

**Pb<sub>7</sub>Cl<sub>2</sub>F<sub>12</sub>***hP28*(174) *P*-6 – k<sup>4</sup>j<sup>4</sup>edba**Pb<sub>7</sub>Cl<sub>2</sub>F<sub>12</sub>** [1], laurelite

Structural features: Infinite columns of base-linked Pb(Cl<sub>2</sub>F<sub>4</sub>)F<sub>3</sub> and PbF<sub>6</sub>F<sub>3</sub> tricapped trigonal prisms share atoms to form a Zr<sub>2</sub>Fe<sub>12</sub>P<sub>7</sub> antitype-framework with propeller-like columns; part of Pb displaced by *c*/2.

Merlino S. et al. (1996) [1]

Cl<sub>2</sub>F<sub>12</sub>Pb<sub>7</sub>*a* = 1.0267, *c* = 0.39844 nm, *c/a* = 0.388, *V* = 0.3637 nm<sup>3</sup>, *Z* = 1

site	Wyck.	sym.	<i>x</i>	<i>y</i>	<i>z</i>	occ.	atomic environment
F1	3 <i>k</i>	<i>m</i> ..	0.105	0.271	<sup>1</sup> / <sub>2</sub>		single atom Pb
Pb2	3 <i>k</i>	<i>m</i> ..	0.285	0.432	<sup>1</sup> / <sub>2</sub>	0.045	trigonal bipyramid F <sub>2</sub> Pb <sub>2</sub> Cl
Pb3	3 <i>k</i>	<i>m</i> ..	0.4155	0.1089	<sup>1</sup> / <sub>2</sub>	0.955	non-colinear Pb <sub>2</sub>
F4	3 <i>k</i>	<i>m</i> ..	0.428	0.38	<sup>1</sup> / <sub>2</sub>		single atom Pb
F5	3 <i>j</i>	<i>m</i> ..	0.039	0.43	0		single atom Pb
F6	3 <i>j</i>	<i>m</i> ..	0.211	0.132	0		single atom Pb
Pb7	3 <i>j</i>	<i>m</i> ..	0.2871	0.4016	0	0.955	non-colinear Pb <sub>2</sub>
Pb8	3 <i>j</i>	<i>m</i> ..	0.428	0.138	0	0.045	trigonal bipyramid F <sub>2</sub> Pb <sub>2</sub> Cl
Cl9	1 <i>e</i>	-6..	<sup>2</sup> / <sub>3</sub>	<sup>1</sup> / <sub>3</sub>	0		coplanar triangle Pb <sub>3</sub>
Cl10	1 <i>d</i>	-6..	<sup>1</sup> / <sub>3</sub>	<sup>2</sup> / <sub>3</sub>	<sup>1</sup> / <sub>2</sub>		coplanar triangle Pb <sub>3</sub>
Pb11	1 <i>b</i>	-6..	0	0	<sup>1</sup> / <sub>2</sub>	0.955	colinear Pb <sub>2</sub>
Pb12	1 <i>a</i>	-6..	0	0	0	0.045	trigonal bipyramid F <sub>3</sub> Pb <sub>2</sub>

Transformation from published data: *y, x, z*Experimental: single crystal, diffractometer, X-rays, *R* = 0.035, *T* = 293 K

Remarks: Natural specimen from the Grand Reef mine, Graham County, Arizona. Short interatomic distances for partly occupied site(s).

References: [1] Merlino S., Pasero M., Perchiazzi N., Kampf A.R. (1996), *Am. Mineral.* 81, 1277-1281.