

**MUTUAL INTERFERENCES OF ARSENIC AND ANTIMONY
IN THE DETERMINATION OF EACH OTHER BY HYDRIDE
GENERATION ATOMIC ABSORPTION SPECTROMETRY,**

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Determination of arsenic and antimony by hydride generation atomic absorption spectrometry (HGAAS) provides a very high sensitivity for these elements. Moreover, separation of these elements as their volatile hydrides eliminates most of the matrix interferences. However, several metal ions interfere with the hydride formation and masking of these interferences have been reported in the literature. Moreover, all the hydride forming elements mutually interfere with the determination of the others at the atomization step, when quartz tube atomizers are used. The measures suggested so far in the literature are not successful enough for the elimination of such mutual interferences.

Effect of arsenic on the determination of antimony is an example of the mutual interferences and a serious problem when quartz tube atomizers are used. This interference was eliminated earlier by separating arsine and stibine generated using a gas chromatographic column (GC), such that each hydride reached the atomizer alone. However, because of the introduction of a GC-column into the system the hydrides reach the atomizer slowly, resulting in decreased sensitivity. Alternative methods of eliminating such interferences have also been tried, these include; selective decomposition of the interfering hydride by passing through a glass wool packed mini column at high temperature, coating the mini column fillings with antimony and introducing oxygen into the quartz tube atomizer.