

HADIAH

ANALYSIS OF SOME TRACE METALS IN TIN ORE

BY

MD.JAZAM BIN MD.YASIN

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Md. Jazam bin Md. Yasin

## ABSTRAK

Analisa beberapa logam surih didalam bijih timah yang boleh didapati secara komersial sebagai " Amang Feed " telah di jalankan secara kualitatif dan kuantitatif.

Analisa secara kualitatif telah dijalankan dengan menggunakan kaedah-kaedah klasik basah, ujian-ujian sepontan dan kromatografi kertas satu dimensi dan dua dimensi. Kehadiran logam-logam besi, zink, aluminium, antimoni dan bismus telah dikesan dan ditentukan dengan kaedah-kaedah klasik basah dan ujian-ujian sepontan. Kehadiran aluminium dan zink selanjutnya telah ditentukan dari eksperimen eksperimen kromatografi kertas. Eksperimen eksperimen kromatografi kertas juga dapat memberikan tanda tanda yang menasabah bagi kehadiran logam logam bismus dan antimoni. Sebagai tambahan, analisa dengan menggunakan kaedah pendafluoro sinar x memperlihatkan kehadiran logam logam zirkonium, niobium, tantalum, titanium, kalsium, zink dan besi juga.

Analisa secara kuantitatif telah dijalankan dengan menggunakan kaedah spektroskopi penyerapan atom. Keputusan keputusan kuantitatif ditunjukkan didalam jadual berikutny.

### Ringkasan keputusan keputusan kuantitatif

Unsur	Fe	Sb	Bi	Zn	Al
Kepekatan (ppm)	148.00	0.50	0.50	0.23	1.15
" Assay " ( % )	~ 1.85	~0.01	~0.01	<0.01	~0.01

## ABSTRACT

Analysis, both qualitative and quantitative, was carried out for some trace metals in a tin ore commercially available as " Amang Feed ".

Qualitative analysis was carried out by classical wet methods, spot tests, one-dimensional and two-dimensional paper chromatography. The presence of iron, zinc, aluminium, antimony and bismuth were detected and confirmed by the classical wet methods and the spot methods. The presence of aluminium and zinc was further confirmed by the paper chromatographic experiments. The paper chromatographic experiments also provided a reasonable hint for the presence of bismuth and antimony. In addition, the x-ray fluorescence analysis revealed the presence of zirconium, niobium, tantalum, titanium, calcium, zinc and iron also.

Quantitative analysis was carried out by atomic absorption spectroscopy. The quantitative results are summarized in the following table.

### Summary of quantitative results

Element	Fe	Sb	Bi	Zn	Al
Concentration ( ppm )	148.00	0.50	0.50	0.23	1.15
Assay ( % )	~ 1.85	~0.01	~0.01	< 0.01	~0.01