$Na_2[O_2]$	*hP*12	(189) *P*-62*m* – hgfe

Na_2O_2 form I [2]; EuAs [4]; K_2S_2 [3]; Rb_2C_2 [7]
Structural features: Distorted close-packed Na layers in h stacking; O in octahedral voids (displaced from the octahedron centers). O_2 dumbbells arranged in infinite linear chains parallel to [001]. See Fig. IV.5.

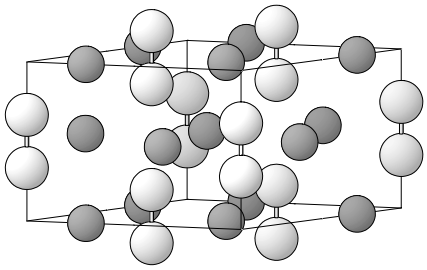

Fig. IV.5. **Na_2O_2 form I**

Arrangement of Na atoms (dark) and O_2 dumbbells (light).

Tallman R.L. (1960) [1]
Na_2O_2
$a = 0.6207$, $c = 0.4471$ nm, $c/a = 0.720$, $V = 0.1492$ nm^3, $Z = 3$

site	Wyck.	sym.	*x*	*y*	*z*	occ.	atomic environment
O1	4*h*	3..	$^1/_3$	$^2/_3$	0.167		single atom O
Na2	3*g*	*m*2*m*	0.634	0	$^1/_2$		trigonal prism O_6
Na3	3*f*	*m*2*m*	0.276	0	0		trigonal prism O_6
O4	2*e*	3.*m*	0	0	0.333		single atom O

Transformation from published data: -*x*,-*y*,-*z*; origin shift 0 0 $^1/_2$
Experimental: powder, X-rays

Remarks: Phase stable at T < 785 K. We deduced the space group from the coordinates of all the atoms in the unit cell. The same data are also reported in [8]. Preliminary data for [2] in [5]. Contrary to what is stated in [6], the data reported in [1] and [2] must be considered to be similar. The positions of Rb, part of the C atoms and the centers of the remaining C_2 dumbbells were determined in [7] (short interatomic distances: d(C-C) = 0.052 nm).

References: [1] Tallman R.L. (1960), Diss. Abstr. 20, 4293. [2] Föppl H. (1957), Z. Anorg. Allg. Chem. 291, 12-50. [3] Föppl H., Busmann E., Frorath F.K. (1962), Z. Anorg. Allg. Chem. 314, 12-20. [4] Ono S., Hui F.L., Despault J.G., Calvert L.T., Taylor J.B. (1971), J. Less-Common Met. 25, 287-294. [5] Föppl H. (1954), Angew. Chem. 66, 335. [6] (1964), Structure Reports 21, 233. [7] Ruschewitz U., Müller P., Kockelmann W. (2001), Z. Anorg. Allg. Chem. 627, 513-522. [8] Tallman R.L., Margrave J.L., Bailey S.W. (1957), J. Am. Chem. Soc. 79, 2979-2980.