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Overview of Methyl Tertiary Butyl Ether (MTBE) Detections in Public Drinking Water Supplies in the United States.

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Abstract

We provide a review and summary of methyl tertiary butyl ether (MTBE) water monitoring data that have been collected as part of national, multi-state, and state-wide assessments in the United States. Specifically, we summarize the key attributes of 24 publicly available studies or data sets and characterize the detection frequency and detected concentrations of MTBE for different water types based on these studies. The original sampling data from each study were obtained and independently analyzed wherever possible. For each study, the detection frequency of MTBE was calculated assuming any concentration above the reporting or analytical limit of detection and at three different concentrations (1, 5, and 20 μg/L). Detected concentrations of MTBE were based on all reported drinking water samples and were computed using summary statistics such as the median, mean, range, and distribution percentiles. The primary focus of this assessment is on MTBE detections in public drinking water served by groundwater or surface water, although several published studies also contain sampling data from domestic (private) drinking water wells. Some non-drinking water data sets (e.g., sampling data from ambient groundwater) are also included because it was not always possible to identify or separate these data by water type due to the manner in which they were coded or reported. These latter studies therefore contain some sampling data that are not informative for assessing MTBE drinking water exposures to consumers.

Keywords: MTBE, oxygenate, groundwater, drinking water