substance: V_2O_5
property: crystal structure, lattice parameters, density

crystal structure: orthorhombic, layer-type, space group D_{2h}^{13} – Pmm, $Z = 2$.

Projection of the structure along [001] is shown in Fig. 1, and along [010] in Fig. 2. Perspective view: Fig. 3. Monovalent dopants occupy interstitial positions in the lattice as shown in Figs. 1 and 2.

lattice parameters

a	11.510_8 Å	*T* = 293K	61B,
b	4.369_5 Å		50B
c	3.563_3 Å		

density

d_{calc}	3.371 g cm^{-3}	*T* = 293 K	61B,
			50B

References:

50B Bystrom, A., Wilhelmi, K. A., Brotzan, O.: Acta Chem. Scand. 4 (1950) 1119.
61B Bachmann, H. G., Ahmed, F. R., Barnes, W. H.: Z. Kristallogr. 115 (1961) 110.
71P Perlstein, J. H.: J. Solid State Chem. 3 (1971) 217.

Fig. 1.

V_2O_5. Structure projected along [001]. Shaded circles are vanadium, open circles are oxygen atoms. Inferred positions of monovalent impurities are shown [71P].

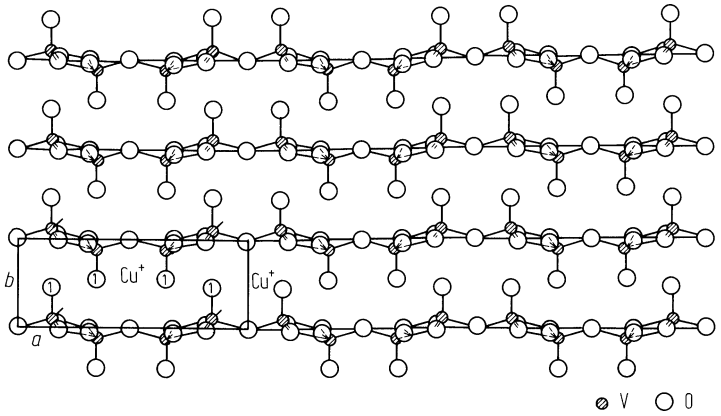

Fig. 2.

V_2O_5. Structure projected along [0 1 0]. Small circles are vanadium with dotted ones below the *a*–*c* plane and solid ones above, large circles are oxygen. Zig-zagging of vanadium separated by 3.08 Å along the *c*-axis is clearly seen [71P].

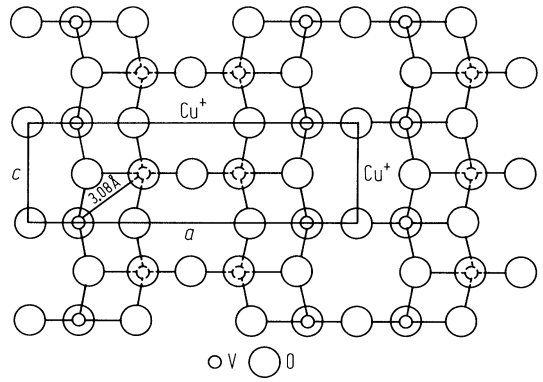

Fig. 3.

V_2O_5. Crystal structure in perspective view [61B].