$Ba_3HoRhAlO_{7.5}$	*hP*30	(187) *P*-6*m*2 – $n^2kji^2h^2gba$

$Ba_6Ho_2Rh_2Al_2O_{15}$ [1], perovskite 6H; $Ba_6Rh_4Al_2O_{15}$ [2]
Structural features: Close-packed BaO_3 layers (partial vacancies ignored) in hc_2 stacking; Ho, Rh and Al in octahedral (O_6) voids (Al displaced from the octahedron centers). Substitution derivative of hexagonal $BaTiO_3$ (perovskite 6H), $A_3[BB'B'']O_{9-x}$.

Schlüter D., Müller Buschbaum H. (1993) [1]
$AlBa_3HoO_{7.50}Rh$
$a = 0.58718$, $c = 1.46939$ nm, $c/a = 2.502$, $V = 0.4387$ nm^3, $Z = 2$

site	Wyck.	sym.	*x*	*y*	*z*	occ.	atomic environment
O1	6*n*	.*m*.	0.1825	0.8175	0.325		non-colinear AlHo
O2	6*n*	.*m*.	0.8355	0.1645	0.162		non-colinear RhHo
O3	3*k*	*mm*2	0.46	0.54	$^1/_2$	0.33	4-vertex polyhedron O_2Al_2
O4	3*j*	*mm*2	0.511	0.489	0	0.67	non-colinear Rh_2
Rh5	2*i*	3*m*.	$^2/_3$	$^1/_3$	0.0872		octahedron O_6
Ba6	2*i*	3*m*.	$^2/_3$	$^1/_3$	0.3212		9-vertex polyhedron O_9
Ba7	2*h*	3*m*.	$^1/_3$	$^2/_3$	0.1484		cuboctahedron O_{12}
Al8	2*h*	3*m*.	$^1/_3$	$^2/_3$	0.3746		octahedron O_6
Ho9	2*g*	3*m*.	0	0	0.2508		octahedron O_6
Ba10	1*b*	-6*m*2	0	0	$^1/_2$		anticuboctahedron O_{12}
Ba11	1*a*	-6*m*2	0	0	0		anticuboctahedron O_{12}

Transformation from published data: -*x*,-*y*,-*z*; origin shift 0 0 $^1/_2$
Experimental: single crystal, diffractometer, X-rays, wR = 0.046

Remarks: When relevant, we changed the last digit of the atom coordinates to respect the symmetry conditions for special positions. A partly ordered atom arrangement is reported for $Ba_6Rh_4Al_2O_{15}$ in [2], $Ba_6(Al,Rh)_2Rh_2(Rh,Al)_2O_{15}$.

References: [1] Schlüter D., Müller Buschbaum H. (1993), J. Alloys Compd. 191, 305-308. [2] Schlüter D., Müller Buschbaum H. (1993), J. Alloys Compd. 197, 51-55.