# Consumer Factsheet on: ACRYLAMIDE

List of Contaminants

As part of the Drinking Water and Health pages, this fact sheet is part of a larger publication:
**National Primary Drinking Water Regulations**

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

**What is Acrylamide and how is it used?**

Acrylamide is an organic solid of white, odorless, flake-like crystals. The greatest use of acrylamide is as a coagulant aid in drinking water treatment. Other uses of include: to improve production from oil wells; in making organic chemicals and dyes; in the sizing of paper and textiles; in ore processing; in the construction of dam foundations and tunnels.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

**Trade Names and Synonyms:**

2-Propenamide
Acrylic amide
Ethylenecarboxamide
Amresco Acryl-40
Acrylagel
Optimum

**Why is Acrylamide being Regulated?**

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for acrylamide has been set at zero because EPA believes this level of protection would not cause any of the potential health problems described below.

There are currently no acceptable means of detecting acrylamide in drinking water. In this case, EPA is requiring water suppliers to use a special treatment technique to control its amount in water. Since acrylamide is used in drinking water treatment processes, it is being controlled simply by limiting its use for this purpose.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

**What are the Health Effects?**

Short-term: EPA has found acrylamide to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: damage to the nervous system, weakness and incoordination in the legs.

Long-term: Acrylamide has the potential to cause the following effects from a lifetime exposure at levels above the MCL: damage to the nervous system, paralysis; cancer.

**How much Acrylamide is produced and released to the environment?**

Demand for acrylamide in the early 1990s was about 120 million pounds. The main source of concern for acrylamide in drinking water is from its use as a clarifier during water treatment. When added to water, it coagulates and traps suspended solids for easier removal. However, some acrylamide does not coagulate and remains in the water as a contaminant. Improvements in the production and use of acrylamide have made it possible to control this contamination to acceptable levels.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, acrylamide releases to land and water totalled over 40,000 lbs. These releases were primarily from plastics industries. The largest releases occurred in Michigan.

**What happens to Acrylamide when it is released to the environment?**

Acrylamide does not bind to soil and will move into soil rapidly, but it is degraded by microbes within a few days in soil and water. Its has little tendency to accumulate in fish.

**How will Acrylamide be Detected in and Removed from My Drinking Water?**

The regulation for acrylamide became effective in 1992. EPA requires your water supplier to show that when acrylamide is added to water, the amount of uncoagulated acrylamide is less than 0.5 ppb.

**How will I know if Acrylamide is in my drinking water?**

If the treatment technique for acrylamide fails, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

**Drinking Water Standards:**

Mclg: zero

Mcl: Treatment Technique

**Acrylamide Releases to Water and Land, 1987 to 1993 (in pounds):**

| | **Water** | **Land** |
|---|---|---|
| **TOTALS (in pounds)** | **36,287** | **5,818** |
| **Top Five States*** | | |
| MI | 12,200 | 0 |
| WA | 8,000 | 0 |
| CT | 5,690 | 0 |
| LA | 4,367 | 500 |
| PA | 2,505 | 20 |
| AL | 1,262 | 1,258 |
| **Major Industries*** | | |
| Plastics and resins | 19,002 | 2,177 |
| Pulp mills | 8,000 | 0 |
| Indust. organics | 3,107 | 2,200 |
| Indust. inorganics | 2,510 | 500 |

* Water/Land totals only include facilities with releases greater 100 lbs.

**Learn more about your drinking water!**

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone books government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call: EPAs Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the: Community Right-to-Know Hotline: (800) 424-9346.