Corrosivity of Chlorine Dioxide Used as Sanitizer in Ultrafiltration Systems

H.F. Bohner, R.L. Bradley
Department of Food Science, University of Wisconcin-Madison, Madison 53706-1565

https://doi.org/10.3168/jds.S0022-0302(91)78523-8

Abstract

Chlorine dioxide is a very potent sanitizer in UF systems and other applications in which soil residues are frequent. Two sanitizers containing chlorine dioxide as the active ingredient were examined for their potential of corroding stainless steels used in the construction of UF systems. One sanitizer was an acidified solution of dilute sodium chlorite at pH 2.7; the other sanitizer was dilute chlorine dioxide (about 15 ppm) in tap water. Stainless steel types 304 and 316 corroded rapidly when exposed to the acidified chlorite solution. Chlorine dioxide near neutral pH 7.2 was noncorrosive to both type 304 and 316 stainless steels at a concentration of 100 ppm during 10 d of continuous exposure. This concentration is well above the typical use Concentration of 15 ppm; typical use time span is 15 min.

Key words:
chlorine dioxide, ultrafiltration