



Introduction

Today, rubber materials (ancilleries) are widely used in water distribution systems. A potential problem with rubber materials is that the possibility exists that odour and taste-causing organic compounds from the rubber material may leach into drinking water and may result in odour and/or taste problems.

To avoid odour and flavour problems all rubbers used in distribution systems have to be certified before it may be sold. The certification is based on the NEN-norms NEN-EN 1420-1 and NEN-EN 1622:2006. An odour and flavour panel tests a defined dilution of drinking water that has been in contact with rubber. Based on the panel results a rubber is accepted or rejected.

Importance

This report compares the results of an electronic nose and/or electronic tongue with the obtained results by an odour & flavour panel.

The aim is to investigate the ability of the electronic systems to reduce the number of panel tests. The results support the decision of use of online electronic noses and -tongues for water quality control at different places in the chain from source to tap.

Approach

This report compares results obtained with an electronic tongue, electronic nose and an odour and flavour panel for non-concentrated aqueous samples. Samples were prepared by bringing rubbers in contact with drinking water which are subsequently tested by an odour and flavour panel, an electronic nose and electronic tongue.

Result

The results obtained show a moderate to good correlation between the panel results and electronic methods.

It is foreseen that in the future electronic nose and tongue systems can reduce the number of panel tests, and even be implemented at vendors factories to perform quality control during production. The authors do not foresee that the instruments will fully substitute the odour and flavour method.

More information

Extensive description of the research performed can be found in the report "Odour & Flavour tests: Human panel and electronic testing compared", Deliverable 3.4.6.

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