Fact Sheet

Frequently Asked Questions: 1,2,3-Trichloropropane (TCP) in Drinking Water

What is 1,2,3-TCP and Where Does it Come From?

1,2,3- TCP is a manmade chemical found at industrial or hazardous waste sites. It has been used as a cleaning and degreasing solvent and also is associated with pesticide products. It is a chlorinated hydrocarbon with high chemical stability.

Why is There a Public Health Concern?

1,2,3-TCP is recognized in California as a carcinogen. It has been found in numerous drinking water sources in the state. In August 2009, a public health goal (PHG) for 1,2,3-TCP was developed by the Office of Environmental Health Hazard Assessment (OEHHA) for use by the State Water Board to establish an MCL. This PHG represents the level of 1,2,3-TCP in drinking water that does not pose a significant risk to health over a lifetime of exposure (70 years).The PHG for 1,2,3-TCP is 0.0007 µg/L, or 0.7 parts per trillion (ppt).

Public health goals are established solely on the basis of health-effects data and do not consider technical or economic feasibility. Therefore, they can sometimes be set at levels lower than can be detected by current laboratory methods, or be removed from drinking water with currently available treatment technologies. PHGs are not regulatory requirements.

A drinking water standard, or Maximum Contaminant Level (MCL), establishes a limit on the allowable concentration of a contaminant in drinking water that is provided by a public water system. For 1,2,3-TCP, California has not yet adopted an MCL.

How do I find out whether there is 1,2,3-TCP in my water?

If your water is provided by a public water system, you should contact the water system to see if they have any test results. You may also contact the State Water Board's District office for your county to determine if there is already monitoring data for your water supply.

If you are on a private well, you would need to arrange for testing of your own water supply.

How is 1,2,3-TCP Monitored and Regulated in Drinking Water Without an MCL?

Public water systems are generally not required to monitor for chemicals that are not regulated. In an effort to obtain data on the presence of 1,2,3-TCP in drinking water sources statewide, a regulation was adopted in 2001 that required some public water systems to

monitor for 1,2,3-TCP. The monitoring took place between 2001 and 2003. In 2012, the United States Environmental Protection Agency revised the federal Unregulated Contaminant Monitoring Rule to establish a new set of unregulated contaminants that must be monitored. This required all public water systems serving more than 10,000 people, and representative public water systems serving smaller populations, to monitor for the new set of contaminants, including 1,2,3-TCP. Monitoring was required to be completed by December 2015. Some water systems have also performed monitoring for 1,2,3-TCP voluntarily. Using the monitoring results from 2001 to 2015, 1,2,3-TCP has been detected in 471 sources in California, at concentrations between 0.005 µg/L (5 ppt) and 10 µg/L (10 ppb).

In 1999 a drinking water notification level for 1,2,3-TCP was set at 0.005 µg/L. This notification level is based on cancer risks derived from laboratory animal studies. When a public water system sampling for 1,2,3-TCP has a finding above the notification level, the water system has some notification requirements. If 1,2,3-TCP is detected at 100 times greater than the notification level, the State Water Board recommendation is that the source be taken out of service.

What are the specific health impacts from being exposed to 1,2,3-TCP?

If you drink water over a lifetime that contains 1,2,3-TCP at concentrations higher than the PHG, there is an increased lifetime risk of developing cancer. The increased risk depends on the 1,2,3-TCP concentration in the water. For water with a 1,2,3-TCP concentration of 5 ppt, the increased lifetime cancer risk is less than one cancer case per 100,000 people. For water with a 1,2,3-TCP concentration of 70 ppt, the increased lifetime cancer risk is about one in 10,000 people.

If you are exposed to more concentrated forms of 1,2,3-TCP (such as working around 1,2,3-TCP or being exposed to heavy fumes), there is a risk of short-term health impacts such as:

- Irritation of the skin, nose, eyes and throat
- Drowsiness
- Headache
- Impacts on concentration, memory and muscle coordination

What is a State Maximum Contaminant Level (MCL)?

Currently, there is no federal MCL for 1,2,3-TCP. In the absence of a federal standard California may establish its own drinking water standards. State MCLs are health protective drinking water standards for public water systems. MCLs must be set in accordance with Health & Safety Code §116365(a), which requires the State Water Board to establish the MCL at a level as close to its PHG as is technologically and economically feasible, placing primary emphasis on the protection of public health.

How Are MCL levels Established?

The development of an MCL regulation requires rigorous investigation into technical and economic feasibility. The MCL adoption process also requires full compliance with the California Administrative Procedures Act (APA), which provides an opportunity for public input.

How are Public Water Systems Going to Remove 1,2,3-TCP from Drinking Water?

The best available technology to adequately remove 1,2,3-TCP from drinking water is likely to be granulated active carbon (GAC). Granulated active carbon is not a new treatment technology, but rather an effective and tested technology that has been used for decades. Some water systems already have GAC treatment in place, while other public water systems may require construction of new treatment systems to comply with a new MCL for 1,2,3-TCP.

Is Establishing an MCL for 1-2-3 TCP a Priority for the State Water Board Right Now?

The development of a 1,2,3-TCP MCL is, and has been, a high priority for the State Water Board and the Division of Drinking Water. The State Water Board is committed to the protection of public health through the open and transparent adoption of drinking water regulations. The State Water Board anticipates that a proposed 1,2,3-TCP MCL will be presented to the public for comments in late 2016.

How can I find out when it is time to review and comment on the proposed MCL for 1,2,3-TCP?

The Division of Drinking Water uses subscription email lists to notify interested parties of upcoming activities related to the development of new drinking water-related regulations. You may subscribe to a list to receive information about upcoming drinking water regulations by following these steps:

- Go to the E-mail Subscription Mailing Lists webpage and select "State Water Resources Control Board."
- Fill in the contact information with your email address and full name.
- Select the category “Drinking Water” and then select the first box "Drinking Water Program Announcements." You may select other categories as well.
- Click "subscribe."

Public workshops and Board meeting agendas are also posted on the State Water Board webpage.

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