

**Andrzejewski, P., Dabrowska, A., Fijolek, L., Szweda, F. Dimethylamine as a Precursor to N-nitrosodimethylamine and Formaldehyde in Water. *Ochrona Srodowiska* 2011, Vol. 33, No. 3, pp. 25–28.**

**Abstract:** The quantities of formaldehyde (FA) and N-nitrosodimethylamine (NDMA) generated in the reaction of chlorine dioxide with the aqueous solution of dimethylamine (DMA) were assessed. Consideration was also given to the problem of how the DMA oxidation products may affect the potential of NDMA formation in the course of the chlorine dioxide oxidation process. It has been demonstrated that DMA is a precursor to at least two oxidation by-products (FA and NDMA), whose concentrations in the water intended for human consumption are subject to regulations. The comparison of molar conversions of DMA to FA and NDMA with their permissible values for water shows that of the two by-products NDMA is far more hazardous. The presence of DMA detected in the Warta river water (5 to 6 mg/m<sup>3</sup>) suggests potential risk that FA and NDMA will form when the treatment train involves strong oxidizers such as chlorine dioxide. It is essential to note that the treatment process applied impacts on the DMA content of the water, and thus increases or reduces the risk of generating both the oxidation by-products.

**Keywords:** Dimethylamine, dimethylhydroxylamine, methylhydroxylamine, N-nitrosodimethylamine, formaldehyde, chlorine dioxide.