

HBCD Screening Profile

1,2,5,6,9,10-Hexabromocyclododecane (HBCD) is a contaminant that may be present in potential drinking water sources in Minnesota. The information in this profile was collected for the screening process of the Minnesota Department of Health's Contaminants of Emerging Concern (CEC) program in February 2014. The chemicals nominated to the CEC program are screened and ranked based on their toxicity and presence in Minnesota waters. Based on these rankings, some chemicals are selected for a full review. CEC program staff have not selected HBCD for a full review.

HBCD Uses

HBCD is a chemical used in consumer products and building materials, such as insulation, to slow the spread of fire. A recently enacted Minnesota statute prohibits the manufacture, sale, and use of HBCD and three other flame-retardant chemicals in certain children's products and upholstered residential furniture.¹

HBCD in the Environment

HBCD can be released into the environment when it is produced and when products containing it are used and disposed of in landfills. HBCD is relatively persistent, remaining in the environment for months to years.

HBCD is not being monitored for in Minnesota waters at this time. Because of the chemical properties of HBCD, the risk of groundwater contamination is probably low. HBCD is more likely to stay in soil than to move to groundwater.²

HBCD is toxic to aquatic organisms and builds up in tissues of animals.³

Exposure to HBCD

Exposure to HBCD is more likely to come from household dust, consumer products, or contaminated food, than from drinking water.

When exposed, HBCD accumulates in human and animal tissues. HBCD has been found in the breastmilk, fat, and blood of humans.³

Children may have higher exposure to HBCD from crawling on the floor or drinking contaminated breastmilk.

Potential Health Effects

In animal studies, exposure to HBCD caused harmful effects on the thyroid, as well as hormonal, behavior, and development changes in infants.^{2,3}



A full review of HBCD may be possible; however, it is ranked lower than other nominated CEC chemicals at this time.

References

1. Minnesota Statute Chapter 62- S.F. No. 1215. 2015. Flame-Retardant Chemicals Prohibition. <https://www.revisor.mn.gov/laws/?year=2015&type=0&doctype=Chapter&id=62>
2. Government of Canada. 2010b. Screening Assessment of Hexabromocyclododecane. <http://ec.gc.ca/toxiques-toxics/default.asp?lang=En&n=58F1CC80-1>
3. U.S. Environmental Protection Agency. 2010. HBCD Action Plan. <http://www2.epa.gov/assessing-and-managing-chemicals-under-tsca/hexabromocyclododecane>

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Contaminants of Emerging Concern Program

Chemical Review Process

The Contaminants of Emerging Concern (CEC) program investigates the potential health concerns of contaminants of emerging concern in drinking water. This investigation includes a rapid assessment ('screening') to prioritize nominated chemicals for in-depth research and evaluation that result in drinking water guidance and information about exposure.

Chemical Nomination and Eligibility

Minnesota risk managers, stakeholders, and the public are encouraged to nominate contaminants for review. After chemicals are nominated, MDH program staff determine eligibility by examining the likelihood that the chemical will enter Minnesota waters and whether adequate guidance already exists.

Screening and Risk Based Selection

Program staff conduct a screening of where and how a contaminant is used in the state, its potential to enter the water supply, and its potential to harm humans. The results from the screening are used to prioritize nominated chemicals.

Chemicals having higher exposure and harm potential are selected for in-depth review and development of guidance (a contaminant water concentration that is not harmful to people). Chemicals that rank lower remain candidates for future in-depth review. For some contaminants, however, the information is too limited. For chemicals that are not selected for in-depth review, the results of the screening assessment are summarized in a Screening Profile. The screening and prioritization process is repeated as additional chemicals are nominated and screened.

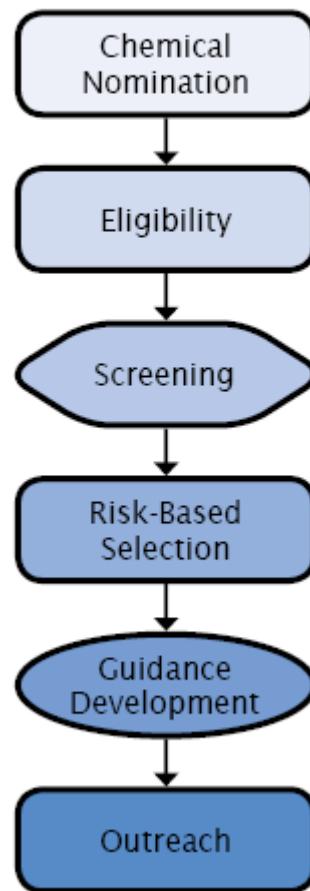
Guidance Development

When a chemical is selected for a full review, program staff carefully review exposure and toxicological information to understand how humans may be exposed and what adverse health effects occur from exposure. Staff combine the results of in-depth analyses of toxicity and exposure to calculate a guidance, a level of contaminant in water that causes little to no harm to someone drinking the water.

Outreach

CEC program staff work to communicate the results of the chemical review process. This includes making key findings publicly available on web pages and at a variety of meetings and events. An email subscription service (GovDelivery) is also used to alert the interested public (subscribers) of chemical review activities and guidance values.

Chemical Review Process



Subscribe to the CEC Program GovDelivery service to receive notification when reviews are initiated for water contaminants and other announcements by visiting:

<http://www.health.state.mn.us/cec>