$Pb_5[CO_3]_3O[OH]_2$	*hP*126	(185) $P6_3cm$ – $d^4c^9b^4a^4$

$Pb_5(CO_3)_3O(OH)_2$ [1], plumbonacrite
Structural features: $O(OH)_3Pb_7$ clusters (a central OPb_4 tetrahedron sharing edges with three $(OH)Pb_3$ non-planar trigonal units) and CO_3 trigonal units (perpendicular to [001]) share atoms to form infinite slabs (Pb electron lone-pairs in the interlayers).

Krivovichev S.V., Burns P.C. (2000) [1]
$C_3H_2O_{12}Pb_5$
$a = 0.90921$, $c = 2.4923$ nm, $c/a = 2.741$, $V = 1.7843$ nm^3, $Z = 6$

site	Wyck.	sym.	*x*	*y*	*z*	occ.	atomic environment
O1	12*d*	1	0.138	0.323	0.3345		single atom C
O2	12*d*	1	0.199	0.525	0.0164		single atom C
O3	12*d*	1	0.332	0.522	0.1576		single atom C
Pb4	12*d*	1	0.3477	0.4265	0.4264	0.5	
O5	6*c*	..*m*	0.138	0	0.0126		single atom C
O6	6*c*	..*m*	0.143	0	0.637		single atom C
Pb7	6*c*	..*m*	0.2466	0	0.735		single atom O
(OH)8	6*c*	..*m*	0.289	0	0.2121		single atom Pb
Pb9	6*c*	..*m*	0.3219	0	0.534		single atom (OH)
C10	6*c*	..*m*	0.323	0	0.337		non-coplanar triangle O_3
(OH)11	6*c*	..*m*	0.351	0	0.4437		single atom Pb
Pb12	6*c*	..*m*	0.3537	0	0.1281		single atom (OH)
O13	6*c*	..*m*	0.469	0	0.3294		single atom C
C14	4*b*	3..	$^1/_3$	$^2/_3$	0.021		non-coplanar triangle O_3
C15	4*b*	3..	$^1/_3$	$^2/_3$	0.147		non-coplanar triangle O_3
Pb16	4*b*	3..	$^1/_3$	$^2/_3$	0.3148		single atom O
O17	4*b*	3..	$^1/_3$	$^2/_3$	0.401		tetrahedron Pb_4
C18	2*a*	3.*m*	0	0	0.0		non-coplanar triangle O_3
C19	2*a*	3.*m*	0	0	0.145		non-coplanar triangle O_3
O20	2*a*	3.*m*	0	0	0.255		tetrahedron Pb_4
Pb21	2*a*	3.*m*	0	0	0.3521		single atom O

Transformation from published data: origin shift 0 0 0.465
Experimental: single crystal, diffractometer, X-rays, R = 0.049

Remarks: Metastable phase. The atom arrangement within one structural slab was determined in [2]. 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] Krivovichev S.V., Burns P.C. (2000), Mineral. Mag. 64, 1069-1075. [2] Cowley J.M. (1956), Acta Crystallogr. 9, 391-396.