| $Sc_5Co_{19}P_{12}$ | *hP*37 | (189) *P*-62*m* – $k^2jg^2f^3ec$ |
|---|---|---|

**$Sc_5Co_{19}P_{12}$** [1]; $Zr_5Co_{19}P_{12}$ [2]
Structural features: Infinite columns of base-linked $P(Sc_2Co_4)Co_3$ and $P(Sc_4Co_2)Co_3$ tricapped trigonal prisms (site splitting ignored) share atoms to form a 3D-framework (a framework of base- and edge-linked $P(Sc_4Co_2)$ prisms with 6-fold prism columns shifted by *c*/2 in channels). Variant of $Ho_5Ni_{19}P_{12}$.

Jeitschko W., Reinbold E.J. (1985) [1]
$Co_{19}P_{12}Sc_5$
$a$ = 1.2124, $c$ = 0.3633 nm, $c/a$ = 0.300, $V$ = 0.4625 $nm^3$, $Z$ = 1

| site | Wyck. | sym. | *x* | *y* | *z* | occ. | atomic environment |
|---|---|---|---|---|---|---|---|
| P1 | 6*k* | *m*.. | 0.167 | 0.4845 | $^1/_2$ | | tricapped trigonal prism $Co_7Sc_2$ |
| Co2 | 6*k* | *m*.. | 0.35489 | 0.48137 | $^1/_2$ | | cuboctahedron $P_4Co_5Sc_3$ |
| Co3 | 6*j* | *m*.. | 0.1767 | 0.37392 | 0 | | cuboctahedron $P_4Co_5Sc_3$ |
| Co4 | 3*g* | *m*2*m* | 0.28329 | 0 | $^1/_2$ | | cuboctahedron $P_4Co_6Sc_2$ |
| Sc5 | 3*g* | *m*2*m* | 0.8171 | 0 | $^1/_2$ | | |
| P6 | 3*f* | *m*2*m* | 0.1759 | 0 | 0 | | |
| Co7 | 3*f* | *m*2*m* | 0.44923 | 0 | 0 | | 13-vertex polyhedron $P_5Co_8$ |
| P8 | 3*f* | *m*2*m* | 0.6405 | 0 | 0 | | tricapped trigonal prism $Co_7Sc_2$ |
| Co9 | 2*e* | 3.*m* | 0 | 0 | 0.0827 | 0.5 | |
| Sc10 | 2*c* | -6.. | $^1/_3$ | $^2/_3$ | 0 | | 23-vertex polyhedron $P_9Co_{12}Sc_2$ |

Transformation from published data: -*x*,-*y*,-*z*
Experimental: single crystal, diffractometer, X-rays, R = 0.023

Remarks: Short interatomic distances for partly occupied site(s). In [1] the Wyckoff position of former Co(4) is misprinted as 2*b* instead of 2*e*.

References: [1] Jeitschko W., Reinbold E.J. (1985), Z. Naturforsch. B 40, 900-905. [2] Ghetta V., Chaudouet P., Madar R., Sénateur J.P., Lambert Andron B. (1986), J. Less-Common Met. 120, 197-201.