substance: Mn_2O_3
property: phase diagram, crystal structure, lattice parameters of high temperature phase

phase diagram: see Fig. 1.

high-temperature phase ($T \geq 302$ K):

crystal structure: undistorted cubic bixbyite structure, space group T_h^7 – Ia3. For this structure, at 302 K, $u = -0.035$, $x = 0.379$, $y = 0.147$, $z = 0.377$. The 8(a) sites are regular trigonal antiprisms and the 24(d) sites have three sets of two oxide ions.

Mn–O distances

d(Mn–O)	2.003 Å	Mn in 8(a) sites	71G
d(Mn–O)	1.987 Å	Mn in 24(d) sites	
	1.898 Å		
	2.242 Å		

lattice parameter

a	9.414 Å	*T* = 314 K	68G
	9.418 Å	*T* = 375 K	
	9.426 Å	*T* = 482 K	
	9.443 Å	*T* = 702 K	

References:

65O Otto, E. M.: J. Electrochem. Soc. 112 (1965) 367.
67S Shenouda, F., Aziz, S.: J. Appl. Chem. 17 (1967) 258.
68G Grant, R. W., Geller, S., Cape, J. A., Espinosa, G. P.: Phys. Rev. 175 (1968) 686.
71G Geller, S.: Acta Crystallogr. 27 (1971) 821.

Fig. 1.

Phase diagram for the systems MnO_2/Mn_2O_3 and Mn_2O_3/Mn_3O_4 drawn from the data of [65O, 67S].