عنوان مقاله:

Determination of Biocide-type Disinfectants in Water Condensates Originating from Cleaning Chemicals with Capillary Electrophoresis

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خلاصه مقاله:

The commonly used polymeric disinfectants, didecyldimethylammonium chloride (DDAC) and polyethylene glycolmonoalkyl ether (GEN) can drift with water vapor and aerosols, although they are not volatile. When being in aerosols, the amines of them have justified to irritate respiratory organs of humans. But, when not being in breading air they stay on surfaces due to absorption and accumulation when temperature and moisture of the environment are low.The paper presents a new approach to determine disinfectants in alkaline tetraborate solution using capillary electrophoresis with direct UV detection. DDAC and GEN were investigated to move from surfaces to aerosol. The studied compounds were quantitatively analyzed at low concentrations (۱-۱۰ ng mL-۱ with RSD ۲%) to prevent micelle formation and to guarantee the method specificity. The limits of detection and quantification were ۰.۰۰۶ and ۰.۰۱۸ ng mL-۱, and ۱.۰ and ۳.۸۴ ng mL-۱ for DDAC and GEN, respectively. They both were studied from ۴۶ samples collected from two school environments which were daily washed with the commercial chemicals. The results showed that concentrations of these biocide-type disinfectants were between ۲.۵ - ۱۰۲۹ ng mL-۱.

کلمات کلیدی:

Disinfectants, Capillary electrophoresis, Complexation, Water condensates