Selection and Use of Home Cleaning Products

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Buying home cleaning products is confusing. Labels and ads are filled with numerous claims and complex chemical terms.

To choose the best product for the job, a consumer must know the most common ingredients of each and be able to compare their performance and safety. The common ingredients are abrasives, acids, alkalies, bleaches, detergents, sanitizers, and spirit solvents.

ABRASIVES

Abrasives wear off dirt by rubbing. They scour off hardened food particles, grease, tarnish, and strains. They are found in cleansers. Sandpaper, plastic and nylon meshes, and steel wool also are abrasives. Some metal cleaners contain a fine abrasive like silica.

Caution

Coarse abrasives feel rough and gritty. Regular use of harsh abrasives scratches shiny finishes of sinks, bathtubs, and kitchen appliances. When surfaces are dull and rough they soil faster and stain deeper. Course abrasives also damage plasticware, glass, some nonstick finishes on cookware, painted woodwork, and plated and highly polished metals. Then you must continue to use a harsh abrasive to remove imbedded dirt and stains.

Mild abrasives or liquid cleaners are available for fiberglass bath fixtures and other shiny finishes.

ACIDS

Some acids remove hard water deposits. Some remove rust stains. Others take away discoloration from aluminum, brass, bronze and copper.

Very Mild Acid

Vinegar removes hard water deposits from glassware, rust stains from sinks, and tarnish from brass and copper. It also counteracts alkaline oven cleaners.

Lemon juice has much the same use as vinegar.

Cream of tartar sweetens coffee makers and brightens aluminum.

Very Strong Acid

Oxalic acid is an affective rust remover.

Hydrochloric acid, sulfuric acid or sodium bisulphate (also known as sodium acid sulphate) are contained in some toilet bowl cleaners (table 1).

Table 1. Acids in household cleaners:

Products	Possible Acid Ingredients
Toilet bowl cleaner	Sodium bisulphate, oxalic acid, dilute hydrochloric acid, dilute sulfuric acid
Rust removers	Oxalic acid
Metal cleaners	Weak acids

Caution

Oxalic acid, hydrochloric acid, sodium bisulphate and sulfuric acid are all poisonous. They also can injure skin and eyes. They damage clothing, leather and some metals, too.

Dispose of cloths and brushes used to apply oxalic acid. Otherwise, the acid could be transferred to kitchen utensils and dishes, from which this poisonous substance could be ingested.

Damage can occur when two or more different kinds of metals are treated together with acid. For this reason, avoid soaking a metal in a container made of another metal.

ALKALIES

Alkalies remove oily dirt without rubbing and vary in strength (table 2) .

Very Mild Alkali

Baking soda mixed with water cleans glass, wall tile, and porcelain enamels. This solution also removes coffee and tea stains from china and plastic dishes.

Moderate Alkalies

Household ammonia-containing 5 to 10 percent ammonia gas in water-cleans kitchen range burners and ovens, windows and mirrors.

Sudsy ammonia has soap or detergent added. Sudsy ammonia cleans garbage pails, kitchen range burners and sinks.

Borax is a cleaner for woodwork, walls and sinks.

Strong Alkalies

Trisodium phosphate (TSP) cleans walls, woodwork and resilient floors except linoleum.

Washing soda-also called sal soda-can be used in cleaning kitchen range burners with heavy grease.

Very Strong Alkali

Lye-also know as caustic soda-is an ingredient in some drain and oven cleaners.

Table 2.Alkalies found in household cleaners.

Products	Possible Alkaline Ingredients
All-purpose cleaners such as Spic and Span, Ajax, “409”	TSP, ammonium compounds
Oven cleaners	Sodium hydroxide (lye), ammonia
Window cleaners	Ammonia or ammonium compounds
Drain cleaners	Caustic soda (lye)
Scouring powders	Alkaline salts, TSP

Caution

Most alkalies are toxic (poisonous); some are corrosive; others irritate skin and eyes. Lye can burn skin severely.

Alkalies remove oil from skin, so wear gloves. Alkalies also take oil from linoleum and oil-based paints, making them crack or peel. They can darken aluminum. Damage to surfaces can be prevented by using a mild alkaline solution and by rinsing well to remove all the cleaner.

BLEACHES

Bleaches remove stains. Chlorine bleaches are also disinfectants.

If a product contains bleach the label may say “contains bleach,” “bleaches as it cleans” or “chlorinated.” Sodium hypocholorite may be among the list of label ingredients.

Caution

Never use bleach with a toilet bowl cleaner or rust remover because a harmful gas is produced. Under some conditions using bleach and ammonia together forms dangerous chemical compounds which could ignite.

Chlorine bleach can dull shiny finishes on sinks, bathtubs and other porcelain enamel sur-

faces. This bleach is an alkali and will darken aluminum and make linoleum brittle.

DETERGENTS

Some laundry detergents may be used for house cleaning jobs. Detergents also are one of the ingredients in many home cleaning products. Usually, a detergent is present if suds appear.

Detergents help loosen dirt. If a builder of complex soluble phosphate has been added it removes oily dirt better. When a builder is present the product is marked “heavy duty” or “all-purpose.”

SANITIZERS

Sanitizers (table 3) kill bacteria, which cause skin, respiratory, intestinal and kidney infections. By killing bacteria, they also destroy odors.

Sanitizers are used when cleaning tubs, showers, toilet bowls, bathroom sinks, and ceramic or plastic bathroom tile. They also are used in laundering and hand dishwashing.

Table 3. Some common sanitizers by trade names.

Sanitizers	Trade Names
Liquid chlorine bleach	Clorox, Purex, Texize Bleach
Quaternary	Lephrin, Roccal
Pine oil disinfectants	Fyne Pine, Texize-O-Pine
Phenolic disinfectants	Pine-Sol, Lysol Brand Disinfectant, Al Pine

Caution

Never use chlorine bleach with a toilet bowl cleaner or rust remover because a harmful gas is produced. It’s possible that harmful chemical compounds will be produced by combining chlorine bleach and ammonia.

Check the product label for limitations on the use of a sanitizer.

SPIRIT SOLVENTS

Spirit solvents remove oily dirt.

Many waxes and polishes for furniture and floors and floor wax removers contain spirit solvent. They also are found in some all-purpose cleaners, sanitizers and drain cleaners.

Examples of spirit solvents are paint thinners, turpentine and kerosene.

Caution

Most spirit solvents are flammable and must be kept away from heat, sparks and open flame. By law, the label must indicate that the product is flammable. Extremely flammable products also may say “harmful or fatal if swallowed ... if swallowed, do not induce vomiting. Call a physician immediately.”

If solvent is spilled on clothing, don’t wear it near a heat source; since clothing also is flammable, serious burns may result. Be careful when disposing of empty solvent containers. Even a small amount of solvent left in the container can cause an explosion and ignite, if left in a warm place or sunlight.

Carbon tetrachloride, once used for spot removal, is a spirit solvent considered too dangerous for home use. Swallowing carbon tetrachloride or inhaling its fumes can be fatal. Carbon tetrachloride also can injure the liver, kidneys, brain, and nervous system.

A spirit solvent wax for floors cannot be used safely on asphalt or rubber tile, because they are softened by solvent.

Not all floor waxes are spirit solvents. Some are water-emulsion waxes, which damage wood and cork. These waxes may be recognized by the statement: “Keep from freezing.”

SAFE HANDLING OF CLEANING PRODUCTS

Most cleaning products used in homes today are dangerous only when misused. The most frequent misuse is accidental swallowing by curious children. Never transfer cleaners into soft drink bottles or other containers that may seem harmless to children.

Regulations require that all hazardous substances be labeled with the statement, "Keep Out of the Reach of Children." Under the kitchen sink is the worst place to store household cleaners.

Keep products, such as strong acids and alkalies, away from skin and eyes. Wear protective clothing, such as gloves and an apron. Wash off immediately any products that you splash or spill on your skin.

Products containing flammable liquids should never be used near an open flame, such as a pilot light on a kitchen range or gas clothes dryer, lighted cigarettes or furnaces.

Do not leave an aerosol (pressurized) container on a kitchen range, radiator, furnace, in direct sunlight, or near other heat sources. Never puncture an aerosol container. Before discarding this type of container, hold the valve open until all the contents and gas have escaped.

Never discard an empty aerosol container into a fire or incinerator, because some gas usually remains even in an apparently empty can. Heat causes the gas to expand and may lead to an explosion.

If an accident occurs in the use of a hazardous substance, refer to the label on the product for the correct first aid procedures. Follow the directions carefully. If it is necessary to take a child or adult to the hospital or a physician's office because of an accident, be sure you take with you the container of the product that caused the injury. The information on the label will assist the physician in giving prompt and proper treatment.

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THIS TELEPHONE NUMBER
CAN SAVE YOUR LIFE

Toll-free nationwide	1-800-222-1222
Toll free, New Mexico	1-800-432-6866
Albuquerque	505-843-2551

New Mexico Poison Control And
Drug Information Center

Call this number free anytime day or night from any where in New Mexico for help or information about poisons or drugs.

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GREEN CLEANING PRODUCTS

Cleaning is the process of removing soil, stains, or undesirable microorganisms from surfaces and restoring that surface to its original condition as possible. Cleaning plays an essential role in our daily lives by providing important public health benefits to consumers by keeping our surroundings clean, protected and free of germs.

Environmental groups, state legislators, the EPA, and the cleaning products industry are all working together to improve the products that you use every day. While "green cleaning" has only been fashionable for the last decade or so, researchers have been steadily working on developing environmentally sound cleaning products for more than 50 years.

The cleaning products industry has known and understood the importance of biodegradable cleaning products since the 1950s. In the 1970s, the industry removed all CFCs from aerosols. In the 1990s, products became more concentrated ("ultras") which reduced packaging. (Think of your laundry detergent and dishwashing soap – wash more loads with less detergent) Cleaning products have been getting "greener" through innovation and continuous improvement – long before the "green" movement was even around!

"Green" products are lining store shelves, and the Internet is abuzz with tips for green living and step-by-step instructions for making your own "earth-friendly" household cleaning products. But does homemade always mean "green"? Is green always safer? The amount of information out there can be overwhelming.

So what does it mean to be a green cleaning product? The green product should be effective and have the same cleaning power as other chemically infused products. Natural cleaning products should be made with plant- and mineral-based products such as essential oils and coconut based cleaners, use biodegradable ingredients and never be tested on animals. Green cleaners provide cleaning power without harsh chemical fumes of residue. A rule of thumb when looking for a green cleaner is to look at the list of ingredients. The fewer number of ingredients listed is actually better. It is also best if the ingredients listed are mostly 'plant-based materials.'
Green Seal, a private non-profit company, offers an independent verification program that insures products are in compliance with the green seal standard. Products are tested for environmental stewardess, performance as well as quality control procedures.

If the product meets the standards, the Green Seal logo will be on the product and can be used in advertising, promotional materials, catalogs and in product descriptions.

In January 2010 voluntary guidelines were put into place to insure the industry discloses more about product ingredients. These guidelines are known as the Ingredient Communication Initiative.
Some ingredients will still not be included and can be folded under such categories as "fragrance" or "preservatives."
The new initiative was developed to help consumers make informed decisions about the products they use in and around their homes.
This information may be provided to consumers in one or more of the following ways:

- Product label
- Manufacturer's website
- Toll-free number
- Other non-electronic means, to assist those who do not have access to the Internet.

Ingredients on cleaning and other consumer products included in the Initiative will be listed in descending order of predominance.

Household cleaning product ingredients with a concentration greater than one percent (1%)will be listed "in descending order of predominance," with the ingredient present in the highest quantity listed first. Ingredients present in low concentrations equal to or less than one percent can be listed in any order.

Key Terms

In order to understand what green cleaning products are used for consumers need to be familiar with some key terms. These terms are words that can bee seen directly on product labeling at the store and other places where products are sold.

- **Cleaning Products –** Cleaning products as defined in this document refer to products that are used for the routine cleaning of the indoor built environment. They include but are not limited to: glass cleaners, general-purpose cleaners, floor cleaners, laundry detergents, dishwashing detergents, deodorizers, hand soaps, and wax strippers.
- **Concentrate** – A product that is intended to be diluted with water.
- **Concentrated Form** – The product as it is packaged and sold for use.
- **Disinfectant** - A product that has received EPA registration based upon claims to kill bacteria, viruses, or other microorganisms. For purposes of this standard, the word disinfectant includes "sanitizer", "disinfectant" and "sterilant."
- **Environmental Protection Agency's (EPA's)** – The United States Environmental Protection Agency (EPA) is a government agency concerned with the American environment and its impact on human health. It was founded in 1970 under Richard Nixon in response to growing environmental concerns among Americans, and often works with other agencies to achieve optimal results.

- **General Purpose Cleaners** – Cleaning products used for routine cleaning of hard surfaces including floors. It does not include any EPA registered sterilizers, disinfectants or sanitizers.
- **Glass and Surface Cleaners** – Cleaning products used to clean windows, glass, mirrors, Plexiglas and similar surfaces. It does not include any EPA registered sterilizers, disinfectants or sanitizers.
- **Green Seal** – is an independent, non-profit organization that uses science based standards as the power of the marketplace to create a more sustainable world.
- **Material Safety Data Sheet (MSDS)** – a written or printed material concerning a hazardous chemical that contains the information set forth in the OSHA Hazard Communication Standard.
- **Pollutant** – any substance that directly or indirectly creates an adverse human health or environmental effect when introduced into any environmental media.
- **Recyclable Package** – A package that can be diverted from the wastestream through available processes or programs, and can be collected, processed and returned to be used as a raw material or product.
- **Toxicology** – Study of adverse effects of chemical, biological agents, and physical agents on living organisms.
- **Toxicity** – The inherent ability of a chemical, biological, or physical agent to cause adverse effects in living organisms.

Green Cleaning Options

There are a variety of ways that green products can be evaluated. Below is brief overview of those options which consumers need to take into consideration when purchasing green products.

Final Note

Cleaning products are designed to be safe for consumers, their families and the environment when used as directed. Always read instructions on cleaning products before using, and follow usage instructions carefully. Remember, each product's instructions can be different: but in general, always follow these basic guidelines:

- Store all household cleaning products in a secure location, out of the reach of children and pets.
- Don't mix cleaning products – irritating (or potentially toxic) fumes could result.
- Keep products in their original containers with the labels intact.
- Cleaning products are intended for external use only. Refer to the product label for emergency information if a cleaning product is swallowed, comes in contact with eyes or if irritating fumes from combined chemicals are

inhaled.
- In an emergency situation, call the U.S. Poison Control Center's national toll-free hotline at 1-800-222-1222, or call the number listed on the product label.

So what should we keep in mind when we consider purchasing environmentally safe cleaning products for our homes?
Safety!
To ensure you are buying environmentally safe cleaning products that are actually safe, look for these basic qualifications:
- Nontoxic
- No harmful fumes
- Hypoallergenic
- No volatile organic compounds (VOCs)
- Formulated without hazardous chemicals such as:
  Kerosene, Phenol, Cresol, Lye, Hydrochloric acid, Sulfuric acid, Sulfamic acid, Petroleum distillates, Ammonia, Sodium hydroxide, Butyl cellosolve, Phosphoric acid, Formaldehyde, Chlorine bleach or Morpholine.

Effectiveness!
Some good quality, environmentally safe cleaning products have been proven to be every bit, if not more effective than their caustic counterparts. Look for products that offer proof of effectiveness through third party testing.

Make Sure They're Really Green!
- Make sure they are made from sustainable ingredients from natural sources.
- Biodegradable surfactants that break down in a short period of time rather than years!
- Recyclable packaging! Check the bottom of the package for recycling that is available in your area!
- Recyclable wipes.
- Recyclable dryer sheets.
- No chlorine bleach.
- No phosphates.
- No nitrates.
- No borates.
- No volatile organic compounds (VOCs).
- No animal testing.

Concentrates!
One of the easiest, most environmentally friendly and economical things you can do is to buy concentrates.
Think about it. You may not have considered how much you are paying for water in a bottle of cleaner. Water in cleaners is the MOST EXPENSIVE WATER you can buy! Not only are you paying a high price for this basic first ingredient, you are also paying to
- ship the water,
- package the water and
- store the water.

Each of these steps adds tremendously to the pollution problem. Why not add your own water, in reusable bottles, at a fraction of the cost? By adding our own tap water we save emissions, landfill space and energy.

Resources and References:
http://www.aboutcleaningproducts.com
http://www.cleaninginstitute.org
http://www.walgreens.com/store/catalog/Cleaners/Natural-All-Purpose-Cleaner/ID=prod5483952-product?V=G&ec=frgl_&ci_src=14110944&ci_sku=sku5482819
http://www.coastwidelabs.com/Technical%20Articles/Green%20Cleaning%20Glossary.htm
http://www.healthy-kids-go-green.com/safe-cleaning-products.html