

Properties of vortex processed water

An examination of the properties of vortexed water was made in **2010 and 2011 by the Polymer Technology Group Eindhoven BV (PTG/e)**, an independent research and knowledge institute which is part of the Eindhoven University of Technology (TU/e). Samples were taken from municipal water in Holland, before and after VPT treatment. Water treatment was made with a standard Watreco vortex generator at a water pressure of 3.5 bar.

Viscosity

A decrease in viscosity was observed by PTG/e after VPT treatment. The difference was between 3% and 17%, depending on water quality and temperature. As shown by Albert Einstein in 1905, gas bubble content affects the viscosity of water. As bubbles (undissolved gases) are removed, a decrease in viscosity can therefore be expected.

Heat transfer

VPT treatment changed the melting behavior of ice. The heat capacity was 5% higher for ice and 3% higher for liquid water.

Electrical conductivity

There was an increase by 3% in electrical conductivity after VPT treatment in the PTG/e study. This can be due to either changes in viscosity or a change in the properties of charged particles and/or ions in the water.

Surface tension

Even though viscosity is reduced by VPT treatment, changes in surface tension were not observed by PTG/e.

Summary

Watreco's Vortex Process Technology is a multi-purpose technical platform with applications in many areas. Based on natural processes, it has no moving parts and reduces or eliminates the need for chemicals and maintenance.