$Cs_{1.7}Yb_6F_{19.7}$	*hP*56	(186) $P6_3mc$ – $c^8b^2a^2$

$Cs_{3.4}Yb_{12}F_{39.4}$ [1]
Structural features: Units of three edge-linked YbF_7 pentagonal bipyramids (in part converted into octahedra) share vertices to form a 3D-framework; Cs in channels parallel to [001].

Aleonard S. et al. (1985) [1]
$Cs_{1.70}F_{19.70}Yb_6$
a = 0.8, c = 1.707 nm, c/a = 2.134, V = 0.9461 nm^3, Z = 2

site	Wyck.	sym.	*x*	*y*	*z*	occ.	atomic environment
F1	6*c*	.*m*.	0.1645	0.8355	0.1277		non-coplanar triangle Yb_2F
F2	6*c*	.*m*.	0.1697	0.8303	0.3738		non-coplanar triangle Yb_2F
F3	6*c*	.*m*.	0.4824	0.5176	0.2536		non-colinear Yb_2
Yb4	6*c*	.*m*.	0.4884	0.5116	0.1312		pentagonal bipyramid F_7
Yb5	6*c*	.*m*.	0.4939	0.5061	0.3817		pentagonal bipyramid F_7
F6	6*c*	.*m*.	0.4983	0.5017	0.0082		non-colinear Yb_2
F7	6*c*	.*m*.	0.778	0.222	0.3743		non-colinear Yb_2
F8	6*c*	.*m*.	0.7869	0.2131	0.1298		non-colinear Yb_2
F9	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.1044		non-coplanar triangle Yb_3
F10	2*b*	3*m*.	$^1/_3$	$^2/_3$	0.4131	0.7	non-coplanar hexagon Yb_3F_3
Cs11	2*a*	3*m*.	0	0	0.0	0.89	octahedron F_6
Cs12	2*a*	3*m*.	0	0	0.2603	0.81	trigonal prism F_6

Transformation from published data: origin shift 0 0 0.3711
Experimental: single crystal, diffractometer, neutrons, wR = 0.050

Remarks: Homogeneity range $Cs_{4-x}Yb_{12}F_{40-x}$, $0 < x < 1$. We assigned an approximate value to the *a*-parameter (omitted in [1]). Two alternative models with compositions $CsYb_4F_{13}$ and $CsYb_3F_{10}$, respectively, were tested and rejected (R = 0.059 and 0.054, respectively).

References: [1] Aleonard S., Lambert B., Pannetier J., Gorius M.F., Roux M.T. (1985), J. Solid State Chem. 58, 226-232.