$BaTa_2O_6$	*hP*33	(189) *P*-62*m* – li^2gf^2

$Ba_{0.5-x}TaO_{3-x}$ [1]
Structural features: Triple infinite chains of vertex-linked TaO_6 octahedra (partly ordered O vacancies).

Gray I., Millman A.P. (1960) [1]
BaO_6Ta_2
$a = 0.896$, $c = 0.779$ nm, $c/a = 0.869$, $V = 0.5416$ nm^3, $Z = 3$

site	Wyck.	sym.	*x*	*y*	*z*	occ.	atomic environment
O1	12*l*	1	0.18	0.47	0.26	0.75	single atom Ta
Ta2	6*i*	..*m*	0.23	0	0.26		octahedron O_6
O3	6*i*	..*m*	0.84	0	0.26	0.5	non-colinear Ta_2
O4	3*g*	*m*2*m*	0.23	0	$^1/_2$		colinear Ta_2
O5	3*f*	*m*2*m*	0.23	0	0		colinear Ta_2
Ba6	3*f*	*m*2*m*	0.63	0	0		non-coplanar square O_4

Transformation from published data: origin shift 0 0 $^1/_2$
Experimental: single crystal, precession photographs, X-rays, R = 0.240

Remarks: $Ba_{0.44}(Ta^{4+})_{0.74}(Ta^{5+})_{0.26}O_{2.57}$. Tentative structure in disagreement with the observed fix cation ratio Ba/Ta = 0.44. We assume that in table 1 of [1] the number of O is misprinted so that the total number per cell is 21 instead of 18 (given in the text); we assigned an arbitrary value to the occupancy of site O1.

References: [1] Gray I., Millman A.P. (1960), Nature (London) 188, 1099-1100.