

CHLORAMINES-RELATED RESEARCH

19) What is EPA's current focus regarding chloramines research¹? What other ongoing research is EPA aware of?

The current focus of EPA chloramines research is on determining disinfectant effectiveness, the effects of disinfection, and [disinfection byproduct formation](#).¹

- Evaluating the effectiveness of disinfectants, including monochloramine, is a focus for EPA's chloramines research.²
- Research is targeted at understanding the various effects that may be caused by disinfectant use, such as byproduct formation.³
- EPA supports research on evaluating potential treatment technologies that can reduce effects sometimes caused by disinfectant use.

Results from past and ongoing research indicate [monochloramine](#) use at regulated levels can be a safe means for disinfecting drinking water.

- Several large cities such as Denver and Philadelphia have used monochloramine successfully as part of their water treatment process for decades.
- Research shows that monochloramine produces fewer potentially harmful *regulated* disinfection byproducts than chlorine.⁴
- EPA reviews and considers new research results as they become available.⁵

Many organizations support research on the safety of monochloramine use.

- Academic institutions and water industry groups conduct research on monochloramine use.⁶
- CDC has investigated community concerns related to monochloramine use.⁷
- EPA continues to work with other organizations on research related to the safe use of monochloramine.

Additional Supporting Information:

1. More information on the EPA Drinking Water Research Program can be found at

<http://www.epa.gov/ord/npd/dwresearch-intro.htm>.

2. Research includes studying the effectiveness of chloramines at controlling potentially harmful organisms under different source water and treatment options. See question [3](#) for more information on potentially harmful organisms.

3. Efforts include improving the understanding of the various effects that may be caused by the use of disinfectant(s) or mixed disinfectants on water properties, such as the formation of disinfection byproducts, the release of contaminants, including lead into water, and biofilm activity, including nitrification. See question [27](#) for additional information on contaminant release, biofilms, and nitrification.

4. Compared to chlorine, water treated with monochloramine may contain different *unregulated* disinfection byproducts than chlorinated water. There are few studies on health effects of unregulated disinfection byproducts. For example, TTHMs and HAAs (see question [6](#) for more information) typically occur at higher levels than other known and known but unidentified disinfection byproducts. The presence of TTHMs and HAA5 is representative of the occurrence of many other chlorinated disinfection byproducts; thus, a reduction in TTHMs and HAA5 generally indicates a reduction of other types of disinfectant byproducts. Information on one unregulated byproduct associated with chloramination, NDMA, can be found at <http://www.epa.gov/tio/download/contaminantfocus/epa542f07006.pdf>. Also, see question [9](#) and [23](#).

5. See the Contaminant Candidate List online at <http://www.epa.gov/OGWDW/ccl/ccl3.html> for contaminants EPA proposes to review. EPA scientists review regulations of disinfection byproducts every six years.

(<http://epa.gov/safewater/review.html>). EPA is currently monitoring for several unregulated disinfectant byproducts (NDEA, NDMA, NDPA, NPYR). More information can be found at <http://www.epa.gov/safewater/ucmr/index.html>.

6. The Water Research Foundation (WRF) is an example of a group that conducts water industry research.

7. A federal partner of EPA is the Center for Disease Control and Prevention (CDC). The CDC Chloramines Vermont Trip Report can be found at http://healthvermont.gov/enviro/water/documents/CDC_Chloramines_report_011608.pdf.