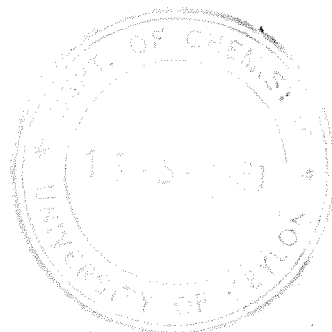


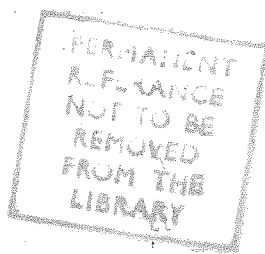
DEVELOPMENT OF A METHOD TO DETERMINE  
LEAD(II) PRESENT IN TRACE AMOUNTS.

BY



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## 2. SUMMARY

Determination of lead traces, have been tried out in variety of analytical techniques. Of these the solvent extraction using dithizone as a complexing agent is widely used as it is simple cheap and rapid. Several national standards for the determination of lead, specify the dithizone solvent extraction procedure. For a country like Sri Lanka, where sophisticated instruments are rare, solvent extraction has become the ideal.

Improvement on the presently available solvent extraction through dithizone was done in this work. It was tried to find out whether

- a) Basic compounds like pyridine,  
piperidine
- b) Acidic compounds like phenol,  
resoreinol
- and c) Compounds containing oxygen atoms  
which are capable of donating lone  
pairs of electrons;

are capable of acting as adducting agents for the dithizone extraction system. By carrying out such trials it was found that diethyl malonate acts as an efficient adduct for the dithizone extraction system.

On finding out the optimum conditions for the <sup>dithizone/diethyl malonate</sup> ~~system~~ <sup>extracting</sup> system, it was found that 10 per cent solution of diethyl malonate in carbon tetrachloride is suitable at pH-9 for the extraction.

The common interfering elements like bismuth(III), thallium(I) etc. were found to interfere even in the presence of diethyl malonate. It was not tried to find out new elements which may cause interference in using diethyl malonate as an adducting agent.

This ~~extracting~~ system was found to be applicable for the determination of lead contents in common canned food products such as Jams and fruit juices.