

AHTN in Drinking Water

6-acetyl-1,1,2,4,4,7 hexamethyltetraline (AHTN or Tonalide) is a contaminant that has been found in waters that could be used as drinking water sources in Minnesota. The Minnesota Department of Health (MDH) developed a health-based guidance value for AHTN in drinking water and, based on this value, does not expect levels in drinking water to harm Minnesotans.

What is AHTN?

AHTN (or “Tonalide”) is a musky fragrance used in cosmetics and personal care products such as shampoo and lotion. It is also used in cleaning products such as soap and laundry detergent.

How much AHTN is in Minnesota drinking water?

AHTN was found twice in untreated drinking water at a concentration of 0.065 parts per billion (ppb) and 0.036 ppb.^{1,2} However, only a few studies have looked for AHTN in drinking water.

Has AHTN been found in other waters in Minnesota?

The United States Geological Survey (USGS) measured AHTN in Minnesota drinking water, groundwater, wastewater and surface water. AHTN was found in 18.7 percent of all water samples in this study.¹

What is the MDH guidance value for AHTN in drinking water?

Based on available information, MDH developed a guidance value of 20 ppb for AHTN in drinking water.³ MDH considers the liver the organ most sensitive to AHTN exposure.

How can I safely use products containing AHTN?

Using fragrance free products will reduce your exposure to AHTN. Some fragranced products will result in higher exposure to AHTN than others. For example, the highest amounts of exposure from AHTN are estimated to be from products that are left on the skin (such as lotions). Lower exposures are estimated for products that are washed off (such as shampoos). People are exposed to smaller amounts of AHTN from cleaning products than from personal care products.

At a Glance

AHTN is...

- a musky fragrance used in cosmetics, personal care products (shampoo, lotion) and cleaning products (soap, laundry detergent).

AHTN enters your body...

- primarily through the use of personal care products and cleaning products.

Your exposure to AHTN can be reduced by....

- using fragrance free products.

AHTN in drinking water is safe if...

The level is lower than the MDH guidance value of 20 ppb.



Can AHTN in drinking water affect my health?

AHTN has not been found in treated drinking water in Minnesota. The amount found in untreated drinking water (0.065 ppb) is about 300 times lower than the MDH guidance value of 20 ppb. If you drink water containing up to 20 ppb AHTN for up to a lifetime there is little to no health risk, even to your liver.

How does AHTN get into the environment?

AHTN is washed down the drain when people use personal care and cleaning products containing fragrances. Septic systems and wastewater treatment do not remove all of the AHTN. Therefore, some AHTN remains in wastewater. Wastewater contaminants, such as AHTN, can move into sources of water that may be used for drinking.

How long does AHTN stay in the environment?

Once AHTN is in the environment it tends to stay in the environment; it does not readily break down. AHTN in water or moist soil is likely to attach to sediment in the water or stay attached to soil.⁴ AHTN can build up in fish or other animals in the food chain.^{5,6}

What are the potential environmental impacts of AHTN?

AHTN may be an “endocrine active chemical” in fish.⁷ This means that AHTN may have the same effect as a hormone in fish and change the way they grow, develop, and reproduce. Although AHTN may not affect fish immediately, but at low concentrations it may change their normal growth and functioning.⁸ AHTN does not appear to cause these effects in mammals.

The Contaminants of Emerging Concern (CEC) Program...

Evaluates health risks from contaminants in drinking water.

References

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