

Position Paper

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Polyethylene drinking water pipes and sealing elements in contact with chlorinated disinfectants

Polyethylene (PE) pipes have been used worldwide for potable water distribution for around 50 years contributing significantly to the preservation of this precious resource and the establishment of sustainable water management programmes.

The plastics industry remains committed to delivering pipes for drinking water applications according to the highest national and European standards. Different disinfectant systems are currently used in Europe. The most common ones are chlorinated disinfectants, usually sodium hypochlorite and gaseous chlorine. A less commonly used disinfectant is chlorine dioxide.

Several investigations have been carried out to evaluate the possible impact of chlorine disinfectant based on sodium hypochlorite or gaseous chlorine on PE pipes. These water disinfectants, under standard conditions of concentrations, do not affect the fitness for purpose of PE pipes used in drinking water distribution. One of the latest studies, conducted by an independent institute has confirmed that, even under severe test conditions, the lifetime expectancy of PE pipes with chlorinated water is far beyond 50 years.

Of the lesser used chlorine based disinfectants specific guidance cannot be given concerning the use of chlorine dioxide, as there is limited experience and knowledge available about the impact and long-term effects it may have in relation to the life expectancy of PE pipelines and their sealing elements.

As investigations of the effect of chlorine dioxide on PE pipe systems are still being carried out, we cannot give any recommendation to what extent this disinfectant can be used at present time.

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