

VA Application Note No. V - 115

Summary: Sb is determined in polyethylene terephthalate (PET) after digestion in sulfuric acid and hydrogen peroxide. The

application is carried out with anodic stripping voltammetry

(ASV) in hydrochloric acid.

Sample: PET pellets

Sample preparation: 250 mg sample

2 mL w(H_2SO_4) = 96 % suprapur

are put into a flask of the digestion apparatus and heated

to 250°C.

1 mL w(H_2O_2) = 30% suprapur is added through a

dropping funnel. The mixture reacts intensively. Another 1 mL H_2O_2 is added. After the 2^{nd} addition the mixture was heated to 400° C until SO_3 fumes are formed. After cooling

down the solution was filled up to 100 mL.

Analysis of Sb

Electrolyte w(HCI) = 30 % suprapur

Measuring solution 5 mL water

+ 100 µL digestion solution

+ 5 mL w(HCI) 30%

Auxiliary electrode (AE) Pt

Reference electrode (RE) Ag/AgCI/KCI (3 mol/L)

Parameters

 	
Working electrode	HMDE
Stirrer speed	2000 rpm
Mode	DP
Purge time	300 s
Deposition potential	-300 mV
Deposition time	30 s
Equilibration time	5 s
Pulse amplitude	50 mV

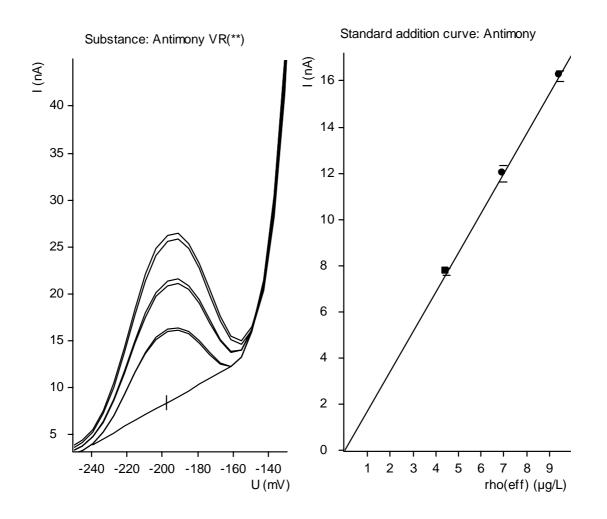
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	Start potential	-300 mV
	End potential	-70 mV
	Voltage step	6 mV
	Voltage step time	0.1 s
Sweep rate	Sweep rate	60 mV/s
	Peak potential Sb	-200 mV

Results:	Sb
	158 µg/g

Determination of Sb



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