

## ABSTRACT

### THE USE OF DITHIZONE FOR ANALYSIS OF LEAD USING VISIBLE SPECTROPHOTOMETRY METHOD

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There are several analysis methods which have done to decide lead (Pb) either in inorganic material or in the water area, one other thing by Spectrophotometry, chromatography, electrochemical and extraction. The minimum of lead (Pb) limit concentrate that permitted, then analysis procedural could be repair by involving the concentrate process beforehand change the lead (Pb) become complex compound and follows extraction by use of solvent until the metal concentration could be increase.

In this research is added by  $\text{NH}_4\text{OH}$  to get the pH complex configuration Pb(II)-dithizonate that optimal. In this research had the formation process of complex compound by use of dithizon, until becomes complex compound of Pb(II)-dithizonate which has red color and it was extracted by organic solvent  $\text{CHCl}_3$  or  $\text{CCl}_4$  so it might be analyzed by Spectrophotometry visible.

The aim of this research is to decide the optimum pH and solution organic that the most appropriate to the formation of Pb(II)-dithizonate complex. After got the complex formation that optimal then continue by decide the value of accurate, precision, linearity, LOD, and LOQ.

The significance of this research is could be detected the contamination of high metal lead (Pb) early and better. Beside that, this procedure could be directed to become choice procedure for determining lead (Pb) degree in the sample of surrounding because the way to analyze is easy and the operational cost relatively cheaper.

From this research got the optimum pH complex formation is pH 10,0 and the solvent that use is  $\text{CHCl}_3$ . From linearity, got the regression equation of standard curve Pb,  $y = 0,3226 x + 0,0108$ ,  $r_{\text{quantification}} = 0,9996$ ,  $t_{\text{quantification}} = 58,014$ ,  $V_{x0_{\text{quantification}}} = 0,83$  so it can stated that there is a correlation between the Pb concentration with their absorbance. In the accurate and precision got the Recovery =  $(96,25 \pm 1,75)\%$ ; KV=1,82%. In this research resulted LOD in around 0,010 ppm and LOQ in around 0,32 ppm.

From the data analysis by use of Paired t-Test known that there is a significance influence in the difference using organic solvent between  $\text{CHCl}_3$  and  $\text{CCl}_4$ . From this research we can conclude that Pb(II)-dithizonate in the chloroform solvent can use to act of determining of high metal lead (Pb) by the instrument of spectrophotometry visible.

Keyword: Dithizone, Lead and Spectrophotometry Visible