

## STUDIES ON DEHALOGENATION OF EPPAWELA APATITE AT HIGH TEMPERATURE

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It is believed that the halogen content of apatite plays an important role in its reactivity with various fluxes and also affects its solubility. In this study the loss or the retention of fluorine and chlorine components in Eppawela apatite and in sinters made of apatite, soda ash and silica at high temperature were estimated.

A sample of apatite obtained from the leached zone at Eppawela and the compositions made of apatite, soda ash and quartz were heated at temperatures of 900°-1300°C in a muffle furnace and their halogen contents were determined (Edmond, 1969) before and after heat treatment. Water extracts and 2% citric acid extracts of the products after firing were also examined for their halogen content.

It was observed that in the temperature range of study the samples lost a large proportion of chlorine while most of the fluorine was retained. However, water and citric acid extracts were found to contain little fluorine. It was also found that loss of chlorine is facilitated by the presence of sodium carbonate.

Results indicate that in the product fluorine is contained in a citric acid soluble phase. In the citric acid solution however, the fluorine is probably present as fluorosilicate complex rather than as simple F<sup>-</sup> ions.

(Halogen analyses reported in this paper were carried out at the Department of Chemistry, University of Aberdeen, U.K. with assistance from Dr. M. Masson).

### Reference:

1. Edmond, C. R. (1969). *Anal. Chem.*, 41 (10), 1327.