

**A study on the Establishment of the Specifications,
Especially the Determination Method, of Sucralose as a Food Additive**

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Abstract

Sucralose (4,1',6'-trichlorogalactosucrose) has been used in many countries as a sweetener, and was permitted as a food additive in Japan in July, 1999. Prior to the permission of the compound as a food additive, we studied procedures for the quantitative analysis of sucralose by a potentiometric titration method.

The following method was established: weigh accurately about 1 g of the sample, transfer into a flask with a ground stopper, and add water to make exactly 100 ml. Measure accurately 10 ml of this solution into a 50-ml flask, and add 10 ml of sodium hydroxide solution (1→10), equip with a reflux condenser to the flask, and boil gently for 30 min. Cool this solution to room temperature, and neutralize it with diluted nitric acid (10%). Titrate the liberated chloride in this solution with 0.1 mol/l silver nitrate solution using potentiometer equipped with an electric indicator (Ag) and a reference electrode (Ag-AgCl). Perform a blank test, make necessary correction, and calculate on the anhydrous basis.

When determination of sucralose was carried out by this method, the data were reproducible and the coefficient value was 0.4% on repeated runs. This method can be adapted for automatic potentiometric titration, and is simple, rapid and accurate. It should be useful for the determination of sucralose.