

THE SCATTERING OF TUBULAR OBJECTS

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ABSTRACT

The scattering intensity due to tubular objects as exemplified by certain halloysites is discussed. The intensity function is characterized by the presence of bands with a steep inside front and long trailing tails. The intensities of these bands are largely determined by the "unit cell" of the curved sheets which make up the tube, while the positions of the edges of the bands are characteristic of dimensions and type of unit cell. The region of reciprocal space close to the Z -axis (chosen parallel to the axis of the tube) contains information about the over-all structure of the tube. An electron diffraction photograph of a single halloysite tube (Taggart, Milligan and Studer, presented at the Third National Clay Conference) illustrates these features. Additional equatorial reflections indicate that the curved sheet has in turn a layer structure, the layers in effect having random displacement to each other.