

Paper to be presented orally at the Eighth Biennial Conference on Carbon, Buffalo, New York, June 19-23, 1967.

Shear Properties of Graphite Single Crystals*

D. E. Soule, C. W. Nezbeda, and O. L. Blakslee

Union Carbide Corporation
Carbon Products Division
Parma Technical Center
Parma, Ohio 44130

ABSTRACT

Room temperature shear modulus measurements have been made on purified, natural graphite single crystals by ultrasonic and static means. Several crystals were measured using both techniques and good agreement was obtained. Values of c_{44} for graphite crystals obtained ultrasonically and statically range from 0.01 to 0.17×10^{11} dynes/cm². The ultrasonic method for measurement of c_{44} in graphite crystals will be described. The static measurements are made by unidirectional shear with essentially zero normal force. Stress-strain curves obtained statically, by increasing maximum stress cyclically until shear occurs, will also be discussed.

* Supported in part by the U. S. Atomic Energy Commission.