

DADMAC and PolyDADMAC Screening Profile

Diallyldimethylammonium chloride (DADMAC) and Polydiallyldimethylammonium chloride (polyDADMAC) are contaminants 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 August 2013. 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 DADMAC and polyDADMAC for a full review.

DADMAC and PolyDADMAC Uses

PolyDADMAC is a polymer manufactured from DADMAC. PolyDADMAC is often used to help remove suspended particulates from water. DADMAC has no direct uses, but may be present when polyDADMAC is used.

PolyDADMAC is used in:

- Wastewater treatment
- Paper making
- Textile printing
- Silica sand mining

DADMAC and PolyDADMAC in the Environment

DADMAC and polyDADMAC may enter the environment through use in wastewater treatment plants. DADMAC and polyDADMAC are not being monitored for in Minnesota waters at this time.

Once in the environment, DADMAC is predicted to stay in water and soil for less than 60 days.^{1,2} There is not enough information available on polyDADMAC to predict how long it may stay in the environment.

DADMAC is not expected to be toxic to fish or other wildlife. DADMAC is not expected to build up in the tissue of fish or other wildlife.¹

Exposure to DADMAC and PolyDADMAC

Exposure to DADMAC and polyDADMAC may occur through drinking contaminated water. It is possible to be exposed to DADMAC and polyDADMAC in occupational settings, including wastewater treatment plants and silica sand mines.

Potential Health Effects

While body weight changes have been seen in laboratory animals exposed to DADMAC and polyDADMAC, there is not enough information at this time to fully evaluate potential health effects of DADMAC or polyDADMAC.

Due to limited information on the toxicity of DADMAC and polyDADMAC, a full chemical review of these chemicals may not be possible.

References

1. U.S. Environmental Protection Agency (EPA). HPV Robust Summary-IUCLID Data Set. <http://www.epa.gov/hpv/pubs/summaries/dialdime/c15208rs.pdf>
2. U.S. Environmental Protection Agency. PBT Profiler. Last Updated September 2012. www.pbtprofiler.net

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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.

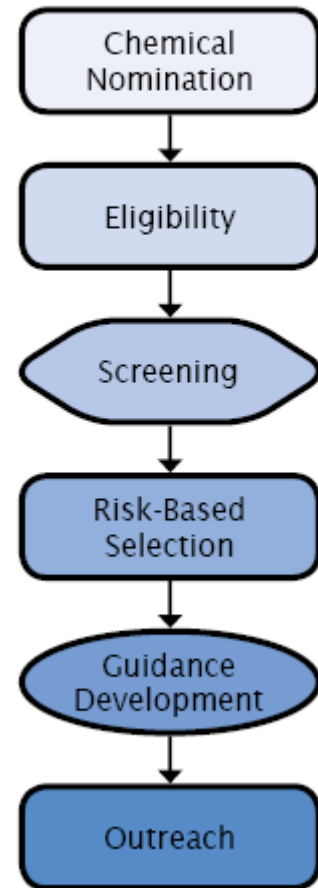
Guidance Development

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>