Determination of the Point Group of β-Ga_2O_3 from Morphology and Physical Properties. G. M. WOLTEN AND A. B. CHASE. The Aerospace Corporation, El Segundo, California. The lattice of β-Ga_2O_3 is metrically monoclinic. The crystal structure was reported in space group $C2/m$ by S. Geller in 1960. However, monohedra are a constant feature of the crystal morphology, and enantiomorphous crystals have been found. The optical dispersion is asymmetric, and observations in the scanning electron microscope indicate polarity. Therefore, the point group is 1 and the space group $P1$. Although the crystal lacks any true symmetry, pseudosymmetry is extensive and accounts for the observed twin laws: $[001]_{180}$, $[021]_{180}$, $[021]_{90}$, $[132]_{180}$, $[1\bar{3}2]_{180}$, and $(5\bar{1}2)_m$.

The Electrical Conductivity of Strontium Doped Ammonium Perchlorate Single Crystals. A. G. KENNAN AND M. G. OHANIAN. Department of Chemistry, University of Miami, Coral Gables, Florida 33124. The electrical conductivity of single crystals of ammonium perchlorate doped with $Sr(ClO_4)_2$ has been studied from 25 to 180°C. Increasing vacancy concentrations enhance the conductivity throughout the temperature range. However, the activation energy of conduction is unchanged at lower temperatures but is diminished to one-half at higher temperatures. These observations support conduction mechanisms proposed earlier. For Sr^{2+} Schottky complexes, the binding energy and entropy are 0.44 eV and 2.5×10^{-4} eV/deg, respectively.

Preparation et Etude de LiCuO. H. N. MIGEON, A. COURTOIS, M. ZANNE, AND C. GLEITZER. Laboratoire de Chimie du Solide and Laboratoire de Mineralogie et Cristallographie, Universite de Nancy I, 54037 Nancy, France. This oxide is obtained through reaction of Li_2O with Cu_2O at 840°C. The cell, determined with electron microdiffraction, is tetragonal ($a = 8.515$ Å; $c = 3.81$ Å). The crystallographic structure is refined up to $R = 0.10$; this proves the isotypic character with KAgO. This structure is described as anti-$CoMoO_4$. The compound is light green, hydrolyzable, and weakly paramagnetic.

Thermodynamic Relations among Olivine, Spinel, and Phenacite Structures in Silicates and Germanates. V. The System MgO–"FeO"–GeO_2. A. NAVROTSKY AND L. HUGHES, JR. Department of Chemistry, Arizona State University, Tempe, Arizona 85281. Subsolidus phase relations in the system MgO–"FeO"–GeO_2 at 1035°C were determined. From the data, the free energy of the transformation of Fe_2GeO_4 (spinel) to Fe_2GeO_4 (olivine) is estimated to be $7.1 \pm \sim 1.5$ kcal/mole. This value is consistent with the trends shown by other germanates and silicates.