THE CRYSTAL STRUCTURE OF V_2Ga_5

LU HSUEH-SHAN (S. S. LU)   LIANG CHING-KWEI

(*Academia Sinica*)

ABSTRACT

The crystal structure of V_2Ga_5 has been determined by the method of X-ray diffraction from single crystal oscillation photographs and Debye-Scherrer photographs. The homogeneity range of this phase in the V-Ga system extends approximately from VGa_2 to V_2Ga_5.

The crystal belongs to the tetragonal system, the lattice spacings at 18°C being $a = 8.9540$ Å and $c = 2.6892$ Å. There are two formula units per unit cell. The space group is D_{4h}^3—$P4/mbm$. The four V atoms are situated at the $4(h)$ positions, while the ten Ga atoms are situated at the $8(i)$ and $2(d)$ positions, with $x_h = 0.180$, $x_i = 0.070$, and $y_i = 0.210$.