

## PERCHLORATE, THE SAFE DRINKING WATER ACT AND PUBLIC HEALTH

**Perchlorate — a naturally-occurring and man-made salt used in military, aerospace and industrial settings — is one of the most studied chemicals under regulatory review.** It has been the subject of more than 60 years of research, beginning with its worldwide use as a prescribed drug to treat Graves’ Disease. It is precisely because perchlorate has been so well studied that perchlorate’s lack of health effects are so well understood.

High levels of perchlorate are known to inhibit iodide uptake, an effect which scientists have concluded is both non-adverse and reversible. Perchlorate is one of three compounds known to have this non-adverse effect. The other two, nitrate and thiocyanate, each occur naturally in many of the foods we eat; together these two compounds account for more than 99 percent of the iodide uptake inhibition (IUI) that takes place in the body. *Even at high doses, perchlorate accounts for less than one percent of IUI.* The best available science has also established that perchlorate has *no* measurable effect on health at a level equivalent to 245 parts per billion (ppb) in drinking water.



In 2005, the [National Academies of Science \(NAS\)](#), applied a *ten-fold* safety factor to this 245 ppb no-effect level and concluded that a reference dose for perchlorate of 0.0007 milligrams per kilogram of body weight per day — roughly equal to 24.5 parts per billion (ppb) in drinking water — would be safe for even the most sensitive populations (*i.e.*, fetuses of pregnant women who may be iodine -deficient). This represents a much more conservative approach than generally applied by EPA. Since the NAS report was published, additional authorities have reached the same conclusion: low levels of perchlorate have no effect on human health, even when sensitive populations are considered.

In early 2011 — even as new studies confirmed the findings of NAS and other researchers — EPA published a new *Regulatory Determination on Perchlorate*, concluding that perchlorate should be regulated under the federal Safe Drinking Water Act (SDWA).

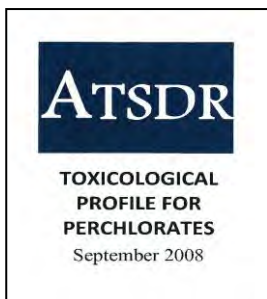
In order for the EPA to decide to regulate any compound under the SDWA, it has to satisfy all three statutory requirements. Specifically:

1. The compound must cause an adverse effect on human health;
2. It must be present in drinking water systems at a frequency and level of public health concern; and
3. Regulation presents a meaningful opportunity for health risk reduction.

| <b>The Safe Water Drinking Act clearly prescribes whether perchlorate should be regulated by the U.S. EPA</b>     |                                     |
|---|-------------------------------------|
|   | <b>Meets criteria?</b>              |
|   | <u>Yes</u> <u>No</u>                |
| Does perchlorate cause an adverse effect on human health?   | <input checked="" type="checkbox"/> |
| Does perchlorate create a public health concern due to frequency and level of presence in drinking water systems? | <input checked="" type="checkbox"/> |
| Does regulating perchlorate provide a meaningful opportunity for health risk reduction?                           | <input checked="" type="checkbox"/> |

However, in its *Regulatory Determination on Perchlorate* EPA did not demonstrate that perchlorate meets any, let alone all, of the statutory criteria. EPA instead relies on broad generalizations that do not satisfy the requirements of the SDWA. Under the overly broad rationale of the determination, anything could be subject to EPA regulation. EPA must recognize the overwhelming scientific evidence that there is no public health benefit in additional federal regulation of perchlorate.

Recent confirmation of the ability of perchlorate to form naturally in the atmosphere in arid environments — even on Mars — suggests that the compound has been part of our natural environment for millennia. Further, since the NAS report was published, other authoritative bodies —



including the [Agency for Toxic Substances and Disease Registry](#) and EPA's own [Office of Inspector General](#) — have independently concluded that the low levels of perchlorate found in the environment have no effect on human health, even when sensitive populations are considered. This is a reliable and strongly consistent body of scientific analysis.



The Obama Administration has indicated its commitment, even in recent remarks made before Congress by EPA Administrator Lisa Jackson, to making decisions based on the best available science. The public is right to expect this promise to be kept, yet this does not appear to be so in the case of perchlorate, where the **science is abundantly and overwhelmingly clear: environmental levels of perchlorate do not pose a public health concern.**

As the nation faces unprecedented pressure on public sector budgets, **expending limited federal resources on a chemical that poses no adverse health effects at environmental levels serves no public benefit.** Further, the far reaching impacts such a misallocation could have on other, more vital public health programs should be considered.

- “I could not emphasize enough the importance of using sound science, the best available science, peer-reviewed science.”
- “... and of course we will make sure our approach continues to be based on sound, up-to-date science.”
- “... science will guide all of our actions...”
- “Senator, I commit to following the SDWA.”

**U.S. EPA Administrator Lisa Jackson**  
**testimony before the Senate Environment and Public Works Committee**  
**February 2, 2011**