$Ce_3[PO_4]Cl_6$	*hP*32	(176) $P6_3/m - h^4f^2$

$Ce_3(PO_4)Cl_6$ [1]
Structural features: $Ce(Cl_6O_2)(ClO)$ bicapped square antiprisms share atoms to form a 3D-framework; P in tetrahedral voids (partial disorder). Variant of $La_3(VO_4)Cl_6$.

Sieke C., Schleid T. (2001) [1]
$Ce_3Cl_6O_4P$
a = 1.24636, c = 0.40693 nm, c/a = 0.326, V = 0.5474 nm^3, Z = 2

site	Wyck.	sym.	x	y	z	occ.	atomic environment
Cl1	6*h*	*m*..	0.1443	0.2557	$^1/_4$		non-colinear Ce_2
O2	6*h*	*m*..	0.2252	0.5376	$^1/_4$		
Ce3	6*h*	*m*..	0.4187	0.28599	$^1/_4$		non-colinear O_2
Cl4	6*h*	*m*..	0.4411	0.0615	$^1/_4$		trigonal bipyramid Ce_4O
P5	4*f*	3..	$^1/_3$	$^2/_3$	0.187	0.5	
O6	4*f*	3..	$^1/_3$	$^2/_3$	0.686	0.5	

Transformation from published data: *y*,*x*,-*z*; origin shift 0 0 $^1/_2$
Experimental: single crystal, diffractometer, X-rays, R = 0.028

Remarks: Refinement of the occupancies of sites P5 and O6 showed no significant deviation from 0.5. Short interatomic distances for partly occupied site(s).

References: [1] Sieke C., Schleid T. (2001), Z. Anorg. Allg. Chem. 627, 761-767.