

Ozone Measurement Technology in Pure Water Systems

David M. Gray and Marc St. Germain

Product Management

Mettler-Toledo Thornton, Inc.

Abstract

Ozonation is an effective technique for sanitizing ultrapure water and treatment systems and was introduced in the Semiconductor industry over 25 years ago[1]. With no permanent addition of material, unlike other chemical oxidants, its powerful oxidizing properties make ozonation an ideal treatment method. To assure adequate treatment levels as well as its removal downstream, measurements of dissolved ozone concentration are an essential part of the process.

Described here is a unique combination of dissolved ozone measurement technology and instrumentation that boosts the performance, reliability and maintainability of equipment for this specialized measurement. The theory of sensor operation as well as its benefits and limitations under various conditions are covered. Associated multi-parameter instrumentation enables the combination of ozone with other important measurements such as resistivity, conductivity, TOC, pH, flowrate and dissolved oxygen.