

# CLEANING WITH CAUTION



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## Why are we concerned about cleaning chemicals?

- About **6** out of every **100** professional janitors are injured by cleaning chemicals every year.
- One third of the cleaning products contain ingredients that can harm you.
- Knowing about chemical hazards and safer alternatives can help you clean more safely and effectively.

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## How can you tell the product is dangerous?

Read the label and follow the directions.

Look for signal words on labels.

**CAUTION**      *precaucion / iska ilaaly*

**WARNING**      *advertencia / digid*

**DANGER**      *peligro / khatar*

**POISON**      *veneno / sun*

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## How can you get chemical exposure?

*Routes of exposure*

**Eyes**

**Nose**

**Lungs**

**Mouth**

**Skin**

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## Protect yourself

1. Gloves
2. Dust Mask
3. Safety Glasses
4. Ventilation
5. Read and follow product labels and instructions.

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## Do you mix cleaning products together?



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## The most dangerous cleaning products in the home.

- Oven Cleaners
- Drain Cleaners
- Acid-based Toilet Cleaners

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## Hazardous cleaning chemicals and you

**Glycol ethers** (2-Butoxyethanol, ethylene glycol monobutyl ether)  
Through skin – anemia, low birth weights, reduced fertility.

**Sodium Hypochlorite (bleach)** and **Sodium Hydroxide (lye)**  
Through eyes and lungs – corrosive, poisonous.

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# Hazardous chemicals in the environment

## Dibutyl Phthalate (in plastics manufacturing)

Animal studies: **developmental effects**, **reproductive effects**, reduced weight, anemia, and liver damage.

## Nonyl Phenol Ethoxylate and Octyl Phenol Ethoxylate (in soaps and lawn chemicals)

Extremely toxic to aquatic organisms, and endocrine interference.

**No human information is available.**

Animal studies: **mimics estrogen**. Reduces fertilized eggs, normal embryo and survival.

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# MSDS for Household Products

1. Use the internet.
2. Call the manufacturer. Phone number is on the label.



		The Clorox Company 1221 Broadway Oakland, CA 94612 Tel. (510) 271-7000	<b>Material Safety Data Sheet</b>	
<b>I Product:</b> CLOROX REGULAR-BLEACH				
<b>Description:</b> CLEAR, LIGHT YELLOW LIQUID WITH A CHARACTERISTIC CHLORINE ODOR				
<b>Other Designations</b> Clorox Bleach EPA Reg. No. 5013-50	<b>Distributor</b> Clorox Sales Company 1221 Broadway Oakland, CA 94612	<b>Emergency Telephone Nos.</b> For Medical Emergencies call: (800) 448-1014 For Transportation Emergencies Chemtrec: (800) 424-9300		
<b>II Health Hazard Data</b>		<b>III Hazardous Ingredients</b>		
DANGER: CORROSIVE. May cause severe irritation or damage to eyes and skin. Vapor or mist may irritate. Harmful if swallowed. Keep out of reach of children. Some clinical reports suggest a low potential for sensitization upon exaggerated exposure to sodium hypochlorite if skin damage (e.g., irritation) occurs during		Inorganic Sodium hypochlorite CAS# 7681-52-9	Concentration 5 - 10%	Exposure Limit Not established
		Sodium hydroxide	-1%	2 mg/m <sup>3</sup>

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# Some products look like food

Keep similar cleaning products separated from food.



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# These are the same.

Clorox, cloro and bleach are the same product with the same ingredient, sodium hypochlorite.

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## Cleaning tips review

- Protect yourself: use gloves, safety glasses, and dust masks.
- Keep the area well ventilated.
- Never mix cleaning products together.
- Never mix bleach/cloro with other cleaners.
- Read and follow label instructions.

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## And More Cleaning Tips Review

- Avoid buying “**Warning**”, “**Danger**” & “**Poison**” products.
- Use products labeled “**Caution**”  
For cleaning: use white vinegar, baking soda, hydrogen peroxide, and lemon juice.

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## Alternative Products

### Green Cleaning Kit and Recipe

- Vinegar - Vinagre
- Baking Soda - *Bicarbonato de Sodio*
- Bon Ami



## “Green” products available



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## “Green” products available



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Look for logos.

## Fragranced Products



Logos and seals from certifying organizations.

- Perfumes and fragrances can contain hazardous chemicals.
- May contain hundreds of chemicals.
- Primarily synthetic chemicals derived from petroleum.
- Many of the chemicals are classified toxic or hazardous.

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## What is in a Fragrance?

Manufacturers are not required to list chemicals or test for health and environmental effects.

**We don't know.**



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## Do you need Fragranced products?

- Avoid products with any fragrance, perfume, or scent.
- Avoid air fresheners and deodorizers. Open a window.
- A clean house does not smell like cleaning products; it has no smell.

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## How fragrances can affect human health.

- **Headaches, cognitive difficulties, dizziness, memory loss, loss of consciousness, seizures, blurry vision**
- **Asthma attacks, breathing difficulties, congestion**
- **Fevers, joint and muscle pain, lethargy, sore throat, nausea, gastrointestinal problems, rashes**
- **Immune system weakened, thyroid dysfunction, vocational disability**

Information from Dr. Anne Steinemann's "Shelf to Sound".

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## Products that contain Fragrances

### Fabric softeners

#### Ingredients list on label:

Biodegradable fabric softening agents(cationic).

#### Actual Chemicals Found

(Laboratory Analysis by Dr. Anne Steinemann)

- \*chloromethane
- \*acetaldehyde
- 2,4-dimethyl-1,3-cyclopentanedione
- 3-methyl-2-buten-1-ol acetate
- αterpinolene
- diethoxy methane
- 1,5-dimethyl-1,4-cyclohexadiene
- **linalool**
- αterpinene
- ethanol
- **d-limonene**
- methoxy ethane
- α-pinene
- gamma-terpinene coeluted with 2,7-dimethyl-2,7-octanediol

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## Products that contain Fragrances

### Dryer sheets

#### Ingredients list on label:

Contains biodegradable cationic fabric softening agents and perfume.

#### Actual Chemicals Found

(Laboratory Analysis by Dr. Anne Steinemann)

- **linalool**
- ethanol
- benzylacetate
- **d-limonene**
- **α-pinene**
- benzylalcohol, α-methyl-,acetate(α-phenylethylacetate)
- β-pinene
- dimethyl-3-cyclohexene-1-carboxaldehyde
- methylbenzoate
- **acetone**

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## Products that contain Fragrances

### Air fresheners

Ingredients list on label: No ingredients listed.

#### Actual Chemicals Found (Laboratory Analysis by Dr.

Anne Steinemann, "Shelf to Sound".)

- **d-limonene**
- 3-methoxy-3-methylbutanol
- **linalool**
- benzyl alcohol, α-methyl-, acetate
- β-pinene
- **ethanol**
- **acetone**
- **cis-limonene oxide**
- **limonene oxide**

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## Fabric softener, dryer sheet, and air freshener - common chemicals

- **Chloromethane** - suspected carcinogen
- **Acetaldehyde** - suspected carcinogen
- **Linalool**
- **d-limonene** - skin and eye irritant, dermal sensitizer
- **Acetone** – skin and lungs irritant, may cause liver damage

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## Fragranced products alternatives

### Air fresheners

Baking soda absorbs odors, place a few open boxes throughout the home.

White vinegar dilute in water and wipe on surfaces or spray in the air.

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## Fragranced products alternatives

### Fabric softener

Add  $\frac{1}{2}$  cup baking soda to the rinse cycle.

**OR**

Add  $\frac{1}{4}$  cup white vinegar in the rinse cycle.

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## Fragranced products alternatives

### Cooking odors

Use vinegar to remove cooking odors.

Place a bowl with vinegar on the counter.



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# CLEANING WITH CAUTION

## **Información Útil**

Poison Control Center: 1-800-222-1222

Household Hazardous Waste Line: 206-296-4692

Business Waste Line: 206-263-8899

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"Chemical Hazards from Cleaning Products", Washington State Labor and Industries, on-line Safety Training Tools Module 1, ppt.

Website: [www.lni.wa.gov/Safety/TrainingTools/online](http://www.lni.wa.gov/Safety/TrainingTools/online)

"Janitorial Cleaning", Hawaii Department of Health, Pollution Prevention (P2) in Action fact sheet,

Website: [www.hawaii.gov/health/environmental/waste/p2wastemin](http://www.hawaii.gov/health/environmental/waste/p2wastemin)

Design for the Environment (Dfe), US EPA, Website: [www.epa.gov/dfe](http://www.epa.gov/dfe)

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"Janitorial Products, Pollution Prevention Project", Western Regional Pollution Prevention Network,

Website: [www.wrppn.org/Janitorial](http://www.wrppn.org/Janitorial)

Agency for Toxic Substances and Disease Registry (ASTDR) <http://www.atsdr.cdc.gov/toxfaqs/af.asp?id=4&tid=1>

US EPA Technology Transfer Network <http://www.epa.gov/ttn/atw/hithec/acetald.html>

"Shelf to Sound", Steinemann, Anne, University of Washington Professor, Civil and Environmental Engineering and Public Affairs

