vivid® higher than Clorox 2® for making clothes look clean. For whitening whites. And for removing stains. In fact, they rated Vivid higher for overall performance.

When it comes to keeping kids looking their brightest, Vivid moms know best.

Don't just get 'em clean. get 'em Vivid

© 1989 DowBrands

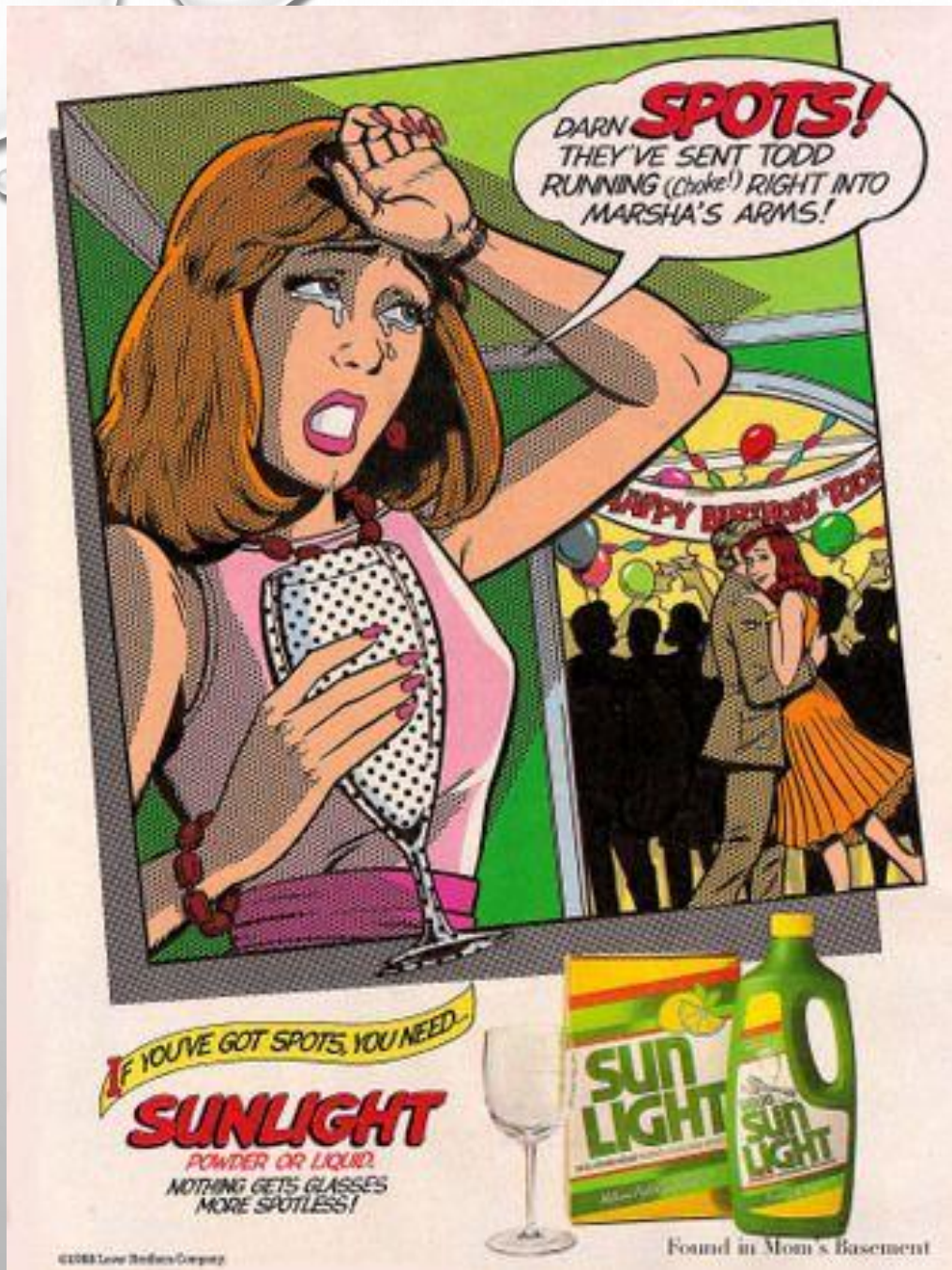
Found in Mom's Basement

## BLEACHES

Bleaches contain sodium hypochlorite, or hydrogen peroxide if they are non-chlorine bleach.

Bleaches remove stains, brightening surfaces in addition to disinfecting by killing all bacteria, viruses and fungi.

**They often contain harsh fragrances to mask the bleaching agent,** optical whiteners and thickening agents.



## MINERAL STAIN AND HARD WATER SPOT REMOVERS

Water hardness is caused by the presence of dissolved mineral salts, such as those of calcium, magnesium, iron and manganese that occur naturally in water.

When hard water evaporates, a mineral deposit is left. Hard water mineral removers contain acids, such as citric, oxalic, sulphamic, or hydroxyacetic acid to dissolve minerals, limescale, and rust. Some include surfactants to aid in cleaning and organic solvents to help remove soap scum. Mineral removers are effective where mineral deposits are visible around faucets, shower doors, and in tea kettles, humidifiers and toilet bowls. Their regular use helps prevent mineral deposit build-up. **They often are skin and mucus membrane irritants and can have strong irritant effect if they come in contact with the skin.**



Now! No Hard Rubbing! No Rinsing!  
**ONLY SOILAX CLEANS**  
Linoleum, Walls, Woodwork, Tile  
**THIS AMAZING NEW WAY!**



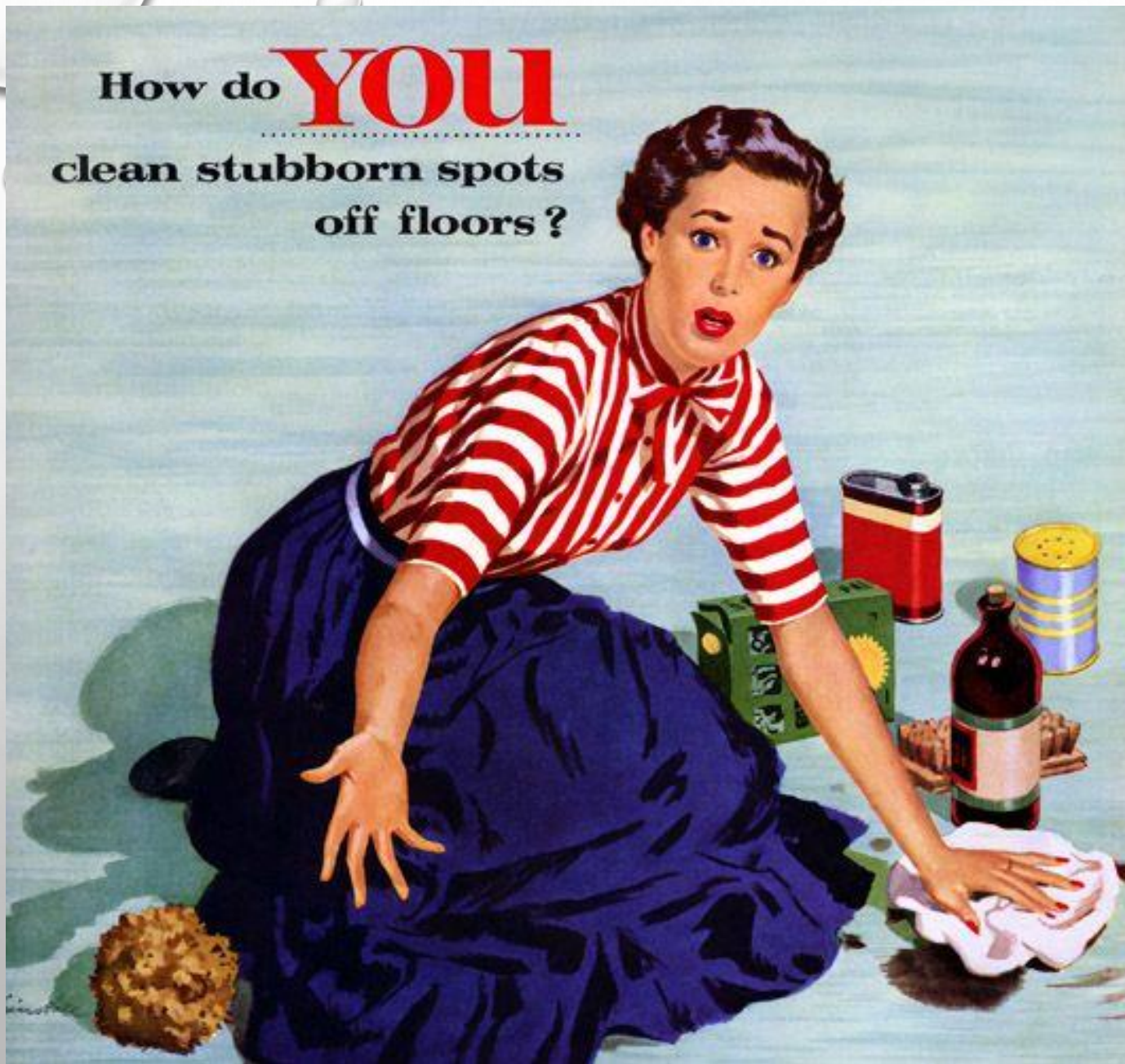
Even meanest cleaning jobs are a breeze when you use new SOILAX, the *ammoniated* cleaner. There's no grit, no caustic to damage paint or finish — yet SOILAX makes dirt and grease vanish like magic. With no hard rubbing! No rinsing! Leaves the surface *glistening* clean.

Get SOILAX today! Handy Household-size SOILAX for the bathroom. And for the kitchen get the jumbo Economy-size SOILAX with a free 39¢ O-Cel-O Dish Mop packed inside!

**SAFE FOR ALL  
WASHABLE SURFACES!**

**SPECIALIZED  
STAIN REMOVERS**

How do **YOU**  
clean stubborn spots  
off floors?



POLISHES



# FRAGRANCE

these can be naturally or artificially derived and often are in concentrations to persist on the surface or within the item cleaned for several days to weeks.

# NATURAL CLEANING INGREDIENTS & THEIR FUNCTIONS



Start by looking back to some of the cleaning products used historically.

Main ingredients were naturally sourced, but that didn't mean that the products were necessarily harmless.

White vinegar, baking soda, lemon juice, borax, ammonia, stale bread, newspaper – Even today there are 5 basic ingredients that can serve as the building blocks for environmentally safe cleaning products.



# CLEANING PRODUCT BASICS: BAKING SODA



A natural cleaner and deodorizer. It softens water to increase sudsing and magnify the cleaning power of soap.

Acts as a natural scouring powder.



# CLEANING PRODUCT BASICS: BORAX

Cleans and deodorizes.  
Natural disinfectant.  
Softens water.

Available in laundry section of grocery store – can irritate the skin with prolonged exposure.

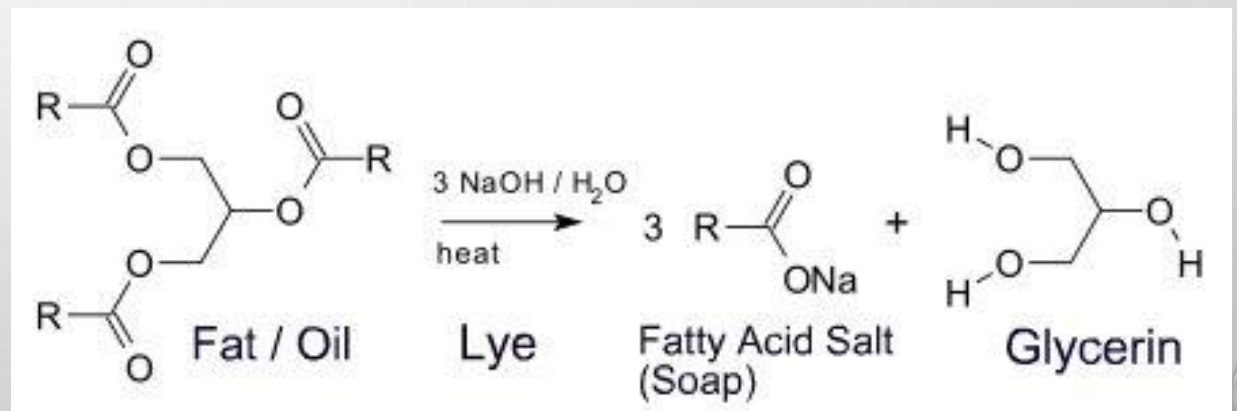


# CLEANING PRODUCT BASICS: SOAP

**Natural soap biodegrades safely and completely and is non-toxic.** Plant or animal Oils are reacted with lye or wood ash to make a liquid or solid. Bars can be grated to dissolve more easily in hot water.

The earliest use of soap is almost 5000 years ago. The story goes that rain washed a slippery mixture of melted animal fat (or tallow) and wood ashes down the Tiber River. Women found this mixture made their wash much cleaner without much effort.- the water quality implications for the river Tiber were not discussed!!

**Insist on soap without synthetic scents, colors or other additives.** Modern soaps used in dish detergents and washing soaps may not be made from plant based oils such as coconut or olive, but can be refined from petroleum products with the addition of sulfuric acid. Most soaps commercially sold include several other ingredients that sequester minerals to keep them from precipitating out. These are known as builders.



# CLEANING PRODUCT BASICS: WASHING SODA

**Washing Soda** removes stains, disinfects, and softens water.  $\text{Na}_2\text{CO}_3$  also known as sodium carbonate; not the same as soap, borax or baking soda but has similar uses and modes of action.

Available in laundry section of grocery store or in pure form from chemical supply houses as "sodium carbonate."



# CLEANING PRODUCT BASICS: VINEGAR AND LEMON JUICE

Cuts grease and freshens. Vinegar and lemon juice are natural acids that degrease and remove oils. Natural antimicrobial powers



# AIR FRESHENERS

Air fresheners... What's the problem? **Air fresheners often contain synthetic fragrances and other aerosol compounds that can trigger asthma and allergic reactions, and may trigger migraine in some sufferers.**

The perfume acts as an irritant to eyes and to the lining of the nose and lungs. Synthetic fragrances often cause a larger irritant response. **Use baking soda as a natural deodorizer, it's incredibly effective in reducing smells.**

For locations such as bathrooms or rooms where an aerosol is a must, consider placing a sprig of lavender, rosemary, thyme or citrus in a small dish over a candle to gently heat and release the oils to fragrance the room.



# SCOURING POWDER

While many scouring powders rely on mineral scouring agents such as calcite, feldspar or silica, others also add chlorine bleaching agents or ground plastic to act as their scouring agent.

**Natural scourers include salt and baking soda.** For cleaning metal, stale bread is incredibly effective and plentiful! A wet hard bristled toothbrush with a small amount of baking soda is incredibly effective at scouring out stains.



# WINDOW CLEANERS

Window cleaners work by using surfactants to break grease and remove stains, and solvents to carry away oils without leaving greasy residues. They also contain water as a carrier.

**Many common window cleaners contain ammonia products, which can be irritants, and have harsh fumes.**

They can react with other cleaners to produce dangerous fumes when mixed with chlorine compounds.

**Effective natural alternatives are acids or alkalis to break down the greasy film on glass.** Vinegar is an effective streak free cleanser, and 1 part vinegar to 4 parts water with a few drops of lavender or thyme oil will work wonders a drop of liquid soap can improve effectiveness. Newspaper is also an effective natural window cleaner as it contains micro abrasives and does away with the need for paper towels or clothes!





# CARPET CLEANER

These work by using surfactants to dissolve dirt, and polymers that solidify when dry to allow the product to be vacuumed up. They also include shampoos with optical brighteners, deodorizers, and soil retardants.

**Many common carpet cleaners include perchloroethylene, which the CDC warns can cause nausea, dizziness, fatigue and liver and kidney problems.** Naphtha is often a popular solvent and is manufactured from coal tar and is a CNS danger. Scotch guard contained perfluorochemicals, which are known to persist in blood and wildlife.

**Natural deodorizers can be shaken on as a combination of baking soda and essential oil, but for actual carpet cleaning, a nontoxic carpet cleaner spray or concentrate for shampooing machines includes hot water, hydrogen peroxide, white vinegar, natural dish soap, and essential oil.**



# FURNITURE POLISH

Typically applied as an aerosol, furniture polishes include waxes or oils to provide water repellency and shine.

Silicone and hydrocarbon based solvents to remove oily stains and waxes are now most common. Some waxes dry and some are non drying.

**Traditional furniture polishes used beeswax and citrus and pine oils for cleaning and waxing.** Biodegradable vegetable oils and added essential oil fragrance also can do the job effectively without use of synthetic hydrocarbons or silicone products. 1 cup vegetable oil and 1 teaspoon lemon oil with a clean dry cloth.



# METAL POLISH

These products contain organic acids such as oxalic, sulphuric or citric acid, **all of which are harsh contact and airborne irritants.** Clay like materials often provide the abrasive nature of metal polish.

An effective metal cleaner has an anti oxidizing agent and a micro abrasive – **toothpaste is incredibly effective,** as is vinegar and salt to bring back shine. 1 TBSP each baking soda and salt in a litre of water. Boil and add a strip of aluminium foil. Then place tarnished items into the solution briefly then blot with a clean cloth.



# DISINFECTANTS

Many people mistakenly use disinfectants on food preparation surfaces that are not intended for food use. Read the label. **Many disinfectants leave behind harsh chemicals, fragrance residues, or contain triclosan, which is known to cause antibiotic resistance.**

Many plant based oils have naturally disinfectant properties, such as thyme, rosemary, eucalyptus, or menthol. A disinfectant solution of white vinegar, water and lemon juice in a spray bottle will kill germs effectively. Also, borax and hot water is an effective disinfectant.



# TRICLOSAN

This is present in many more products than you would realize.

Anti-microbial clothing, clothes and cleaning products, including hand soaps may have been treated with triclosan.

The problem is that **triclosan causes disease resistance in bacterial in the aquatic environment.**

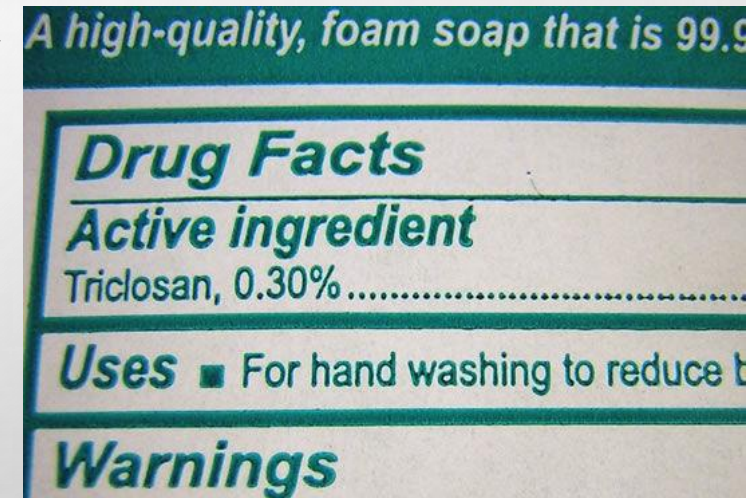
Many scrub sponges are treated with triclosan so they don't stink, but this can react with the chlorine in tap water causing chloroform – a suspected carcinogen.

Try cellulose or natural sponges instead; they are biodegradable and are naturally more absorbent. Scrub clothes can be cleaned in the top shelf of the dish washer. **Triclosan has been studied by the USGS and found to be present in the blood of young girls, and in streams where it is toxic to algae, fish and other wildlife.**



Triclosan goes through the wastewater treatment system, and the wastewater treatment plant actually does a pretty good job of removing it. Up to 95% of it is removed, **but we use so much triclosan that the rest of it persists.** Three of the leftover compounds are chlorinated triclosan derivatives. They are formed in the last step of wastewater treatment, when the wastewater is disinfected with chlorine before it's discharged.

Triclosan, along with these new compounds, react with exposure to the sun to forms a dioxin. Those chemicals are showing up in lake sediments.



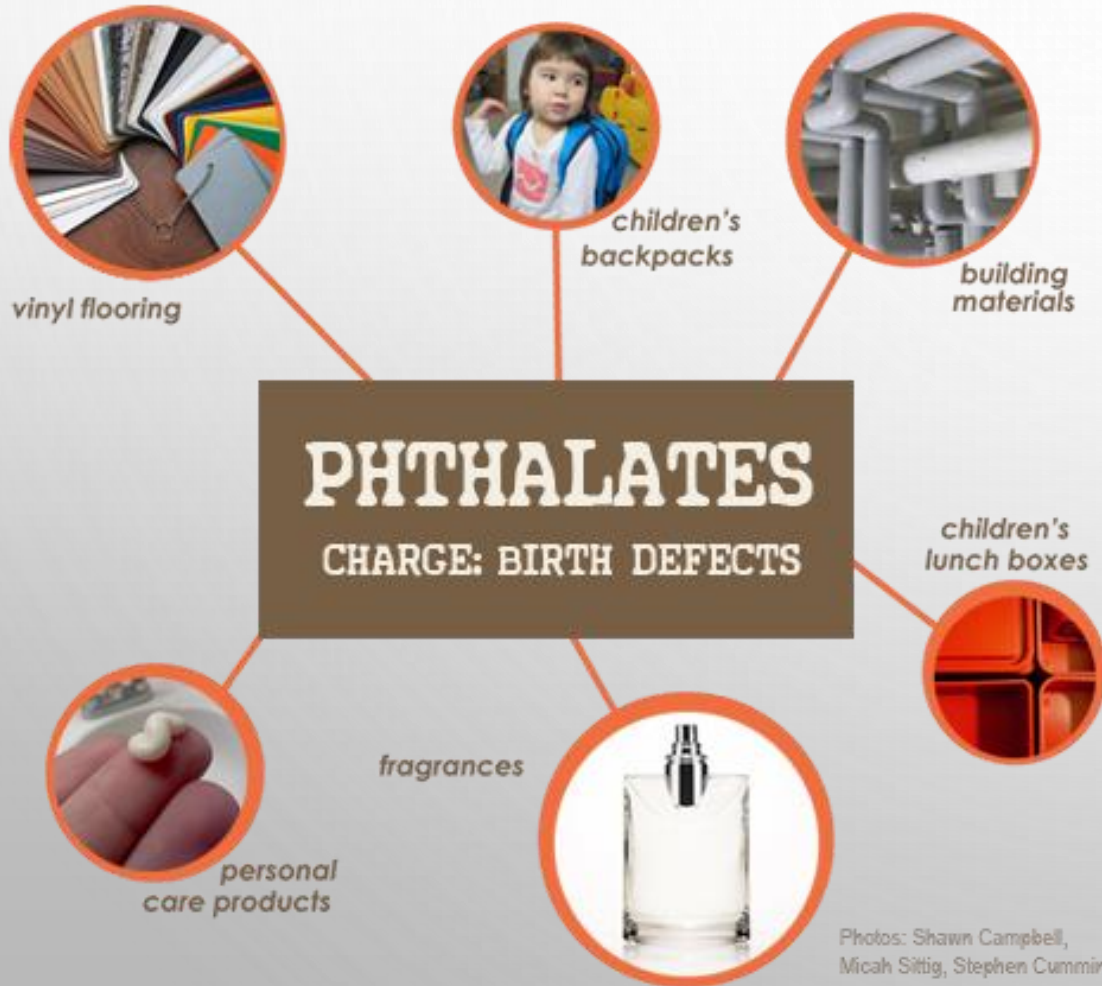
# PHTHALATES

About a billion pounds of phthalates are produced every year. Their use is so widespread that they are nearly impossible to avoid entirely.

Indeed, [95 percent](#) of us have detectable levels of phthalates in our urine. Phthalates are in perfume, hair spray, deodorant, almost anything fragranced (from [shampoo](#) to [air fresheners](#) to [laundry detergent](#)).

The effect of phthalates, especially on male reproductive development, has been observed since the 1940s, and phthalates are now widely known to be “[endocrine disruptors](#).”

Phthalates are thought to mimic and displace hormones and interrupt their production. This can have a range of unpleasant effects. A 2009 study determined that phthalate exposure correlated with [premature breast development](#) in young Taiwanese girls. To avoid phthalates **stay away from fragrance**. You rarely see phthalates listed on a product label but “**fragrance**” or “**parfum**” on a label almost always means phthalates. Look for “**no synthetic fragrance**” or “**scented with only essential oils**” or “**phthalate-free**.”



Photos: Shawn Campbell,  
Micah Sittig, Stephen Cummings

# CANCER CAUSING COMPOUNDS

- CHILDREN BORN TO WOMEN WHO HELD CLEANING JOBS WHILE PREGNANT HAVE AN ELEVATED RISK OF BIRTH DEFECTS, ACCORDING TO A 2010 STUDY BY THE NEW YORK STATE DEPARTMENT OF HEALTH.
- SOME OF THE PRODUCTS LIKELY TO CAUSE BIRTH DEFECTS INCLUDE 1,4 DIOXANE WHICH IS PRESENT IN MANY LAUNDRY DETERGENTS AND CLEANERS AS A BY PRODUCT FROM PRODUCTION

# WHAT CAN YOU DO?

- READ THE LABELS
- RESEARCH THE MOST DAMAGING CHEMICALS AND LOOK TO AVOID THESE
- CHOOSE PRODUCTS THAT DISPLAY THEIR INGREDIENTS LISTING
- SEARCH THE E.W.G DATA BASE FOR BACKGROUND ABOUT THE PRODUCTS YOU USE
- SIMPLIFY THE NUMBER AND TYPE OF PRODUCT YOU USE
- MAKE YOUR OWN PRODUCTS!!



[Product Updates](#) [Find out more](#)

## SAFETY RATINGS FOR MORE THAN 2,500 PRODUCTS



**1**   
**2**   
**3**  **TOP PRODUCTS**

Find greener cleaners for household needs [>](#)

 **LABEL DECODER**

Translate technical terms and ad hype [>](#)

 **ABOUT THIS REPORT**

EWG looked beyond labels to rate products [>](#)

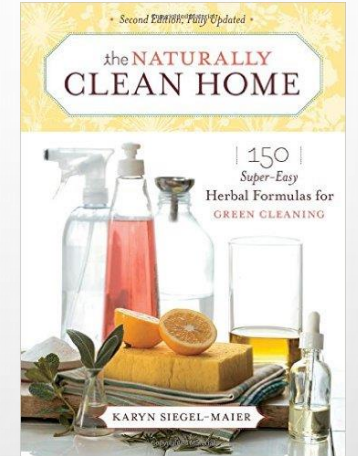
**IT'S EWG'S GUIDE TO HEALTHY CLEANING BUT FOR FOOD!**

 EWG's Guide to Healthy Cleaning **Update Center**

 **Product Updates**

# RESOURCES

- [HTTP://EARTHEASY.COM/LIVE NONTOXIC SOLUTIONS.HTM#HEALTHYHOME](http://eartheasy.com/live_nontoxic_solutions.htm#healthyhome)
- [HTTPS://ECOCYCLE.ORG/HAZWASTE/ECOFRIENDLY-CLEANING](https://ecocycle.org/HAZWASTE/ECOFRIENDLY-CLEANING)
- [HTTPS://WWW.CARE.COM/C/STORIES/5925/GREEN-CLEANING-12-NATURAL-SOLUTIONS-THAT-REA/](https://www.care.com/c/stories/5925/green-cleaning-12-natural-solutions-that-rea/)
- [HTTP://WWW.HEALTHYCLEANING101.ORG/TYPES-OF-HOUSEHOLD-CLEANING-PRODUCTS/#DIS](http://www.healthycleaning101.org/types-of-household-cleaning-products/#dis)



- [HTTP://WWW.EWG.ORG/GUIDES/CLEANERS](http://www.ewg.org/guides/cleaners)