



# Tailgate Safety Talk

*Information You Can Use to Prevent Accidents & Injuries*

## Dangerous Cleaning Concoctions

Each year, thousands of Americans have to call their local poison-control center--and some even end up in a hospital--simply because they don't know how dangerous it can be to mix household cleaners. Countless more suffer from burning eyes, sore throats, headaches, nausea, and labored breathing.

"We cannot overemphasize the importance of reading labels," says Janet Donohue, director of communications for the NYC-based Soap and Detergent Association. "Commercial products pass rigorous safety standards, but people must use them according to the directions."

### A BRIGHTENER'S DARK SIDE

Chlorine bleach whitens, brightens, and generally lightens the load on cleaning day. It's great for removing stains, and it's a powerful disinfectant as well. But, as any label will tell you, there are two things you should never mix with chlorine bleach: ammonia and acids.

Favored for its degreasing action, ammonia combines with chlorine bleach to form harmful vapors called chloramines. Found in a variety of products (and existing naturally in vinegar and lemon juice) acids turn liquid chlorine into chlorine gas.

When you inhale chloramines and chlorine gas, they damage the mucous membranes in your respiratory system, causing acute irritation of the nasal passages, throat, and lungs. Prolonged exposure can make it hard for your lungs to extract oxygen from the air.

The American Association of Poison Control Centers tallied 3,380 cases of exposure to chloramines, and 1,127 exposures to chlorine gas in 1996. Of these, the vast majority could be treated at home with fresh air and water. However, some 700 individuals needed medical attention, and a handful of people suffered permanent lung or neurological damage. At least one exposure to chlorine gas resulted in death.

Although it's easy enough to remember not to pour straight ammonia into a bucket of chlorine bleach, you should never mix any household chemicals. Formulations change all the time and you can never be sure exactly what chemicals may be in what product.

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## **POW! RIGHT IN THE KITCHEN!**

A less common but equally real danger lurks in the plumbing under your kitchen sink. Most commercial drain openers are chemically "basic" (as opposed to "acidic"). When the greasiest, most stubborn clogs refuse to break up, some people resort to using sulfuric acid on top of what they tried first. The result? "It's like a volcano. There's a second or two of fizzing, then pow!" says Donald Wink, a chemistry professor at the University of Illinois at Chicago. "When they (the bases and acids) neutralize each other, they create sufficient heat to boil the water and create splatter."

## **DO THE ALTERNATIVES MATCH UP?**

**BAKING SODA TO CLEAN?** Chemical reactions can be avoided by using food-grade products in place of commercial cleaners. Mold or mildew can be removed with vinegar (a natural disinfectant) and salt (an abrasive) in equal parts. Home recipes exist for ink spots (cream of tartar, lemon juice, and water) to toilet bowls (baking soda and castile soap) to windows (vinegar and warm water).

**ARE THEY SAFE?** The greatest danger in using homemade cleaners lies in storing them in unmarked containers. Remember, even "natural" cleaners like lemon juice are made of chemicals (such as citric acid) that can react negatively with other chemicals. To guard against a problem, always list the exact ingredients on the container. That way, your poison-control center will know how to respond in an emergency.

**DO THEY WORK?** Mix-at-home recipes certainly work better than plain water, but studies show that they pale in comparison to commercial products. According to a study published in the Journal of Environmental Health, alternative cleaners, such as lemon juice, vinegar, and baking soda, were less effective both as disinfectants and as soil removers than conventional cleaners.

## **REMEMBER THIS FORMULA:**

**BLEACH + AMMONIA = POISON FUMES!**



*Users of this tailgate talk are advised to determine the suitability of the information as it applies to local situations and work practices and its conformance with applicable laws and regulations.*