



UH5300

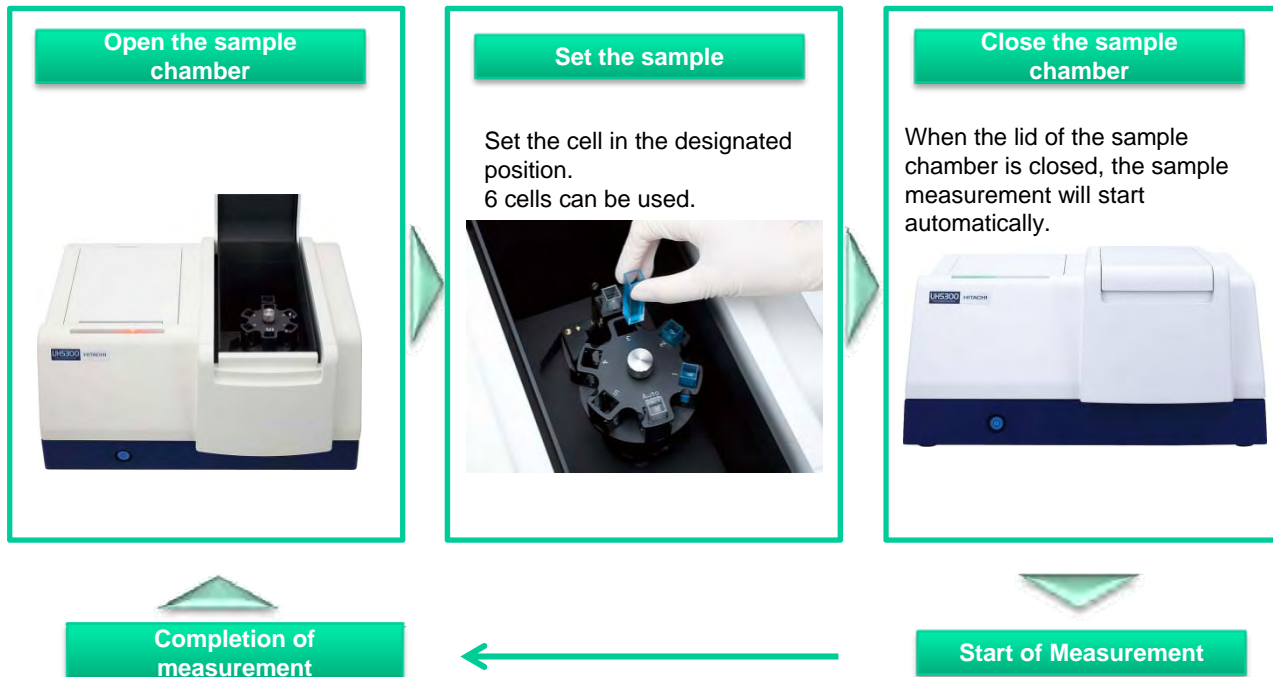
Analysis of Cr (VI) in Trivalent Chromate Coating Film with UH5300

INTRODUCTION

The standard installation of UH5300 spectrophotometer includes an automatic 6-cell turret. When analyzing many samples, the increased work efficiency can be expected by using the “intelligent Start” function. UH5300 spectrophotometer also focuses on the absorbance differences between cells. All cells are measured for the auto-zero values, which are recorded as the correction values. Therefore, the instrument is capable of handling the analysis where a slight absorbance difference is being measured. This time, Cr(VI) in water samples was analyzed by using this function. As a result of the analysis, a calibration curve with a high correlation coefficient ($R^2 = 0.9999$) was obtained.

METHOD		PREPARATION
Analyte	: Cr(VI)	Sample 25 mL ← Add reaction reagent R-1 (*1) Stir ← Let stand for 5 min Solution for measurement Temperature: Room temperature *1 Kyoritsu Chemical Check Lab., Corp. Reagent Set for Water Analyzer No.31 Cr ⁶⁺ ** Contact Kyoritsu Chemical Check Lab. Corp. for the information including the effects of the interfering substances and the details of the reagents.
Analysis method	: Diphenylcarbazide absorptiometry (Simple analysis by using a water quality test kit of Kyoritsu Chemical Check Lab., Corp.)	
Reagent	: Water quality test kit No.31 Cr ⁶⁺ , Kyoritsu Chemical Check Lab., Corp.	
Range of quantitative analysis	: 0.02 - 1.0 mg/L Refer to JIS K0102 65.2 for the official method	
ANALYTICAL CONDITIONS		
Instrument	: UH5300	Slit : 1 nm
Scan speed	: 400 nm/min	Measurement wavelength : 542 nm

High throughput measurement by “intelligent Start” function



- When the sample cell is set and the sample chamber is closed, the measurement will start automatically. (Patent pending: Patent application No. 2012-181302)
- The starting operation after switching the sample cells is omitted.

KEY WORDS

Electronics/Semiconductor Related, Other Electronics/Semiconductor Related, Environmental Chemistry, Environment, Cr(VI), Absorption Spectrum, Calibration Curve, Coloring Reagent, Hexavalent Chromium, UV, UH5300, U-5100, U-2900, U-2910

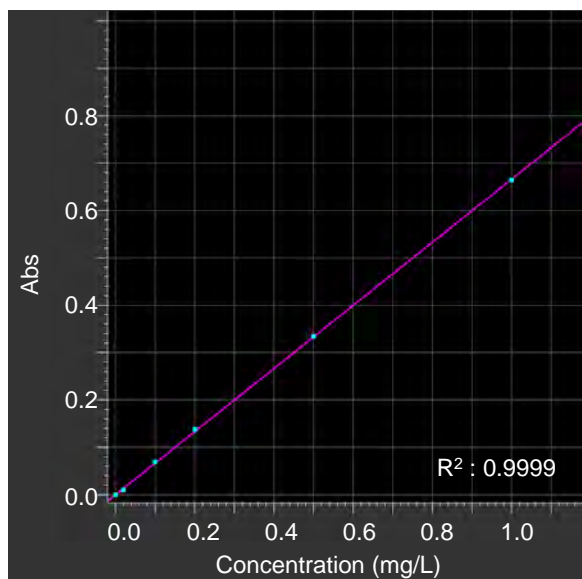
Spectrophotometer (UV)

Sheet No. UV120005-01

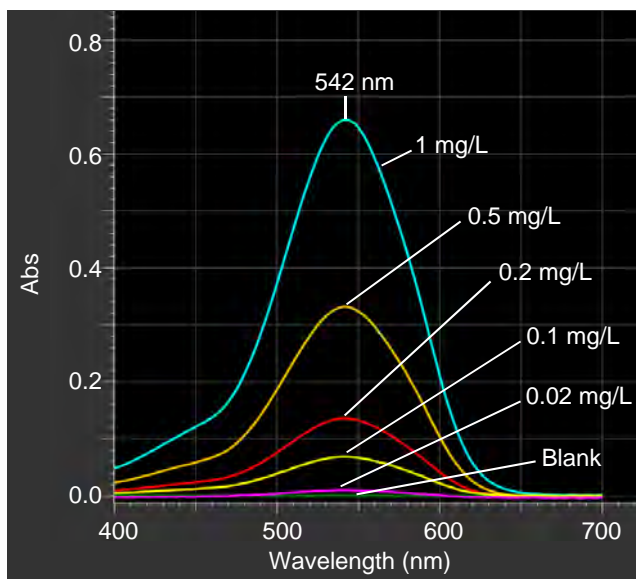


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Calibration Curve of Cr (VI)



Absorption Spectrum of Cr (VI)

Addition Recovery Test for Extract

Extract	Extract + 0.5 mg/L	Recovery rate
0.16 ± 0.002	0.69 ± 0.003	$105.6 \pm 0.6 \%$

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Spectrophotometer
(UV)

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