$Sm_3Rh_{15}Si_{9.5}$	*hP*58	(176) $P6_3/m$ – h^9e

$SmRh_5Si_{3.17}$ [1]
Structural features: Infinite columns of base-linked $Si(Sm_2Rh_4)Rh_2$ bicapped and $Si(Sm_2Rh_4)Rh_3$ tricapped trigonal prisms share atoms to form a 3D-framework with triple propeller-like columns; additional Si (partial disorder) in channels of hexagonal cross-section parallel to [001]. Filled-up derivative of UCo_5Si_3.

Stepien Damm J. et al. (1998) [1]
$Rh_{15}Si_{9.50}Sm_3$
a = 1.564, c = 0.3384 nm, c/a = 0.216, V = 0.7169 nm^3, Z = 2

site	Wyck.	sym.	x	y	z	occ.	atomic environment
Rh1	6*h*	*m*..	0.0447	0.2743	$^1/_4$		11-vertex polyhedron $Si_4Rh_5Sm_2$
Si2	6*h*	*m*..	0.0634	0.4349	$^1/_4$		monocapped trigonal prism Rh_7
Rh3	6*h*	*m*..	0.122	0.1516	$^1/_4$		
Rh4	6*h*	*m*..	0.224	0.5726	$^1/_4$		square pyramid Si_5
Si5	6*h*	*m*..	0.2549	0.1218	$^1/_4$		monocapped trigonal prism Rh_7
Sm6	6*h*	*m*..	0.2963	0.3963	$^1/_4$		23-vertex polyhedron $Si_9Rh_{12}Sm_2$
Rh7	6*h*	*m*..	0.4167	0.2636	$^1/_4$		11-vertex polyhedron $Si_4Rh_5Sm_2$
Rh8	6*h*	*m*..	0.5368	0.0752	$^1/_4$		11-vertex polyhedron $Si_4Rh_5Sm_2$
Si9	6*h*	*m*..	0.5591	0.2405	$^1/_4$		10-vertex polyhedron $Rh_6Si_2Sm_2$
Si10	4*e*	3..	0	0	0.1761	0.25	

Transformation from published data: *y*,*x*,-*z*; origin shift 0 0 $^1/_2$
Experimental: single crystal, diffractometer, X-rays, R = 0.039

Remarks: Space group (168) *P*6 was tested and rejected (R = 0.036). Short interatomic distances for partly occupied site(s). A different atom arrangement along the c-axis is reported for $Ce_6Rh_{30}Si_{19}$ in [2].

References: [1] Stepien Damm J., Prots' Y., Salamakha P.S., Bodak O.I., Morozkin Y., Seropegin Y.D. (1998), J. Alloys Compd. 268, 177-179. [2] Tursina A.I., Gribanov A.V., Seropegin Y.D., Bodak O.I. (2004), J. Alloys Compd. 367, 142-145.