# 1,4 – Dioxane Fact Sheet

**What is 1,4 - Dioxane?**

1,4-Dioxane is a synthetic chemical that is used in many products including paint strippers, dyes, greases, varnishes and waxes. This contaminant is also found as an impurity in antifreeze and aircraft de-icing fluids and in some consumer products (deodorants, shampoos and cosmetics).

Traces of 1,4-dioxane may be present in some food supplements, food containing residues from packaging adhesives or on food crops treated with pesticides that contain 1,4-dioxane as a solvent or inert ingredient.

**How are people exposed to 1,4-Dioxane?**

People can come into contact with 1,4-Dioxane through the use of cosmetics, shampoos, detergents and other consumer products with the compound in them. 1,4-Dioxane was commonly used as a stabilizer for chlorinated solvents, particularly 1,1,1-trichloroethane (TCA). Where such solvents have polluted a groundwater aquifer or a surface water supply, the public can be exposed to 1,4-Dioxane through the water they consume or through bathing and showering. 1,4-Dioxane is transported in groundwater from a source of contamination more quickly than other solvents, so it may be present when other solvents are not.

**Is there a Maximum Contaminant Level (MCL)?**

There is currently no chemical-specific Federal or New York State drinking water standard for 1,4-Dioxane; however it is regulated as an Unspecified Organic Contaminant by the New York State Department of Health (NYSDOH) at a maximum contaminant level (standard) of 50 parts per billion (ppb).

In 2017, Governor Cuomo established the Drinking Water Council – a panel of experts charged with recommending an MCL for emerging contaminants such as 1,4-Dioxane. In December 2018, the Council recommended to the New York State Health Department an MCL of 1 part per billion (ppb) for 1,4-Dioxane.

The Plainview Water District has sampled all of its drinking water wells under the UCMR-3 program. Detections of 1,4-Dioxane has ranged from 0.18 ppb to 5.8 ppb with the average of 1.9 ppb for all 12 wells sampled.

According to the EPA Integrated Risk Information System, the risk assessment for development of cancer could increase by one out of one million, assuming consumption of 2 liters of water per day each and every day for a lifetime (70 years) at a concentration of 0.35 ppb of 1,4-Dioxane in the water.

**What is the Plainview Water District doing about 1,4-Dioxane?**

In the Fall of 2018 the Plainview Water District was awarded a grant to pilot advanced treatment systems aimed at removing 1,4-Dioxane from our groundwater supply. The District is also pursuing litigation against manufacturers of 1,4-Dioxane and those polluters responsible for its presents in our groundwater.

**Will the EPA be setting a drinking water standard for 1,4-Dioxane?**

A federal drinking water standard for 1,4-Dioxane has not yet been established. However, with the recent recommendation from the Drinking Water Council to the New York State Health Department, the EPA is urged to set a maximum contaminant level (MCL) for 1,4-Dioxane. Should the federal government fail to set a standard for this contaminant, New York State may consider setting a New York State MCL for 1,4-Dioxane. There are other states in the country that have set guidelines for 1,4-Dioxane However, no MCL’s have been established for this contaminant.

On an EPA level, if there is scientifically compelling evidence that shows a large number of U.S. drinking water systems have high amounts of 1,4-Dioxane, it is possible that they may decide to regulate 1,4-Dioxane in the future. Before regulating a contaminant, EPA considers projected adverse health effects from the contaminant, the extent of occurrence of the contaminant in drinking water, and whether regulation of the contaminant would present a meaningful opportunity for reducing risks to health.

**Is there 1,4-Dioxane present in bottled water?**

Bottled water quality can vary. Bottled water in the United States is regulated by the U.S. Food and Drug Administration (FDA) and is required to meet standards set by the FDA. When the EPA sets a new standard for a contaminant in tap water, the FDA must establish a new standard for the same contaminant in bottled water or find that the new standard is not applicable to bottled water. There are also individual state standards established for bottled water. In most cases, however, you must contact the bottled water manufacturer for information about dioxane levels in the water. The US FDA does not regulate the use of 1,4-dioxane or its by-products in consumer products, so it’s important that consumers are aware of what products they are using.

**Can I buy a home treatment device to remove 1,4-Dioxane?**

The Plainview Water District continuously samples its water in the distribution system and currently the water from your tap is well below the EPA standard for unspecified organic contaminants. There is no further action that our customers need to take. Treatment technologies such as advanced oxidation processes are not economically viable or reliable enough to be considered for residential use. The District advises our consumers to be cautious of home filter suppliers that claim to remove 1,4-Dioxane, as very little technology has been certified for this contaminant, and testing is not able to be performed in the home. Without access to testing you may be purchasing treatment that may not be doing what was expected.

**Found In:**

Products that create suds (such as shampoo, liquid soap, bubble bath), hair relaxers, others

**What To Look for on the Label:**

Sodium laureth sulfate, PEG compounds, chemicals that include the clauses xynol, ceteareth and oleth.

**Where can I find more information regarding 1,4-Dioxane?**

* New York State actions related to Standards for 1,4-Dioxane: <https://www.governor.ny.gov/news/governor-cuomo-calls-epa-set-clear-and-enforceable-drinking-water-standard-1-4-dioxane>
* EPA Fact Sheet on 1,4-Dioxane:

<https://www.epa.gov/sites/production/files/2014-03/documents/ffrro_factsheet_contaminant_14-dioxane_january2014_final.pdf>

* Information related to a pilot study conducted to treat for 1,4 - Dioxane:

<https://pdfs.semanticscholar.org/4a00/9d8660f3d9f661561edb37006df331042af1.pdf>

* AWWA Advanced Oxidation Handbook

<https://www.awwa.org/portals/0/files/publications/documents/advancedoxidationlookinside.pdf>

For further information on 1,4-Dioxane and our drinking water supply, feel free to contact the Plainview Water District at (516) 931-6469 or visit our website at www.plainviewwater.org

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