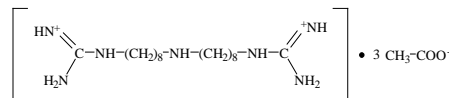


Analysis of Iminoctadine Triacetate in Drinking water by Post-column HPLC

This note describes a determination method for iminoctadine triacetate using an HPLC equipped with a post-column derivatization system.

Iminoctadine is a type of guanidine fungicide and contained in agricultural chemicals. However, it is indicated that iminoctadine causes severe hypotension in acute oral poisoning. In Japan, a target value for iminoctadine triacetate residues in tap water was set at 0.006 mg/L by the Ministry of Health, Labour and Welfare. In this note, analysis of iminoctadine triacetate was carried out in conformity with the regulated method.

Chemical structure

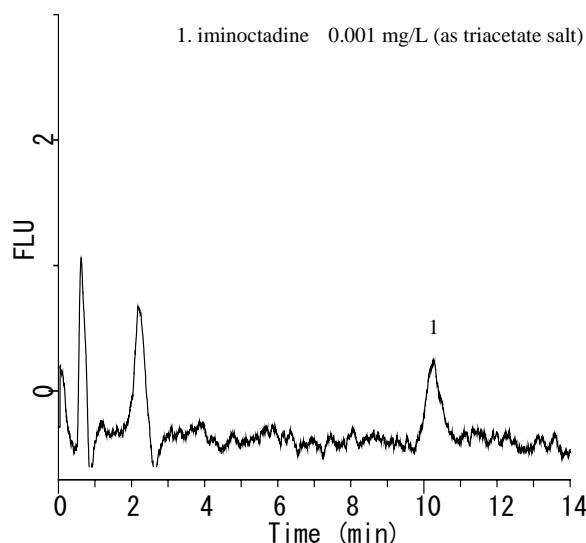
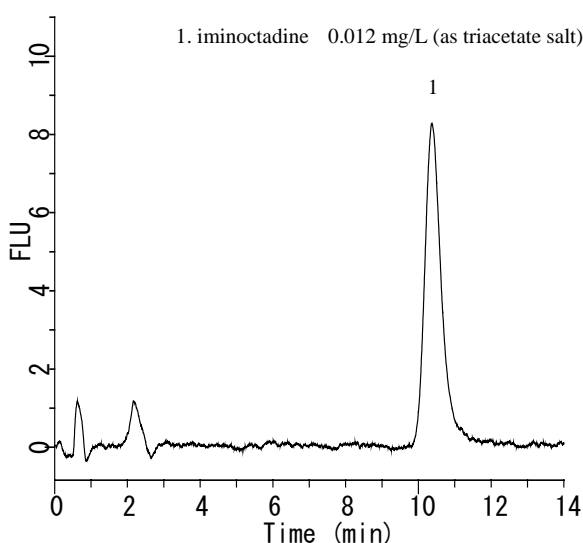


Iminoctadine triacetate

Structures are created using Chemistry 4-D Draw which is provided by ChemInnovayion Software, Inc.

Chromatograms obtained from standard solution

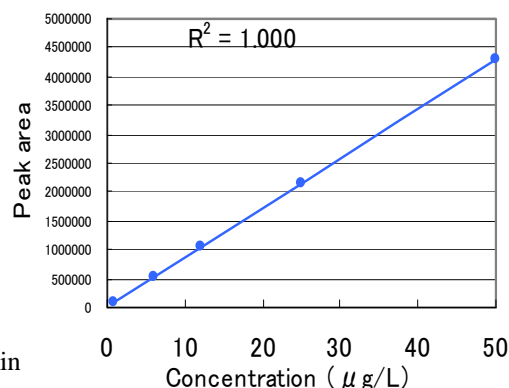
In the quality control of Japanese pesticide analysis, it is required that the coefficient of variation (C.V.) at one-hundredth concentration of the target value is less than 20%. Since iminoctadine in sample solution is 200-times concentrated by solid-phase extraction in the sample pretreatment, C.V. value lower than 20% should be offered when 0.012 mg/L iminoctadine solution is injected into an HPLC system. **At the concentration (0.012 mg/L), 2.8% was obtained as C.V. value (n=5).** Furthermore, C.V. at 0.001 mg/L was calculated to be 10%. Inertsil ODS-3 column enables to determine iminoctadine with high sensitivity and precision.



Conditions

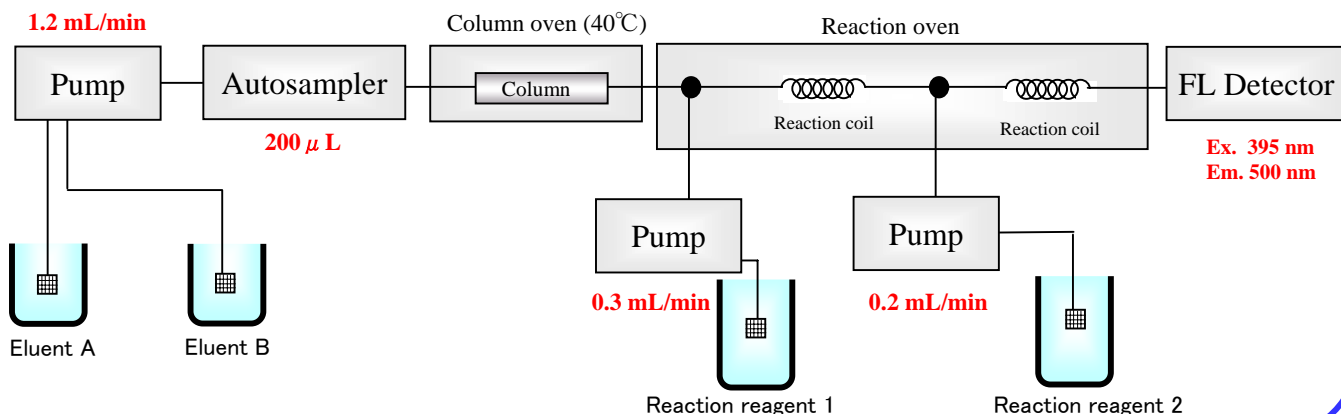
Column	: Inertsil ODS-3 (5 μ m, 150 x 4.6 mm I.D.) Cat.No. 5020-01731
Eluent	: A) CH ₃ CN B) Perchlorate buffer * A/B = 5/17, v/v
Flow rate	: 1.2 mL/min
Column Temperature	: 40 °C
Detection	: FL Ex. 395 nm, Em. 500 nm
Injection Volume	: 200 μ L
Reaction Reagent 1	: 0.5 mol/L NaOH aqueous solution, 0.3mL/min
Reaction Reagent 2	: 0.3 g/L Ninhydrin solution, 0.2 mL/min

*Perchlorate buffer: To 14.1 g of sodium perchlorate, 400 mg of sodium hydroxide and 1.8 mL of lactic acid were added and made up to 1 L with water.



The calibration curve

A diagram for the HPLC system

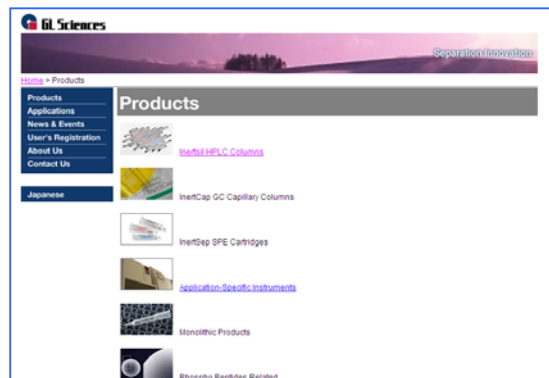


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