$Pb_{12}[CO_3][ClO_4]_{10}[OH]_{12}[H_2O]_6$	*hP*180	(176) $P6_3/m$ – $i^{10}h^6f^4eba$

$[Pb_4(OH)_4]_3(CO_3)(ClO_4)_{10}\cdot 6H_2O$ [1]
Structural features: ($Pb_4[OH]_4$) cubic clusters (a Pb_4 tetrahedron with one OH above each face), ClO_4 tetrahedra (partial orientational disorder) and CO_3 trigonal units (perpendicular to [001]); H_2O between the units.

Hong S.H., Olin B. (1973) [1]
$CCl_{10}H_{24}O_{61}Pb_{12}$
a = 1.4121, c = 1.6316 nm, c/a = 1.155, V = 2.8176 nm^3, Z = 2

site	Wyck.	sym.	x	y	z	occ.	atomic environment
Cl1	12*i*	1	0.0063	0.3335	0.0928		tetrahedron O_4
O2	12*i*	1	0.062	0.3713	0.0195		single atom Cl
O3	12*i*	1	0.0674	0.3233	0.153		single atom Cl
O4	12*i*	1	0.0946	0.0017	0.0376	0.5	non-colinear ClO
Pb5	12*i*	1	0.22033	0.22285	0.13474		non-coplanar triangle $(OH)_3$
O6	12*i*	1	0.3288	0.093	0.0803		single atom Cl
(OH_2)7	12*i*	1	0.3304	0.4613	0.0978		single atom Pb
(OH)8	12*i*	1	0.4191	0.3282	0.1668		single atom Pb
O9	12*i*	1	0.4277	0.0179	0.1168		single atom Cl
O10	12*i*	1	0.5758	0.3369	0.0346		single atom Cl
O11	6*h*	*m*..	0.0422	0.1099	$^1/_4$		single atom C
Pb12	6*h*	*m*..	0.05022	0.57673	$^1/_4$		non-coplanar triangle $(OH)_3$
(OH)13	6*h*	*m*..	0.2427	0.3329	$^1/_4$		non-coplanar triangle Pb_3
(OH)14	6*h*	*m*..	0.2611	0.146	$^1/_4$		non-coplanar triangle Pb_3
O15	6*h*	*m*..	0.2657	0.5538	$^1/_4$		
Pb16	6*h*	*m*..	0.44783	0.21413	$^1/_4$		non-coplanar triangle $(OH)_3$
O17	4*f*	3..	$^1/_3$	$^2/_3$	0.141	0.5	single atom Cl
Cl18	4*f*	3..	$^1/_3$	$^2/_3$	0.2296	0.5	
Cl19	4*f*	3..	$^1/_3$	$^2/_3$	0.5632		tetrahedron O_4
O20	4*f*	3..	$^1/_3$	$^2/_3$	0.6519		single atom Cl
O21	4*e*	3..	0	0	0.09	0.5	single atom Cl
Cl22	2*b*	-3..	0	0	0		square prism (cube) O_8
C23	2*a*	-6..	0	0	$^1/_4$		coplanar triangle O_3

Transformation from published data: origin shift 0 0 $^1/_2$
Experimental: single crystal, diffractometer, X-rays, R = 0.060

Remarks: Short interatomic distances for partly occupied site(s). Hydrogen atoms are not taken into consideration for Pearson symbol, Wyckoff sequence and atomic environments.

References: [1] Hong S.H., Olin B. (1973), Acta Chem. Scand. 27, 2309-2320.