

Benzotriazole and Tolyltriazole

For water

Ultraviolet Digestion Method

Introduction

Benzotriazole and tolyltriazole (BZT and TTA) are used extensively as corrosion inhibitors for copper alloys. In both open and closed recirculating water cooling systems, concentrations of 2 to 10 mg/L provide effective corrosion control after initial passivation



Figure 1 Chemical procedures

The Hach method for BZT and TTA determinations offers substantial improvements over conventional analytical methods. Time-consuming conventional methods, such as ultraviolet (UV) spectroscopy, liquid chromatography and potentiometric titration, require expensive equipment and highly skilled personnel. The Hach method uses simple, inexpensive equipment and can be performed in less than 10 minutes without loss of accuracy or precision. The analysis range is 0–15 mg/L at a wavelength of 425 nm.

Chemical reactions

This method of analysis is based on the UV-photolysis of triazole in the presence of a chemical catalyst to form a dimer or polymer of the triazole. A stoichiometric amount of a soluble yellow-colored compound is then formed. The calibration follows Beer's Law throughout the 0–15 mg/L concentration range, with an estimated detection limit of approximately 0.3 mg/L

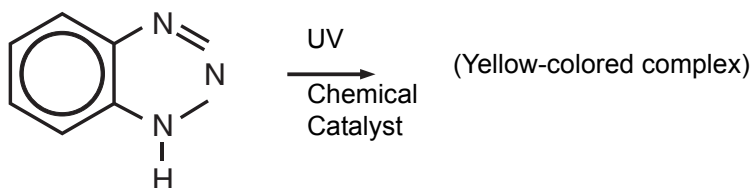


Figure 2 Chemical reaction