

THE ESTIMATION OF LEAD BY THE TITRATION OF LEAD CHROMATE.

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The first experiments were made to test the accuracy of the method. Weighed amounts of pure lead nitrate were dissolved in water and the lead was precipitated by potassium dichromate in slight excess. The lead chromate was filtered, was washed and was dissolved in hydrochloric acid. The resulting chromic acid was determined by adding potassium iodide and then by titrating the free iodine with sodium thiosulphate. The results of several titrations are given below:

Pb(NO <sub>3</sub> ) <sub>2</sub>		0.2 Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>		Lead Found.	Error.
Used.	Grams.	Used.	cc.	Per cent.	
	0.1		18.15	62.56	+0.05
	0.1		18.15	62.56	+0.05
	0.2		36.35	62.60	+0.09
	0.2		36.3	62.55	+0.04

A method for the estimation of lead in ores was worked out from these results. Weigh out 0.2 gms. of the ore, dissolve in 10 to 15 cc. of nitric acid and evaporate almost to dryness. Add 50 cc. of water and 5 gms. of ammonium acetate and heat to boiling. Precipitate the lead from the boiling solution with a slight excess of potassium dichromate. Filter, wash and dissolve the precipitate with 20 cc. of 1:1 hydrochloric acid, the solution being received into the original beaker. Dilute the solution and washings to 150 cc., add 0.3 to 0.5 gms. of potassium iodide and titrate the iodine that is liberated with sodium thiosulphate.

The only element that has been found to interfere with this method is barium, which gives high results. Experiments are being carried on to obtain a simple means of removing this metal. Although the work upon this method is not complete, it promises to become an accurate and a rapid means for the estimation of lead in the presence of all of the common elements.

