$Na_2(Na_{0.33}Pb_{0.67})_3[SO_4]_3Cl$	*hP*42	(176) $P6_3/m$ – ih^{4}fb

$Na_3Pb_2(SO_4)_3Cl$ [1], caracolite, apatite family; $Ca_2Pb_3(AsO_4)_3Cl$ [2], hedyphane
Structural features: Infinite columns of base-linked NaO_6O_3 tricapped trigonal prisms share atoms with SO_4 tetrahedra to form a 3D-framework; infinite columns of face-linked $Cl(Pb,Na)_6$ octahedra in channels parallel to [001].

Schneider W. (1967) [1]
$ClNa_3O_{12}Pb_2S_3$
a = 0.981, c = 0.714 nm, c/a = 0.728, V = 0.5951 nm^3, Z = 2

site	Wyck.	sym.	x	y	z	occ.	atomic environment
O1	12*i*	1	0.085	0.356	0.071		single atom S
S2	6*h*	*m*..	0.031	0.412	$^1/_4$		tetrahedron O_4
O3	6*h*	*m*..	0.119	0.579	$^1/_4$		single atom S
M4	6*h*	*m*..	0.2553	0.2456	$^1/_4$		non-coplanar triangle O_3
O5	6*h*	*m*..	0.495	0.12	$^1/_4$		single atom S
Na6	4*f*	3..	$^1/_3$	$^2/_3$	0.009		tricapped trigonal prism O_9
Cl7	2*b*	-3..	0	0	0		icosahedron Pb_6O_6

M4 = 0.667Pb + 0.333Na
Transformation from published data: origin shift 0 0 $^1/_2$
Experimental: single crystal, precession photographs, X-rays, R = 0.110

Remarks: Natural specimen from Caracoles, Chile, and synthetic crystals gave identical results. Contrary to earlier reports based on optical measurements, no deviation from hexagonal symmetry was detected for any of the crystals investigated in [1]. A fully ordered structure is reported for $Ca_2Pb_3(AsO_4)_3Cl$ [2].

References: [1] Schneider W. (1967), Neues Jahrb. Mineral., Monatsh. 1967, 284-289. [2] Rouse R.C., Dunn P.J., Peacor A.R. (1984), Am. Mineral. 69, 920-927.