

Perchlorate

Sources of Perchlorate

Perchlorate is a chemical used in solid fuel for missiles and rockets. Small amounts of perchlorate are used in car air bags, electronics, fireworks and fertilizer. Since the 1950s, over 870 million pounds of perchlorate have been manufactured in the United States. As a result of its manufacture, use and disposal, perchlorate is being discovered in soil, groundwater, drinking water, and irrigation water around the country. Perchlorate also occurs naturally in the environment, and has been found in the Texas and in the Southwestern United States. Perchlorate is the main ingredient in missile and rocket fuel and has been found in ground and surface water throughout the country since the 1950's.

Health Effects

Perchlorate interferes with the ability of the thyroid to get enough iodide, a necessary nutrient. Low iodide suppresses thyroid hormones, which are critical to growth, development and metabolism. Perchlorate, even at low levels of exposure, has been linked to disruption of thyroid hormones. Thyroid hormone problems can cause permanent brain damage in fetuses and infants. Perchlorate poses a special risk to people who already have a thyroid problem. According to the American Association of Clinical Endocrinologists (AACE), as many as 27 million Americans are affected by thyroid conditions. At higher doses perchlorate has been linked to thyroid cancer and to effects on the immune system, and research is underway as to whether there is a cancer link to lower level perchlorate exposure. Fetuses, newborns and individuals with hypothyroid conditions (too little thyroid hormone) or iodine deficiency are at particular risk from repeated perchlorate exposure, even at low doses. Perchlorate at levels currently found in drinking water may cause serious health problems .

Why isn't Perchlorate in Drinking Water Regulated Now?

Since perchlorate was first found in drinking water in the 1950's, the US Air Force, chemical companies and defense contractors have interfered with government efforts to determine the extent of contamination and to regulate perchlorate. There is no enforceable federal drinking water standard for perchlorate. In 2002, following an extensive peer review and multiple internal and external scientific evaluations, the U.S. Environmental Protection Agency (EPA) issued a draft health assessment for perchlorate along with a "drinking water equivalent level" of 1 ppb. Controversy over new and existing science continued. On October 10, 2008, the EPA released its preliminary determination not to set an enforceable drinking water standard for perchlorate.

Treatment and Clean up:

The Government Accountability Office (GAO) reports that perchlorate has been found at 395 sites across the US including 135 public drinking water systems in levels from 4 ppb to 3.7 million ppb. GAO reported that federal and state agencies are not required to routinely report perchlorate findings to the EPA, and that the EPA does not track or monitor perchlorate detections or cleanups. Perchlorate contamination is being found in many places where there is no record of the chemical's use. Technologies for removing perchlorate from groundwater vary depending on the location and amount of contamination and research on treatment is on-going.

Will Polluters Pay Their Fair Share?

The cost of cleaning up perchlorate where groundwater is contaminated and/or removing it from drinking water sources is high; clean-up plans at some sites in California estimate costs in the hundreds of millions of dollars. Defense contractors and manufacturers of perchlorate have already succeeded in getting taxpayers in California to foot more of the bill than usual at specific sites. With perchlorate

contamination being discovered all over the country, it is likely that industries and entities responsible for perchlorate contamination will continue to try to evade responsibility for clean up costs. It is imperative that taxpayers and consumers do not foot this bill and that polluters pay their fair share.

What Needs to Be Done?

Some states have moved forward with action on perchlorate despite federal inaction. In 2006, Massachusetts set an enforceable drinking water standard of 2.0 ppb for perchlorate. In 2007, California set an enforceable drinking water standard of 6.0 ppb for perchlorate. Seven other states have set unenforceable “advisory levels” or public health “guidance’s” for perchlorate: Arizona (14 ppb); Illinois (25 ppb); Maryland (1 ppb); Nevada (18 ppb); New Mexico (1 ppb); New York (5 ppb to notify state, 18 ppb public notification); Texas (4 ppb interim action level). New Jersey is considering setting a 5 ppb MCL. Research and EPA’s own work indicates that a 6 ppb and above standard for perchlorate is not sufficient to protect public health. Activity is also expected in other states as the extent of contamination problems become more widely known by the general public. Industry and government polluters responsible for perchlorate contamination continue to lobby aggressively against health protective regulation and for taxpayer subsidies in an attempt to avoid their fair share of clean-up costs.

Steps that should be taken immediately by state and federal governments include:

- Set an immediate health protective limit for perchlorate in drinking water that protects fetuses, newborns, and adults with hypothyroidism or iodine deficiency;
- Provide people vulnerable to perchlorate contamination with full disclosure of health risks associated with drinking perchlorate-contaminated water and the extent of contamination in their communities;
- Implement an immediate prevention plan to protect further drinking water sources from contamination;
- Mandate that polluters, including governmental agencies such as DOD and NASA, pay the full cost of cleanup of perchlorate contamination.

What You Can Do

- **Weigh in on federal and state policy efforts. Until November 10, 2008 the public can comment on EPA’s decision NOT to set a limit for perchlorate in drinking water. Take action at www.cleanwaterfund.org/takeaction**
- You can find out if you have perchlorate in your drinking water by getting your water company’s annual “Consumer Confidence” or “Right to Know” Report. If you obtain your water from a private well, you can find useful information on water testing and other issues through the EPA’s Safe Drinking Water Hotline at 1-800-426-4791. **Do not assume that bottled water is a better option; bottled water is less regulated than tap water from public water systems.**

Resources

- EPA Perchlorate Information Available Online at www.epa.gov/safewater/ccl/perchlorate/perchlorate.html
- Clean Water Action (www.cleanwateraction.org) and Clean Water Fund (www.cleanwaterfund.org)
- *Bottled Water: Pure Drink or Pure Hype?*, Natural Resources Defense Council, 1999
- Environmental Working Group (www.ewg.org)

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