

Contributions of silane cross-linked PEX pipe to chemical/solvent odours in drinking water.

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A commonly used plastic plumbing pipe, silane-cross-linked polyethylene (PEX-b according to European standards), was investigated using the Utility Quick Test (UQT), which is a migration/leaching protocol recommended for evaluating taste-and-odour properties of materials prior to installation in distribution systems. After exposure of new PEX pipe to chlorine, monochloramine or no disinfectant, the odours in the leachate were described as "chlorinous" if chlorine or monochloramine were present and "chemical/solvent-like" with descriptors of sweet, bitter, chemical, solvent, plastic, burnt and mechanical/motor oil. The presence of disinfectant, chlorine or chloramines, did not alter the odour characteristics or intensity of the PEX odour. The "chemical/solvent-like" odours persisted even after multiple flushing periods. 2-Ethoxy-2-methylpropane, commonly called ETBE, was identified as a contributor to the described odour from the PEX pipe. Aqueous concentrations of ETBE in pipe leachate ranged from a low of 23 microg/L to > 100 microg/L. The concentrations decreased with increased flushing. Panelists were able to smell ETBE at a concentration of 5 microg/L and assigned a rating of a weak odour. The need for taste and odour testing of plumbing materials prior to use in residential housing systems is necessary.