Minnesota Department of Health

CONTAMINANTS OF EMERGING CONCERN PROGRAM

Chloranil Screening Profile

Chloranil is a contaminant that could potentially affect drinking water in Minnesota. It is a breakdown product of pentachlorophenol, which has been detected in 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 January 2017. 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. Chloranil is unlikely to be selected for a full review.

Chloranil Uses

Chloranil is a chemical used in the process of making chemotherapeutic drugs and some dyes. Chloranil was used as fungicide and seed coating until 1977, when such uses were cancelled.

Chloranil in the Environment

Chloranil likely enters the environment when the chemical is produced or used in an industrial process.[1] Chloranil also enters the environment through the breakdown of pentachlorophenol (PCP).[2] PCP is a wood-treating chemical with very specific uses in some utility poles, piers, and railroad ties.

Chloranil is toxic to aquatic organisms.

Exposure to Chloranil

The human body does not absorb chloranil well. The chemical can enter the body through breathing in particles containing chloranil or ingesting (eating or drinking) the chemical. Chloranil breaks down quickly in soil and water. This quick break down reduces the probability of humans being exposed to amounts of chloranil in the environment that could cause health problems.[3] People who work in industries that use chloranil are most likely to be exposed to the chemical.

Potential Health Effects

Breathing in or touching chloranil can irritate the throat, eyes, and skin.[3] Ingesting toxic doses of chloranil can cause diarrhea, central nervous system depression, a coma, or even death.[1] The U.S. Environmental Protection Agency classifies chloranil as a possible carcinogen. One animal study associates long-term exposure to chloranil with possible development of tumors in the lung and liver.[1]

Based on the screening assessment, a full review of chloranil may not be possible at this time due to a lack of available exposure and toxicity information.

References

1. U.S. National Library of Medicine. Hazardous Substances Database. Searched "chloranil" (https://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB). Accessed January 2017.
2. California Environmental Protection Agency. 1998. PCP Risk Characterization Document (http://www.cdpr.ca.gov/docs/risk/rcd/pentachl.pdf).
3. International Programme on Chemical Safety. 1997. Chloranil (http://www.inchem.org/documents/icsc/icsc/eics0780.htm).

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CLEAN WATER LAND & LEGACY AMENDMENT

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.

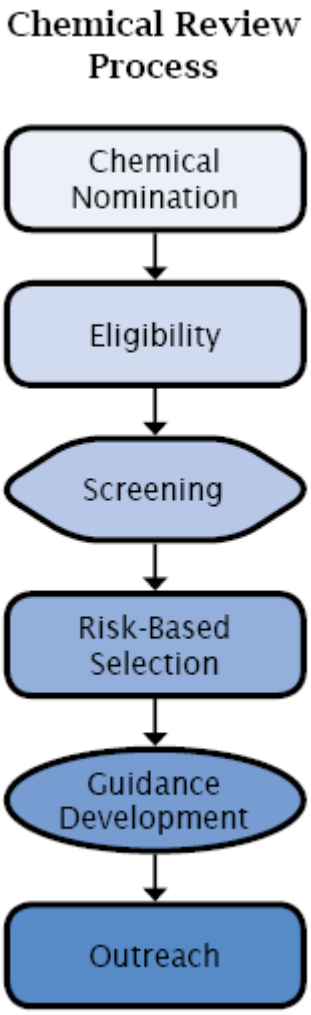
Chemicals having higher exposure and harm potential are selected for in-depth review and development of guidance (a contaminant water concentration that is not harmful to people). Chemicals that rank lower remain candidates for future in-depth review. For some contaminants, however, the information is 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.



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