

ChemScan[®]

PROCESS ANALYZERS

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ChemScan[®] Method Summary

#157

Ozone in Water

Background

Ozone is a powerful oxidizing agent used for disinfection and also for color removal, oxidation of dissolved metals and taste/odor improvement of drinking water. Ozone is capable of reacting with a wide variety of organic and inorganic solutes in water. Aqueous ozone can rapidly decompose into the hydroxyl radical under high pH conditions and in the presence of peroxide or uv light.

Standard laboratory methods measure ozone in water through the color change in a known amount of dye added to the sample. Rapid analysis is necessary and also correction for any chlorine that may be present in the sample.

ChemScan Analysis Method

Ozone will strongly absorb light in the germicidal wavelength range. In samples that are free of possible contamination from dissolved metals or chlorine, measurement of absorbance at 254 nm can provide an accurate measurement of ozone concentration, assuming that the measurement is corrected for turbidity. This can be performed continuously by the ChemScan UV-0254 analyzer and also by any of the ChemScan full spectrum analyzers. The full spectrum analyzers also would allow for correction based on compensation for dissolved metals and halogens. This correction can be photometric such as performed by the UV-3150 or a combination of chemical and photometric such as performed by other ChemScan UV series analyzers.

Any on-line analysis of ozone requires short sample line distance, careful selection of materials in contact with the sample and rapid analysis for best results.