$Cs_9Mo_9Al_3[PO_4]_{11}O_{15}$	*hP*196	(176) $P6_3/m$ – $i^{10}h^{10}f^4$

$Cs_9Mo_9Al_3P_{11}O_{59}$ [1]; $Cs_7K_2Mo_9Al_3P_{11}O_{59}$ [2]
Structural features: Units of three edge- and vertex-linked MoO_6 octahedra share vertices with $Al_3P_{10}O_{40}$ units (vertex-linked AlO_4 and PO_4 tetrahedra; orientational disorder up-down for the central PO_4 tetrahedron) and additional PO_4 tetrahedra to form a 3D-framework; Cs in large channels parallel to [001].

Guesdon A. et al. (1995) [1]
$Al_3Cs_9Mo_9O_{59}P_{11}$
a = 1.6989, c = 1.1866 nm, c/a = 0.698, V = 2.9660 nm^3, Z = 2

site	Wyck.	sym.	x	y	z	occ.	atomic environment
Cs1	12*i*	1	0.14693	0.61941	0.04617		non-colinear O_2
O2	12*i*	1	0.1603	0.446	0.0811		single atom P
O3	12*i*	1	0.1699	0.0205	0.1241		single atom Mo
Cs4	12*i*	1	0.17076	0.19754	0.2356	0.5	
Mo5	12*i*	1	0.27908	0.04499	0.1396		octahedron O_6
O6	12*i*	1	0.3025	0.2713	0.0014		single atom P
O7	12*i*	1	0.3402	0.1478	0.0243		single atom P
P8	12*i*	1	0.3778	0.2498	0.0183		tetrahedron O_4
O9	12*i*	1	0.413	0.0587	0.1446		single atom P
O10	12*i*	1	0.4308	0.299	0.1223		non-colinear PAl
O11	6*h*	*m*..	0.058	0.3114	$^1/_4$		non-coplanar triangle Mo_3
O12	6*h*	*m*..	0.0698	0.4822	$^1/_4$		single atom P
Mo13	6*h*	*m*..	0.1687	0.44017	$^1/_4$		octahedron O_6
O14	6*h*	*m*..	0.2456	0.4063	$^1/_4$		single atom Mo
O15	6*h*	*m*..	0.2578	0.5747	$^1/_4$		
O16	6*h*	*m*..	0.3193	0.14	$^1/_4$		non-colinear Mo_2
P17	6*h*	*m*..	0.4469	0.0331	$^1/_4$		tetrahedron O_4
Al18	6*h*	*m*..	0.4873	0.3322	$^1/_4$		tetrahedron O_4
O19	6*h*	*m*..	0.5509	0.0822	$^1/_4$		non-colinear PAl
O20	6*h*	*m*..	0.5722	0.3055	$^1/_4$		
O21	4*f*	3..	$^1/_3$	$^2/_3$	0.088	0.5	single atom P
P22	4*f*	3..	$^1/_3$	$^2/_3$	0.2138	0.5	
O23	4*f*	3..	$^1/_3$	$^2/_3$	0.579	0.5	single atom P
P24	4*f*	3..	$^1/_3$	$^2/_3$	0.7057	0.5	

Transformation from published data: *y*,*x*,-*z*
Experimental: single crystal, diffractometer, X-rays, wR = 0.033, T = 294 K
Remarks: A partly disordered arrangement of Cs and K is reported for $Cs_7K_2Mo_9Al_3P_{11}O_{59}$.

References: [1] Guesdon A., Borel M.M., Leclaire A., Grandin A., Raveau B. (1995), J. Solid State Chem. 114, 451-458. [2] Guesdon A., Leclaire A., Borel M.M., Raveau B. (1995), Chem. Mater. 7, 1873-1878.