

Yb₆Co₃₀P₁₉

hP55

(174) *P*-6 – k⁹j⁹a**Yb₆Co₃₀P₁₉** [1]

Structural features: Infinite columns of base-linked P(Yb₂Co₄)Co₂ bicapped and P(Yb₂Co₄)Co₃ and PCo₆Co₃ tricapped trigonal prisms share atoms to form a 3D-framework with triple propeller-like columns.

Jeitschko W., Jakubowski Ripke U. (1993) [1]

Co₃₀P₁₉Yb₆

$a = 1.4703$, $c = 0.3574$ nm, $c/a = 0.243$, $V = 0.6691$ nm³, $Z = 1$

site	Wyck.	sym.	<i>x</i>	<i>y</i>	<i>z</i>	occ.	atomic environment
Co1	3 <i>k</i>	<i>m</i> ..	0.0696	0.534	¹ / ₂		cuboctahedron P ₄ Co ₅ Yb ₃
Co2	3 <i>k</i>	<i>m</i> ..	0.134	0.0225	¹ / ₂		12-vertex polyhedron P ₅ Co ₇
P3	3 <i>k</i>	<i>m</i> ..	0.1372	0.2555	¹ / ₂		tricapped trigonal prism Co ₇ Yb ₂
Co4	3 <i>k</i>	<i>m</i> ..	0.1536	0.4134	¹ / ₂		cuboctahedron P ₄ Co ₅ Yb ₃
Co5	3 <i>k</i>	<i>m</i> ..	0.2755	0.2235	¹ / ₂		cuboctahedron P ₄ Co ₅ Yb ₃
P6	3 <i>k</i>	<i>m</i> ..	0.3181	0.5432	¹ / ₂		trigonal prism Co ₆
Yb7	3 <i>k</i>	<i>m</i> ..	0.3946	0.0968	¹ / ₂		23-vertex polyhedron P ₉ Co ₁₂ Yb ₂
P8	3 <i>k</i>	<i>m</i> ..	0.431	0.3665	¹ / ₂		tricapped trigonal prism Co ₇ Yb ₂
Co9	3 <i>k</i>	<i>m</i> ..	0.5778	0.3512	¹ / ₂		11-vertex polyhedron P ₅ Co ₆
Co10	3 <i>j</i>	<i>m</i> ..	0.0431	0.2702	0		cuboctahedron P ₄ Co ₅ Yb ₃
P11	3 <i>j</i>	<i>m</i> ..	0.056	0.4327	0		tricapped trigonal prism Co ₇ Yb ₂
Co12	3 <i>j</i>	<i>m</i> ..	0.1306	0.1581	0		cuboctahedron P ₄ Co ₇ Yb
Co13	3 <i>j</i>	<i>m</i> ..	0.2255	0.5701	0		11-vertex polyhedron P ₅ Co ₆
P14	3 <i>j</i>	<i>m</i> ..	0.2596	0.1207	0		tricapped trigonal prism Co ₇ Yb ₂
Yb15	3 <i>j</i>	<i>m</i> ..	0.2943	0.3902	0		23-vertex polyhedron P ₉ Co ₁₂ Yb ₂
Co16	3 <i>j</i>	<i>m</i> ..	0.419	0.2694	0		cuboctahedron P ₄ Co ₅ Yb ₃
Co17	3 <i>j</i>	<i>m</i> ..	0.5385	0.0773	0		11-vertex polyhedron P ₄ Co ₅ Yb ₂
P18	3 <i>j</i>	<i>m</i> ..	0.5502	0.2335	0		trigonal prism Co ₆
P19	1 <i>a</i>	-6..	0	0	0		tricapped trigonal prism Co ₉

Transformation from published data: -*x*, -*y*, -*z*; origin shift 0 0 ¹/₂

Experimental: single crystal, diffractometer, X-rays, R = 0.031

References: [1] Jeitschko W., Jakubowski Ripke U. (1993), Z. Kristallogr. 207, 69-79.