Studies on Activation Characteristics and Effects on the Stability of Several Flavor Compounds of Chlorine Dioxide Powde

謝易達、游銅錫

E-mail: 9806852@mail.dyu.edu.tw

ABSTRACT

Chlorine dioxide is a chemical disinfectant . It can directly contact with food and drinking water. Chlorine dioxide have advantages batter than other bactericidal products, and have wide range of applications.

The thesis use titration methods to analysis of the chlorine dioxide concentration in aqueous solution. The concentration determination of chlorine dioxide was depended on Spectrophotometer and correlated with titration methods. The linear regression equation can use to estimate the concentration of chlorine dioxide.

The first part of this thesis was to determine the rate of activation of chlorine dioxide powder products in water. The results showed that at dark environment chlorine dioxide degradation rate can be reduced in water. Chlorine dioxide volatility rate is higher than degradation rate in water. Reduction the activation concentration of powder products can effectively slow down the degradation and evaporation rate. Change in activation pH of chlorine dioxide powder products is subject to degradation rate of impact.

The second part of this thesis was to study the storage stability of chlorine dioxide powder in packages with different film combination. Due to reduction of humidity in vacuum package storage make effect of water not easy to humidify powder as to have better storage self life. It is recommended that a single film material of PE is good for the storage of chlorine dioxide powder. Mixed packages were found to degrade the adhesive material by chlorine dioxide powder products.

The third part of this thesis was to find the appropriate flavor compounds for add to chlorine dioxide powder for the aroma. Comparisons of overall test results, revealed eugenol has stable characteristics with chlorine dioxide. It ’ s mean that we can choose eugenol as flavor compounds for chlorine dioxide powder products.

Keywords : Chlorine dioxide、aromatic chemical、Fragrance compounds、Perfumery isolates、Accelerated storage procedure

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