

NEW DATA ON VERMICULITE

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ABSTRACT

Hydrothermal techniques have been used to study the stability and transformations in vermiculite. Partial dehydration occurs first at 550° C and completely nonexpanding structures are obtained first at 650° C at 1,000 atmospheres water pressure. Above 350° C (and rapidly near 400° C) a transformation of the vermiculite to a "chlorite-like" phase takes place under these hydrothermal conditions. The new phase shows reactions similar to those of "chlorite" and unlike those of vermiculite with respect to DTA patterns, dry heating, etc. Vermiculite appears to be a metastable phase throughout the temperature range.

These data set definite limits on the mode of genesis of vermiculite. The question of treating vermiculite as a montmorillonite is discussed in the light of the properties of very fine fractions of vermiculite.