“Cleaner Cleaning”

SWAPPING HARSH CHEMICALS IN HOUSEHOLD CLEANING PRODUCTS FOR NON-TOXIC ALTERNATIVES

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Introduction

Mass-produced, ready-made cleaning products have become a very common item found in American homes. These cleaning products are relatively inexpensive, readily accessible, and easy to use. They do not require much thought from the user and are, seemingly, continuously reliable without consequence.

Unknown to many consumers, some of the most popular brands of cleaning products do pose a health threat to users due to their chemical makeup.

A peer-reviewed study by the Environmental Working Group found that our everyday cleaning products may release hundreds of VOCs (volatile organic compounds) with many of them being hazardous (2023.) The release of VOCs increases the users risk of respiratory damage, cancer, and developmental and reproductive harms.

In addition to the harmful chemicals found in many popular cleaning products, these products may also pose a threat to children and individuals who may not understand the risks of ingesting or handling the products extensively. Therefore, a significant health risk is present when these products are not stored properly.

Finally, many popular household cleaning products are extremely harmful when mixed together. Unfortunately, users may not know this and mix products thinking that it will increase the effectiveness of the products. There are numerous dangerous mixes, but just to name a few -

- **Bleach and Vinegar = Chlorine Gas**
- **Bleach + Ammonia = Chloramine**
- **Bleach + Rubbing Alcohol = Chloroform**

Fortunately, there are non-toxic cleaning alternatives that are much more suitable to be used for everyday clean ups. These non-toxic cleaning products are inexpensive, reliable, effective, and work great for daily in-house use.

Hazardous Ingredients

Learning how to create your own daily cleaners is a great way to implement health-conscious thinking within your home. But, there may be times when you cannot commit to making your own cleaners. Good news! There are still many great brands out there that offer cleaning minus the bad ingredients. Identifying non-toxic cleaning products is easy, as long as you know what ingredients to avoid. Here are some common hazardous ingredients found in cleaning supplies to look out for when searching the aisles for a healthy alternative.

Acetone: A neurotoxin, acetone may cause liver and kidney damage, and damage to developing fetuses. It is a skin and eye irritant. Acetone is found in spot treatment cleaners, mark and scuff removers, and other products.

Aerosol products: Aerosol propellants may contain propane, formaldehyde (a carcinogen, neurotoxin and central nervous system depressant), methylene chloride (a carcinogen, neurotoxin, and reproductive toxin), and nitrous oxide. Products applied with aerosol sprays are broken into minute particles, which are smaller and can be more deeply inhaled than larger particles, thus increasing their toxic effect.

Ammonia: Undiluted, ammonia is a severe eye and respiratory irritant that can cause severe burning pain and corrosive damage, including chemical burns, cataracts, and corneal damage. It can also lead to kidney and liver damage. Repeated or prolonged exposure to vapors can result in bronchitis and pneumonia. Ammonia is found in a wide range of cleaning products. When it reacts with bleach, it can form poisonous chlorine gas that can cause burning and watering of eyes as well as burning of the nose and mouth.

Diethanolamine (DEA): Listed as a suspected carcinogen by the State of California, this chemical is a skin and respiratory toxicant, and a severe eye irritant. DEA is used in a wide range of household cleaning products.

D-limonene: This chemical is produced by cold-pressing orange peels. The extracted oil is 90% d-limonene. D-limonene is a sensitizer, neurotoxin, and moderate eye and skin irritant. D-limonene has the potential to trigger respiratory distress when vapors are inhaled by some sensitive individuals. There is some evidence of carcinogenicity. D-limonene is the active ingredient in some insecticides. It is used as a solvent in many all-purpose cleaning products, especially 'citrus' and 'orange' cleaners. Also listed on labels as citrus oil and orange oil.

Ethoxylated nonyl phenol: Nonyl phenols are hormone disruptors, with some containing traces of ethylene oxide, a known human carcinogen. Nonyl Phenols are eye and skin irritants. They are used in laundry detergents and other cleaning products.

Formaldehyde: In lab tests, formaldehyde has caused cancer and damaged DNA. Formaldehyde is also a sensitizer with potential to cause asthma. Several laboratory studies have shown it to be a central nervous system depressant. Exposure to formaldehyde may cause joint pain, depression, headaches, chest pains, ear infections, chronic fatigue, and dizziness. While formaldehyde naturally occurs in the human body in minute amounts, it is estimated that 20% of people exposed to it will experience an allergic reaction. Formaldehyde is used in a wide range of products, including some furniture polishes. Formaldehyde may be released by other chemicals.

Fragrance: Fragrance on a label can indicate the presence of up to 4,000 separate ingredients, most of which are synthetic. Many compounds in fragrance are human toxins and suspected or proven carcinogens. In 1989, the US National Institute of Occupational Safety and Health evaluated 2,983 fragrance chemicals for health effects. They identified 884 of them as toxic substances. Synthetic fragrances are known to trigger asthma attacks. The US Environmental Protection Agency found that 100% of perfumes contain toluene, which can cause liver, kidney, and brain damage as well as damage to a developing fetus. Symptoms reported to the FDA from fragrance exposure have included headaches, dizziness, rashes, skin discoloration, violent coughing, vomiting, and skin irritation. Clinical observations by medical doctors have shown that exposure to fragrances can affect the central nervous system, causing depression, hyperactivity, irritability, an inability to cope, and other behavioral changes.

Methylene chloride: Methylene chloride is a carcinogen, neurotoxin, and reproductive toxin. On inhalation, it can cause liver and brain damage, irregular heartbeat, and even heart attack. It is a severe skin and moderate eye irritant. Used in stain removers.

Monoethanolamine: This chemical may cause liver, kidney, and reproductive damage as well as depression of the central nervous system. Inhalation of high concentrations, when cleaning an oven for example, can cause dizziness or even coma. The chemical can also be absorbed through the skin. It is a moderate skin irritant, and a severe eye irritant. Found in many cleaning products, including oven cleaners, tub and tile cleaners, laundry pre-soaks, floor strippers, and carpet cleaners.

Morpholine: This corrosive ingredient can severely irritate and burn skin and eyes, and can even cause blindness if splashed in eyes. Morpholine can cause liver and kidney damage, and long-term exposure can result in bronchitis. It reacts with nitrites (added as a preservative in some products, or present as a contaminant) to form carcinogenic nitrosamines. Morpholine is a moderate to severe eye, skin, and mucous membrane irritant. Used as a solvent in a number of cleaning products, including some furniture polishes and abrasive cleansers.

Naphthalene: This registered pesticide is listed as a suspected carcinogen in California and is most commonly found in mothballs, and some other pest repellants as well as in deodorizers. As a reproductive toxin, it is transported across the placenta and can cause blood damage. It can cause liver and kidney damage, corneal damage, and cataracts. Skin exposure is especially dangerous to newborns.

Parabens: Parabens are hormone disruptors. Widely used in cleaning products as preservatives, paraben is usually preceded by the prefixes methyl-, ethyl-, butyl-, or propyl. Parabens may cause contact dermatitis

Paradichlorobenzene: This highly volatile registered pesticide is in the same chemical class as DDT. It is a suspected carcinogen, and may cause lung, liver, and kidney damage. It is used in mothballs, some washroom deodorizers, and urinal blocks.

Phosphoric acid: Extremely corrosive, it can severely irritate and burn the skin and eyes. Breathing vapors can make the lungs ache, and it may be toxic to the central nervous system. Phosphoric Acid is found in some liquid dishwasher detergents, metal polishes, some disinfectants, and bathroom cleaners, especially those that remove lime and mildew.

Sodium dichloroisocyanurate dihydrate: This corrosive chemical is a severe eye, skin, and respiratory irritant. It may cause liver and gastrointestinal damage, and may be toxic to the central nervous system. It will react with bleach to form poisonous chlorine gas that can cause burning and watering of eyes as well as, burning of the nose and mouth. It is found in some toilet bowl cleaners and deodorizers, as well as, industrial detergents and some institutional dishwashing detergents.

Sodium hypochlorite (bleach): A corrosive chemical, sodium hypochlorite is an eye, skin, and respiratory irritant as well as a sensitizer. It is especially hazardous to people with heart conditions or asthma, and can be fatal if swallowed. It may be a neurotoxin and toxic to the liver. Found in a wide range of household cleaners.

Sodium Lauryl Sulfate: Sodium lauryl sulfate (SLS) is used as a lathering agent. This chemical is a known skin irritant. It also enhances the allergic response to other toxins and allergens. The U.S. government has warned manufacturers of unacceptable levels of dioxin formation in some products containing this ingredient. SLS can react with other ingredients to form cancer-causing nitrosamines.

Toluene: Exposure to toluene may cause liver, kidney, and brain damage. It is also a reproductive toxin which can damage a developing fetus.

Turpentine: This chemical can cause allergic sensitization and kidney, bladder, and central nervous system damage. It is an eye irritant. Found in specialty solvent cleaners, furniture polish, and shoe products.

Cleaners and the Alternatives

If you do feel ready to create your own non-toxic cleaning products, follow along for some recipes! (There will also be mention of some less toxic alternatives to spot in the store if applicable to the product)

*Homemade products are best used within 1-3 months after assembly
*store in a cool, dark place with minimal sunlight
*DO NOT ingest recipes. Avoid contact with eyes.

All Purpose Cleaner

Cleaners may contain ammonia, a strong irritant which can also cause kidney and liver damage, butyl cellusolve, a neurotoxin that can rapidly penetrate skin, and ortho phenylphenol, a severe eye and skin irritant. Many all-purpose cleaners contain DEA and TEA, which can react with nitrites (added as undisclosed preservatives or present as contaminants) to form carcinogenic nitrosamines which readily penetrate the skin. Many colored products are made with carcinogenic coal tar colors. Hormone disrupting parabens may be used as preservatives. Many cleaners also include fragrances and detergents. Alternative brands may contain d-limonene, a sensitizer which can also cause respiratory distress as well as liver, kidney, and nervous system damage. D-limonene is a hazardous substance, although it is derived from a natural source.

Less-Toxic Alternatives

Microfiber cloths - These untreated, reusable cloths are made of polyester and polyamide that are spun into tiny wedge shaped strands, 100 times finer than a human hair. They can lift off dirt, grease, and dust without the need for cleaning chemicals, because they are formulated to penetrate and trap dirt. There are a number of different brands. A good quality cloth can last for several years.

Homemade Alternatives

Ingredients:

4 tablespoons baking soda

1 quart warm water

Directions: Pour solution on a clean sponge and wipe

Bleach

The main ingredient in chlorine bleach is sodium hypochlorite (chlorine added to lye). Chlorine is toxic as a skin irritant, and by inhalation. Sodium hypochlorite can create poisonous chlorine gas if mixed with ammonia (which may be an unlabeled ingredient in some cleaning products) or vinegar. Workplace safety data sheets warn that sodium hypochlorite may be a neurotoxin and can cause liver damage. People with chemical sensitivities report adverse reactions to minute quantities of chlorine. Sodium hypochlorite readily combines with organic matter to form organochlorines which are highly toxic to aquatic life.

Less-Toxic Alternatives

- **Hydrogen peroxide** - drug store dilution. Use 1/2 cup per wash load
- **Oxiclean** - oxygen bleach
- **Simply Clean** - Oxygen bleach
- **Sunshine** will whiten cotton and linen

Homemade Alternatives

Ingredients:
3/4 cup 3% hydrogen peroxide
1/4 cup lemon juice
1 Tbsp. citric acid (optional– whitens clothes natural and helps to soften water, making this more effective in hard water)
distilled water to fill
10-15 drops lemon essential oil
amber 1/2 gallon glass jug
Directions:
Pour hydrogen peroxide, lemon juice, citric acid (if using), and lemon essential oil into an amber glass bottle. Swish around until citric acid is dissolved.
Fill the rest of the jug with distilled water and use as you would bleach.

Dishwashing Soap

Most dishwashing liquids contain detergents, coal tar based colors, and artificial fragrance. They may contain Quaternium-15, an eye and skin irritant which can release carcinogenic formaldehyde. If the label says "Do not use with chlorine bleach," then the product probably contains ammonia. Many dyes are known to be carcinogenic, meaning that they can penetrate the skin and be deposited on dishes. Conventional detergents are petroleum-based.

Less-Toxic Alternatives

- **Dr.Bronners Castile Liquid Soap** can be used in the homemade alternative
- **EcoLeaf**
- **Common Good**
- **Mrs.Meyers**

Homemade Alternatives

Ingredients:

1/2 cup Castile Liquid Soap
1/2 cup water (distilled or boiled)
1 Tbsp vitamin E oil
1 Tbsp nourishing oil (sweet almond or jojoba oil)
5-10 drops essential oils

Directions:

1. In a mason jar or soap dispenser, add water first (to prevent bubbles) then add the liquid castile soap, followed by the oils. Shake ingredients together.
2. Shake the soap dispenser before using, then squirt a small amount on your hands as needed, rinsing with water.

Dishwasher Detergents

Many dishwasher detergents contain dry chlorine which is activated when dissolved in water. Chlorine fumes in the steam that leaks from dishwashers may cause eye irritation and difficulty breathing. Dishwasher detergents may also contain quarternium-15, an eye and skin irritant, and allergen that can release carcinogenic formaldehyde. Dyes and artificial fragrances are common ingredients.

Less-Toxic Alternatives

- Ever Spring
- Method Free + Clear
- Clean People
- Love, Home, and Planet

Homemade Alternatives

Ingredients:

1 1/2 cups citric acid

1 1/2 cups washing soda

1/2 cup baking soda

1/2 cup sea salt

Directions:

Mix to combine. Use 1 Tbsp. per load.

Disinfectant

It's doubtful whether disinfectants are needed at all for most household uses. Ordinary cleanliness is sufficient to eliminate hazardous bacteria. Soap, water and rubbing (the old "wash your hands" requirement) is the best method to prevent disease. The fad for disinfectants and anti-bacterials is based on a false fear of germs. Homes do not require the same type of cleaning as hospitals, where disease and infection is more common.

Besides being a waste of money, some brands of disinfectants use highly caustic chemicals like sodium hydroxide, sodium hypochlorite, and phosphoric acid that can burn eyes and skin. Breathing vapors can burn lungs. Disinfectants may also contain phenols which can damage DNA as well as the liver, kidney, and nervous systems, cresol, a suspected carcinogen and respiratory toxin, formaldehyde, a carcinogen, sensitizer, and suspected central nervous system depressant, chlorine, a lung irritant, and alcohol. The best time to use an anti-bacterial is if there was/is sickness in your house, or to clean areas that may see a high level of bad bacteria. Besides that, less-toxic or hand-made alternatives are enough to keep your home clean.

Less-Toxic Alternatives

- **Alcohol**
- **Hydrogen peroxide** - drugstore dilution. Use undiluted
- **Clean Well**

Homemade Alternatives

Ingredients:

2 cups water

20 drops of tea tree oil

2 Tbsp. white vinegar

1 tsp. liquid dish soap

Directions:

Mix all ingredients together in a spray bottle. Shake well.

Drain Cleaner

Drain cleaners usually contain sodium hydroxide and sodium hypochlorite, both of which can cause permanent damage to skin and eyes on contact, and their vapors can burn individual's lungs. These chemicals are often mixed with ammonia or volatile petroleum distillates. Drain cleaners may also contain dimethylbenzyl ammonium chloride, a severe eye and skin irritant, and dichlorodifluromethane, an eye irritant and neurotoxin. Drain cleaners may be fatal if ingested.

Less-Toxic Alternatives

- **Citra-Drain** - contains d-limonene
- **Earth Enzymes Drain Opener** - available at health food stores
- **Flexible Metal Snake** - May be more effective than chemical drain openers. May be purchased or rented
- **Plunger** - Use this as an alternative to drain cleaner. Do not use the two products together

Homemade Alternatives

Ingredients:

1/2 cup baking soda

1/2 cup white vinegar

Boiling water

Directions:

Pour baking soda down drain. Add white vinegar and cover drain, if possible. Let sit for 5 minutes, then pour a kettle of boiling water down drain. (The vinegar and baking soda break down fatty acids, allowing the clog to wash down the drain.) This method can be used weekly to help prevent drain clogs. Do not use this method if you have used a commercial drain opener, because it may still be present in the drain.

Fabric Softener

Fabric softeners are designed to reduce static in synthetic fabrics. They serve no purpose with natural fabrics. Fabric softeners may contain quaternary ammonium compounds (quats) and imidazolidinyl, both of which are known formaldehyde releasers. For about 5% of people, quats are an extreme sensitizer. They may cause a variety of asthma-like symptoms, including respiratory arrest. Exposure to formaldehyde can cause joint pain, depression, headaches, chronic fatigue, and a variety of other symptoms. In lab tests, formaldehyde has caused cancer and damaged DNA. Both quaternium and imidazolidinyl can cause contact dermatitis. Fabric softeners work by leaving a residue on the fabric which never completely washes out, causing allergic reactions through skin contact and inhalation. Fabric softeners may also contain carcinogenic coal-tar dyes, ammonia, and very strong scents. When fabric softeners are exposed to hot water or heat from dryers and ironing, vapors may be emitted which can be deeply inhaled, increasing their impact.

Less-Toxic Alternatives

Because conventional fabric softeners contain so many harmful chemicals, even if they are free of added scents, they are not a good choice for less-toxic living.

Homemade Alternatives

Directions:
Add 1/2 cup of white vinegar or baking soda to the rinse cycle to soften water and reduce static cling.

Laundry discs or balls (reusable) soften water and help reduce static cling. A few drops of essential oils can be added to enhance smell

A ball of aluminum foil in the dryer can reduce static cling without adding chemicals.

You may be able to dramatically reduce your use of fabric softener and still get the desired effect.

Floor Cleaner, Wax, Polish

Conventional products often contain mineral spirits and petroleum solvents, both of which are neurotoxic and can cause severe eye and skin irritation as well as Stoddard solvent which is also neurotoxic. Petroleum solvents may contain traces of carcinogenic benzene. Some wax removers with ammonia contain tripropylene glycol monomethyl ether which can cause narcosis and kidney injuries with repeated and prolonged skin exposure.

Less-Toxic Alternatives

- **Microfiber mop -** use with plain water (Expensive but a real revolution in mop technology. Rinses cleaner than other mop heads and saves money by eliminating cleaning products. Safe for hardwood floors.)
- **Nature Clean -** Natural Floor Cleaner
- **TSP (trisodium phosphate)** can be used to eliminate built up dirt and grime. Use with care, it can dull or remove finishes on wood.

Homemade Alternatives

Floor Cleaner
Add 1 cup of vinegar to a pail of water.
Stronger Floor Cleaner
1/4 cup washing soda
1 tablespoon liquid castile soap
1/4 cup vinegar
8 liters hot water
Mix well to dissolve washing soda
Wood Floor Cleaner
1/4 cup liquid castile soap
1/2 to 1 cup vinegar
8 liters warm water
Wood Floor Polish I
1/8 cup olive oil or other vegetable oil
1 tablespoon vinegar
1 tablespoon vodka
Wood Floor Oil Polish II
Rub with olive oil.
Wood Floor Wax
1 cup olive, almond or walnut oil
1/2 cup vodka
30 - 40 grams grated beeswax
40 - 55 grams carnauba wax (depends on hardness desired).
Put oil and the waxes into a wide-mouth glass jar or tin can and set in pot of simmering water. Stir gently until waxes are dissolved. Remove from heat and add vodka, mixing well. Allow to harden. Use a rag to rub into the wood. If the rag "drags" too much, dip it into a tiny bit of oil.

Floor and Furniture Polish

Floor and furniture polishes can contain nitrobenzene, a carcinogen, reproductive toxin, and central nervous system toxicant which can be absorbed through the skin, phenol, a carcinogen and severe skin irritant as well as propane, butane gas, aliphatic naphtha, petroleum distillates, white mineral oil, and turpentine which are all neurotoxins, and may also be eye or skin irritants. Polishes may contain morpholine, a severe irritant which may cause kidney damage, as well as ammonia, detergents, and synthetic fragrance. Aerosol products create microscopic particles that can be inhaled deeply into lungs and transferred to the bloodstream. Some products contain carcinogenic formaldehyde and nitrosamines.

Homemade Alternatives

Floor Polish

Polish with plain olive oil, almond or walnut oil.
Polish with food grade mineral oil. Although it is petroleum based it is non-volatile and relatively safe. Available in drug stores.

Furniture Polish

1 cup olive oil, almond or walnut oil
1/2 cup vinegar or lemon juice
Shake well and apply a small amount to a soft rag. Spread evenly over furniture surface. Polish with a dry cloth

Laundry Detergent

Most detergents are derived from petrochemical ingredients. They may contain bleaches, synthetic whiteners, and chemical fragrances, even in some so-called "fragrance free" brands. Some detergents may contain ammonia, ethanol, naphthalene, and phenol. Many liquid brands contain ethoxylated alcohols which can be contaminated with carcinogenic 1,4-dioxane. Detergent residues on clothes and bed linens can be a source of skin irritation, and lingering scents from scented products can cause respiratory and adverse reactions. Petroleum-based detergents cause more household poisonings than any other household product. Laundry soaps, available as bar soaps or flakes, are usually made from natural minerals and fats and tend to be less toxic than conventional detergents.

Less-Toxic Alternatives

- Branch Basics
- Clean people
- Zum Laundry Soap
- Mrs.Meyers
- Love, Home, and Planet

Homemade Alternatives

Laundry Whitener

Add up to 1/2 cup of Arm & Hammer Washing Soda to washer.

Laundry Detergent

6 cups washing soda (Arm & Hammer Washing Soda)

3 bars of 4.5-5 ounce soap, finely grated (One made with coconut oil is the best)

Optional– lemon essential oil

Directions:

1. Cut soap into small chunks. Add to blender or food processer along with washing soda.
2. Blend until a fine powder.
3. Pour into clean container (keep the essential oil next to container and add 5 drops with each load).

To use:

Add 2-3 Tbsp per load

If washing whites, add 1/2 cup of hydrogen peroxide in the bleach compartment.

Add 1/2 cup vinegar to the fabric softener compartment.

Mold and Mildew Cleaners

Mold and mildew cleaners can contain formaldehyde, a carcinogen and sensitizer, phenol, kerosene, pentachlorophenol, chlorine, and fungicides. The Environmental Protection Agency has classified more than 300 different active ingredients found in antimicrobial products including mold and mildew cleaners as pesticides. Although labels often warn that these cleaners can be hazardous as eye irritants, they are often sold as aerosol sprays, creating fine mists containing minute particles which can pass through mucous membranes more easily and can be more deeply inhaled.

Less-Toxic Alternatives

- **Hydrogen peroxide - drug store dilution. Apply full strength.**
- **Ultra-violet light (blue bulb) will kill mold.**
- **Vinegar Spray- straight vinegar reportedly kills 82% of mold. Pour some white distilled vinegar straight into a spray bottle, spray on the moldy area, and let set without rinsing. Smell will dissipate in a few hours.**
- **Wash with very strong black tea and let dry.**

Homemade Alternatives

Ingredients:

2 teaspoon tea tree oil

2 cups water

Directions:

Combine in a spray bottle, shake to blend, and spray on problem areas. Do not rinse.

Makes two cups.

Oven Cleaner

Conventional oven cleaners create toxic fumes that can burn eyes, skin, and internal organs. Lye and ammonia are often the cleaning agents and they are especially dangerous in aerosols.

Homemade Alternatives

Option I:

Ingredients:

1 cup or more baking soda

A squirt or two of liquid soap

Directions:

Sprinkle water generously over the bottom of the oven, then cover the grime with enough baking soda that the surface is totally white. Sprinkle some more water over the top, let sit overnight. Wipe up the next morning. When the worst of the mess is removed, dab a bit of liquid detergent or soap on a sponge and wash the remaining residue from the oven.

(If this recipe doesn't work for you it is probably because you didn't use enough baking soda and/or water.)

Make a paste of baking soda and water and spread on oven interior. Leave overnight with oven door closed. Remove with sponge or nylon scrub pad. SOS pad can be used to remove stubborn bits.

Option II:

While oven is still warm, sprinkle water on the spill, then sprinkle salt on it. When the oven cools down, scrape the spill away and wash the area.

Toilet Bowl Cleaner

Many toilet bowl cleaners are often highly caustic and form toxic gases when mixed with water. They can contain ammonium chloride, a corrosive, 1,4-dichlorobenzine, a carcinogenic pesticide which can cause liver and kidney damage, hydrochloric acid, whose vapors can cause coughing and breathing difficulties, and sodium dichloroisocyanurate dihydrate which is a severe eye, skin, and respiratory irritant, which can form carcinogenic chlorine gas. Sulfate-based products containing sodium sulfate or sodium bisulfate may cause asthmatic attacks.

Less-Toxic Alternatives

- **Hydrogen peroxide - drug store dilution**

Homemade Alternatives

To remove mineral buildup, put 1-2 denture cleaner tablets in bowl and let sit overnight, then clean .

Pour one can of Coke in toilet.

Use undiluted white vinegar to scrub the inside of the toilet bowl. First dump a bucket of water into the toilet to force water out of the bowl and allow access to the sides. Pour undiluted white vinegar around the bowl and scrub with a toilet brush to remove lime, stains and odor.

Additional Recipes

Fragrant Kitchen Cleaner

Ingredients:

2 TBSP. White vinegar

2 pints water

4 drops essential oils

Direction:

Combine all ingredients in a spray bottle and use as a final rinse after cleaning surfaces. Store in a cool, dark place.

Refrigerator Cleaner

Ingredients:

2 TBSP. baking soda

1 quart warm water

Directions:

Dissolve baking soda in water. Use to wipe all surfaces inside and out. For stubborn spots, rub with baking soda paste. Be sure to rinse with a clean, wet cloth.

Garbage Can Deodorizer

Ingredients:

1 cup baking soda

1 tsp. tea tree oil

Directions:

Mix together in a small bowl, working out all the lumps with a fork. Sprinkle the mixture in the bottom of the trash can after the liner is removed. Periodically rinse container with white vinegar and dry in the sun

Garbage Disposal Cleaner

Ingredients:

1 cup ice

Used lemon or orange rind

Directions:

To eliminate garbage disposal odors and clean and sharpen blades, grind ice and rinds until pulverized.

Copper and Brass Cleaner

Ingredients:

Lemon juice

Salt, non-iodized

Cornstarch

Directions:

Mix equal parts of salt and cornstarch with lemon juice to make a paste. Apply to surface with soft rag. Rub gently. Rinse with warm water and mild dish soap. Dry with a soft cloth.

Tub and Tile Cleaner

Ingredients:

White vinegar

Baking soda or non-iodized salt

Directions:

To remove film buildup on bathtubs, apply vinegar full-strength to a sponge and wipe. Next, use baking soda or salt as you would a scouring powder. Rub with a damp sponge and rinse thoroughly with clean water.

Plumbing Fixture Cleaner #1

Use to clean stainless steel, chrome, fiberglass, ceramic porcelain or enamel fixtures

Ingredients:
2 TBSP. baking soda
1 quart water

Directions:
Dissolve the baking soda in the water. Wipe on the fixture then rinse.

Plumbing Fixture #2

Hard lime deposits around faucets can be softened for easy removal by covering the deposits with vinegar-soaked paper towels.

Ingredients:
white vinegar
Paper towels

Direction:
Soak paper towels in vinegar and leave them on the surface. Wipe clean after about an hour.

No Streak Glass Cleaner

Ingredients:

1/4 cup white vinegar

1 TBSP. cornstarch

2 quarts warm water

Directions:

Mix the ingredients and apply with a sponge or pour into spray bottle and spray on. For lint-free results, wipe dry with crumpled newspaper, buff to a shine.

Mirror and Window Polish

Ingredients:

Cornstarch

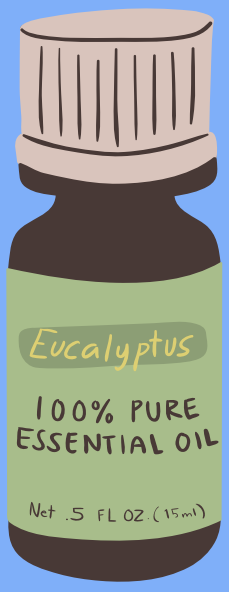
Water

Directions:

Mix together cornstarch and water to make a paste. Use a soft cloth to apply the paste to the mirror. Rub gently then wipe clean with a soft cloth.

Less-Toxic Ingredients

One of the most important things to do while transitioning to a less-toxic lifestyle is to understand all of the bad AND **good ingredients**. And, to ask important questions like - why do some ingredients lead to less-toxic products?



Essential Oils

When utilized properly, essential oils are great additions to non-toxic homemade cleaning products. In general, essential oils have many functions. Some of these include; acting as scent boosters, aromatherapy, deterrence to pests, etc. Some essential oils even have their own cleaning abilities. For example, tea tree oil is a known microbial, antibacterial, antifungal, and antiviral. But, if you are going to use essential oils in your cleaning supplies, you need to understand what to look for when buying essential oils, and the basic guidelines on how to use them safely.

When shopping for essential oils, you want to buy a set that is 100% pure and organic. Make sure you are not buying essential oils with additional ingredients, because these ingredients decrease the potency of the essential oils, and may cause sensitive individuals to experience adverse reactions. The best way to know whether or not the essential oils are 100% pure and organic is to look at the labeling. Companies will tell you whether or not the essential oils are 100% pure or not.

Once purchased, essential oils need to be handled with care. Essential oils are very potent, so it is important to ALWAYS dilute the essential oils. If not diluted and handled poorly, essential oils can cause allergic reactions. Additionally, essential oils are not for consumption, so please be vigilant around children and uninformed individuals. Also, if you are pregnant, breast feeding, or have a chronic illness, please talk to your doctor before using essential oils.

Finally, please be aware that some essential oils can be toxic to pets. If you have pets in your house, please be sure to research the essential oil before using it. Some essential oils that are thought to be safe for dogs include: lavender, chamomile, cedarwood, ginger, rosemary, and lemongrass. Some essential oils thought to be safe for cats include: chamomile, jasmine, lavender, rose, and frankincense.

Baking Soda and Vinegar

Baking soda is an extremely effective tool for cleaning, because of its chemical properties. Not only is it a great leavening tool in the kitchen, but it also acts as an effective base for DIY cleaning products. When you see baking soda listed in the DIY cleaning section above, you may often see it listed alongside ingredients on the opposite side of the pH scale, like vinegar. As a base, baking soda is able to break down and dissolve organic compounds such as dirt and grease.

Vinegar, unlike baking soda, is extremely acidic. That means that, not only is it on the opposite side of the pH scale, but it also serves a different function. Vinegar can be used to break down and remove minerals that form from sources like hard tap water, making it a great tool to clean your bathrooms with.

When used alongside each other, vinegar and baking soda create a powerful and effective cleaning combo. One thing to keep in mind when using these two together, is to never mix them into equal parts. If mixed into equal parts, the mixture will neutralize itself, so it is recommended to mix them into a blend that reflects 1:2 or 1:3 parts.

Castile Soap

Castile soap is an extremely effective cleaning tool that is not only better for the environment in which you live, but also, better for your skin due to its gentle nature. Castile soap originated in the Mediterranean region and is made from vegetable oils. Because it contains no animal fats, it is vegan friendly. Castile soap works because it contains molecules that attract water molecules on one end and repel water molecules on the other end. When combined with water, castile soap becomes a great attractant for organic matter like dirt and grease, and can remove them from surfaces.

Castile soap does not contain ingredients that synthetic soaps may contain like, parabens, phthalates, BPAs, and triclosan. Additionally, castile soap is very concentrated and a little can go a long way, making your bottle last longer than competing synthetic soaps. Castile soap can be used for many home cleaning activities such as, dishes, laundry, mopping, windows, toilets, pet cleaning, etc...

Washing Soda

Washing soda, also known by its scientific name sodium carbonate, is a strong base cleaning agent. With its alkalinity being slightly higher than baking soda, another popular base cleaning agent, it can be used to clean deeper stains, hence its popularity in the laundry room. Washing soda can be used to remove even the most stubborn stains like blood, grease, and coffee. Washing soda can also be used to wash dishes and un-clog drains.

Distilled Water

Distilled water is a water that contains no minerals because it has been boiled, evaporated, and condensed back into its liquid form. When cleaning with normal faucet water, one may run into issues with watermarks and spots due to the minerals found in tap water. That is why distilled water is recommended in many homemade cleaning recipes, because it eliminates the possibility of mineral buildup on surfaces.

3% Hydrogen Peroxide

3% Hydrogen Peroxide, a well known household cleaning agent that can be used for many different cleaning activities, gained its popularity due to its antibacterial and anti-viral properties. Hydrogen peroxide is effective in removing several microorganisms such as bacteria, fungi, yeast, and spores. Hydrogen peroxide works by acting as an oxidizing agent. When mixed with water, hydrogen peroxide is quickly disintegrated into hydrogen, and the free radicals released by this degradation act as disinfecting agents, and also inhibit further bacterial growth. Hydrogen peroxide is generally a safer alternative to bleach in home settings, because its components break down into water and oxygen, making the by-products completely biodegradable.

Hydrogen peroxide may become less effective if it comes into contact with an organic compound like dirt or crumbs, because the organic compounds make the hydrogen peroxide molecules more unstable. A good way to avoid this is to simply wipe down the surface that needs to be disinfected with some water before you use hydrogen peroxide on it. Also, 3% hydrogen peroxide is the recommended dilution amount for in-home cleaning. Any other dilution with higher concentrations poses an increased safety risk for users. When using hydrogen peroxide to clean, always wear gloves and avoid getting it in your eyes. Do not ingest hydrogen peroxide. Just like many other cleaning chemicals and products, hydrogen peroxide can cause stomach irritation and internal damage if ingested.

Finally, DO NOT mix hydrogen peroxide with vinegar. Mixing these two substances creates peracetic acid which can cause harm to the body if inhaled or absorbed through the skin. If cleaning with a product that contains vinegar, make sure that product is dried onto the surface before using the product with hydrogen peroxide in it.

Lemons + Citric Acid

Though these two ingredients are listed separately from each other in the homemade recipes section, it is important to note that citric acid is an acidic compound naturally found in lemons, and lemons are known to be powerful natural cleaners due to the citric acid found within. So, ultimately these two ingredients have the same functions, but buying citric acid alone allows for a higher concentration and a less diluted citric acid product.

Citric acid works by breaking apart organic stains. Citric Acid also provides a natural whitening effect, making it a key component to many non-toxic homemade bleaching and laundry detergent recipes. Finally, Citric acid acts as a natural bactericide and fungicide, making it an ingredient you do not want to skip in your homemade cleaning recipes.

Storage: Amber Glass Jars

Amber glass jars are the preferred storage container for homemade cleaning products. Amber glass jars are made from sand, soda ash, limestone, iron, sulfur, and carbon. These ingredients are melted at high temperatures and combined to create the jars. Amber glass jars are beneficial for the preservation and effectiveness of the cleaning products because they are inert. This means that the substances that make up the amber glass jars do not interact with product ingredients, keeping the products pure. Amber glass jars also protect products from blue light and UV rays, further preserving the purity of the product. Finally, amber glass jars are much more sustainable than plastic containers, and can be easily recycled and reused without losing the quality. Amber glass jars can be found at many local grocery stores and also ordered online.

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Additional Comments

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