
Occurrence of Collapsed and Expanded Crystals in Montmorillonite-Dextran Complexes*

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* Contribution from the North Central Region, Agricultural Research Service, USDA, in cooperation with the Department of Soil Science, University of Minnesota, Paper No. 8189, Scientific Journal Series, Minnesota Agricultural Experiment Station.

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Abstract: X-ray diffraction patterns obtained from montmorillonite-dextran complexes prepared with either B-512F or Polytran dextran showed maximum oven-dry crystal expansions of about $5 \cdot 3 \text{ \AA}$. X-ray diffraction patterns of individual complex preparations containing < 20 per cent dextran showed evidence of both expanded and collapsed crystals. The observation of expanded and collapsed crystals in individual preparations has not been previously reported and was apparently related to clay preparation. An estimate of the quantity of dextran which could be interacting with the silicate surface was obtained using polymer adsorption weights and volumes. At maximum adsorption almost all adsorbed B-512F could be in contact with the mineral surface, but only two thirds of the adsorbed Polytran could be in contact with the mineral surface.

Clays and Clay Minerals; October 1973 v. 21; no. 5; p. 289-293; DOI: [10.1346/CCMN.1973.0210504](https://doi.org/10.1346/CCMN.1973.0210504)

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