

# Acrylamide: Frequently Asked Questions

## 1. What is acrylamide?

Acrylamide is on the Proposition 65 list of chemicals known to the state to cause cancer or reproductive toxicity (such as birth defects and other reproductive harm).

For many years, acrylamide has been used in grouts and cements, pulp and paper production, ore processing, permanent-press fabrics, and dye manufacture. It is also used to produce polyacrylamide, which is used in water and wastewater treatment, soil conditioning and oil drilling. Acrylamide also is present in tobacco smoke.

In 2002, Swedish researchers discovered that acrylamide forms during the baking, frying, or roasting of certain kinds of foods, particularly starchy foods. Acrylamide is not added to foods. It is a contaminant that forms during the baking, frying or roasting of certain plant-based foods. Boiling and steaming foods does not create acrylamide.

French fries, potato chips, other fried and baked snack foods, roasted asparagus, canned sweet potatoes and pumpkin, canned black olives, roasted nuts, coffee, roasted grain-based coffee substitutes, prune juice, breakfast cereals, crackers, cookies, bread crusts, and toast all contain varying levels of acrylamide.

## 2. Is acrylamide toxic?

A number of scientific studies indicate that acrylamide can cause cancer in laboratory animals, and available information indicates that significant exposure to acrylamide poses a cancer risk in humans. Occupational exposure to acrylamide has also been shown to harm the human nervous system. In studies in rats and mice, it affected the growth of offspring exposed in the womb, reduced sperm production, and damaged sperm DNA resulting in the death of embryos. Acrylamide was added to California's Proposition 65 list as a carcinogen in 1990 and as a reproductive toxicant in February 2011.

Until the discovery of acrylamide in food, concern about the chemical's potential health effects centered on workers who handle the chemical. It now appears that virtually everyone is regularly exposed to acrylamide through the food they eat.

## 3. Should I stop eating certain kinds of food?

The U.S. Food and Drug Administration (FDA) and other health and scientific organizations continue to study the prevalence of acrylamide in food, its formation during cooking, its effect on health, and cooking methods that can reduce acrylamide levels in foods. The FDA has not advised the public to stop eating foods that contain acrylamide. This research may form the basis for more specific dietary advice or federal regulation of specific food products in the future.

In the interest of promoting overall good health, the FDA recommends eating a balanced diet that includes foods high in dietary fiber, like fruits, beans, vegetables, and whole grains. Choosing foods low in sodium, saturated fats, trans fats, and cholesterol also promotes heart health, according to the FDA.

The U.S. National Toxicology Program offers the following tips for reducing acrylamide exposure:

- Fry foods at 338 degrees Fahrenheit or lower.
- Cook potato strips, such as French fries, to a golden yellow rather than a golden brown color.
- Toast bread to the lightest color acceptable.
- Soak raw potato slices in water for 15 to 30 minutes before frying or roasting. Drain and blot dry before cooking.
- Do not store raw potatoes in the refrigerator.

Read more about the FDA's 2010 dietary guidelines here:

<http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm199058.htm>.

Read the U.S. National Toxicology Program's Fact Sheet on acrylamide here:

<http://www.niehs.nih.gov/about/materials/acrylamide-fact508.pdf>

#### **4. What is Proposition 65?**

Proposition 65 is a "right to know" law that was approved by voters as a ballot initiative in 1986. It requires the State of California to maintain a list of chemicals that cause cancer or reproductive toxicity (such as birth defects or other reproductive harm). Businesses that knowingly expose individuals to listed chemicals above certain levels generally are required to provide warnings.

Currently, there are more than 800 substances on this list, including acrylamide. Many of these listed substances are additives or ingredients in pesticides, common household products, foods, drugs, dyes, or solvents. The California Office of Environmental Health Hazard Assessment maintains the Proposition 65 list.

Proposition 65 does not ban or regulate chemicals in consumer products – it enables consumers to decide whether they want to purchase or use products that expose them to chemicals that cause cancer or reproductive toxicity.

The California Attorney General, county district attorneys and certain city attorneys enforce Proposition 65. They can file civil suits against businesses that do not comply with the law. Members of the public may also file civil suits to enforce the statute in the public interest.

**Learn more about Proposition 65 here:**

<http://www.oehha.ca.gov/prop65/background/index.html>