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Dichlorido(5,10,15,20-tetraphenylporphyrinato- $\kappa^4 N$)antimony(V) hexachloridoantimonate(V)Raoudha Soury,^a Mohamed Salah Belkhiria,^{a*} Michel Giorgi^b and Habib Nasri^a^aLaboratoire de Physico-Chimie des Matériaux, Université de Monastir, Faculté des

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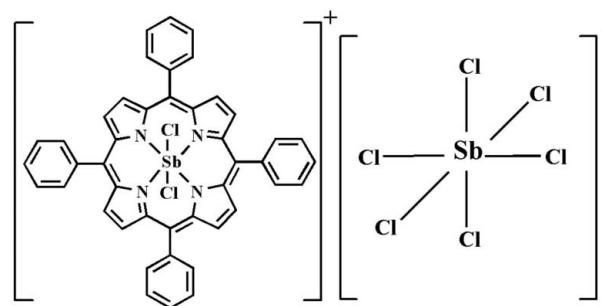
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Key indicators: single-crystal X-ray study; $T = 223$ K; mean $\sigma(C-C) = 0.010$ Å; R factor = 0.065; wR factor = 0.173; data-to-parameter ratio = 17.9.

The asymmetric unit of the title compound, $[Sb(C_{44}H_{28}N_4)Cl_2][SbCl_6]$, consists of one half of an antimony(V) tetraphenylporphyrin complex cation and one half of an hexachloridoantimonate(V) anion. In the complex cation, the Sb^V atom lies on an inversion center and is octahedrally coordinated by four N atoms from a macrocyclic tetraphenylporphyrinate ligand and two chloride ions. The complex cation has approximately a planar core with a maximum deviation of 0.018 (5) Å from the porphyrin mean plane. The average Sb—N distance is 2.062 (11) Å, while the Sb—Cl distance is 2.355 (1) Å. The Sb^V atom of the anion is also located on an inversion center. The $[SbCl_6]^-$ octahedron exhibits rhombic distortion characterized by the Sb—Cl bond lengths [2.311 (3), 2.374 (2) and 2.393 (4) Å]. In the crystal, the cations and anions are linked C—H...Cl hydrogen bonds, forming a layer parallel to (211).

Related literature

For general background and the synthesis, see: Liu *et al.* (1996). For related structures, see: Tsunami *et al.* (2008); Soury *et al.* (2012).

**Experimental***Crystal data* $[Sb(C_{44}H_{28}N_4)Cl_2][SbCl_6]$ $M_r = 1139.80$ Triclinic, $P\bar{1}$ $a = 10.2044$ (4) Å $b = 11.1242$ (4) Å $c = 11.3901$ (4) Å $\alpha = 70.685$ (2)° $\beta = 83.398$ (2)° $\gamma = 63.050$ (3)° $V = 1086.73$ (7) Å³ $Z = 1$ Mo $K\alpha$ radiation $\mu = 1.77$ mm⁻¹ $T = 223$ K $0.2 \times 0.16 \times 0.12$ mm*Data collection*

Bruker–Nonius KappaCCD diffractometer

Absorption correction: multi-scan

(SORTAV; Blessing, 1995)

 $T_{\min} = 0.723$, $T_{\max} = 0.773$

19871 measured reflections

4749 independent reflections

4433 reflections with $I > 2\sigma(I)$ $R_{\text{int}} = 0.124$ *Refinement* $R[F^2 > 2\sigma(F^2)] = 0.065$ $wR(F^2) = 0.173$ $S = 1.13$

4749 reflections

266 parameters

H-atom parameters constrained

 $\Delta\rho_{\max} = 2.55$ e Å⁻³ $\Delta\rho_{\min} = -1.45$ e Å⁻³**Table 1**

Hydrogen-bond geometry (Å, °).

$D-H\cdots A$	$D-H$	$H\cdots A$	$D\cdots A$	$D-H\cdots A$
C7—H7...Cl3 ⁱ	0.94	2.76	3.490 (8)	135
C8—H8...Cl4	0.94	2.74	3.593 (8)	151
C12—H12...Cl3 ⁱⁱ	0.94	2.69	3.539 (8)	151

Symmetry codes: (i) $-x, -y + 1, -z + 2$; (ii) $x, y, z - 1$.

Data collection: *COLLECT* (Nonius, 2002); cell refinement: *DENZO/SCALEPACK* (Otwinowski & Minor, 1997); data reduction: *DENZO/SCALEPACK*; program(s) used to solve structure: *SIR2004* (Burla *et al.*, 2005); program(s) used to refine structure: *SHELXL97* (Sheldrick, 2008); molecular graphics: *ORTEP-3 for Windows* (Farrugia, 2012); software used to prepare material for publication: *SHELXL97*.

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Supporting information for this paper is available from the IUCr electronic archives (Reference: IS5356).

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supporting information

Acta Cryst. (2014). E70, m256–m257 [https://doi.org/10.1107/S1600536814012653]

Dichlorido(5,10,15,20-tetraphenylporphyrinato- $\kappa^4\text{N}$)antimony(V) hexachloridoantimonate(V)

Raoudha Soury, Mohamed Salah Belkhiria, Michel Giorgi and Habib Nasri

S1. Comment

As part of our continuing studies of antimony porphyrin complexes (Soury *et al.*, 2012), we report here the synthesis and crystal structure of the title compound $[\text{Sb}(\text{tpp})\text{Cl}_2][\text{SbCl}_6]$ which appears to be the eleventh X-ray structure of an antimony porphyrin complex in the literature.

The molecular structures of the antimony(V) porphyrin cation $[\text{Sb}(\text{tpp})\text{Cl}_2]^+$ and the hexachloridoantimonate(V) $[\text{SbCl}_6]^-$ anion of the title compound are given in Figure 1. The Sb atom of the porphyrin complex lies on an inversion center and at the same time in the porphyrin mean plane (C_{24}N_4). The average Sb—N distance and the Sb—Cl distance values, respectively equal to 2.062 (4) Å and 2.355 (1) Å, agree very well with those reported in literature (Liu *et al.*, 1996; Tsunami *et al.*, 2008). The Sb atom of the counter-anion is located on an inversion center and has a rhombic distorted octahedral environment with three values of Sb—Cl bond lengths [2.311 (3), 2.374 (2) and 2.393 (4) Å]. Such bond distances are comparable to those observed for similar porphyrin complexes (Soury *et al.*, 2012). The cohesion of the structure is ensured by C—H \cdots Cl hydrogen bond interactions (Table 1). The crystal packing of compound $[\text{Sb}(\text{tpp})\text{Cl}_2][\text{SbCl}_6]$ is presented in Figure 2.

S2. Experimental

The title compound $[\text{Sb}(\text{tpp})\text{Cl}_2][\text{SbCl}_6]$ synthesis was performed under argon atmosphere. SbCl_5 (3–4 cm³) was added to a solution of tetraphenylporphyrin (H_2tpp) (500 mg, 0.814 mmol) in pyridine (25 cm³) and the resulting mixture was refluxed for 1 h. After removing pyridine and excess antimony pentachloride by rotary evaporation, the purple solid obtained was dissolved in dichloromethane and chromatographed on silica gel 60 (100 g, neutral, activity I). The reaction mixture was firstly eluted with CH_2Cl_2 to eliminate any free H_2tpp present and then the title compound was eluted as a purple band using CH_2Cl_2 -methanol (2%). Single red crystals of the title complex, suitable for X-ray diffraction, have been obtained by diffusion of hexanes in dichloromethane solution.

S3. Refinement

All H atoms were refined using a riding model with C—H = 0.93 Å and $U_{\text{iso}}(\text{H}) = 1.2U_{\text{eq}}(\text{C})$.

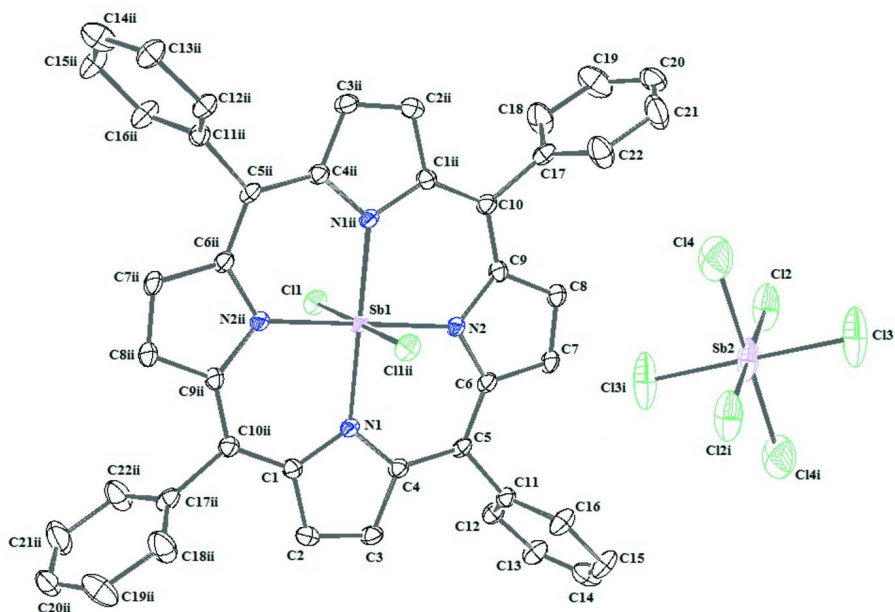


Figure 1

The molecular structure of the title compound with displacement ellipsoids drawn at 30% probability level. Hydrogen atoms have been omitted for clarity.

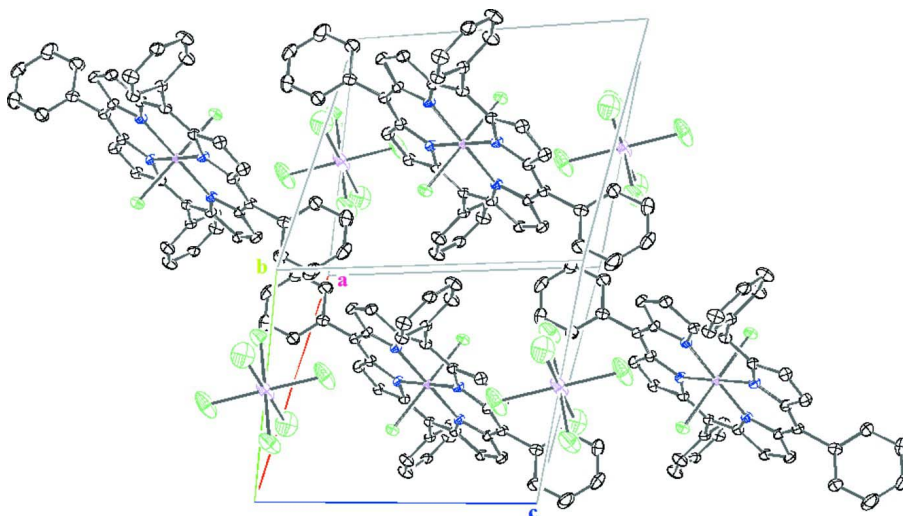


Figure 2

A crystal packing diagram of the title compound viewed along the *b* axis.

Dichlorido(5,10,15,20-tetraphenylporphyrinato- κ^4N)antimony(V) hexachloridoantimonate(V)

Crystal data

[Sb(C₄₄H₂₈N₄)Cl₂][SbCl₆]

$M_r = 1139.80$

Triclinic, $P\bar{1}$

Hall symbol: -P 1

$a = 10.2044(4) \text{ \AA}$

$b = 11.1242(4) \text{ \AA}$

$c = 11.3901(4) \text{ \AA}$

$\alpha = 70.685(2)^\circ$

$\beta = 83.398(2)^\circ$

$\gamma = 63.050(3)^\circ$

$V = 1086.73(7) \text{ \AA}^3$

$Z = 1$

$F(000) = 558$
 $D_x = 1.742 \text{ Mg m}^{-3}$
 Mo $K\alpha$ radiation, $\lambda = 0.71073 \text{ \AA}$
 Cell parameters from 22201 reflections
 $\theta = 1.9\text{--}30.1^\circ$

$\mu = 1.77 \text{ mm}^{-1}$
 $T = 223 \text{ K}$
 Prism, red
 $0.2 \times 0.16 \times 0.12 \text{ mm}$

Data collection

Bruker–Nonius KappaCCD
 diffractometer
 Radiation source: fine-focus sealed tube
 Graphite monochromator
 φ & ω scans
 Absorption correction: multi-scan
 (SORTAV; Blessing, 1995)
 $T_{\min} = 0.723$, $T_{\max} = 0.773$

19871 measured reflections
 4749 independent reflections
 4433 reflections with $I > 2\sigma(I)$
 $R_{\text{int}} = 0.124$
 $\theta_{\max} = 27.1^\circ$, $\theta_{\min} = 1.9^\circ$
 $h = -13 \rightarrow 13$
 $k = -14 \rightarrow 14$
 $l = -14 \rightarrow 14$

Refinement

Refinement on F^2
 Least-squares matrix: full
 $R[F^2 > 2\sigma(F^2)] = 0.065$
 $wR(F^2) = 0.173$
 $S = 1.13$
 4749 reflections
 266 parameters
 0 restraints
 Primary atom site location: structure-invariant
 direct methods
 Secondary atom site location: difference Fourier
 map

Hydrogen site location: inferred from
 neighbouring sites
 H-atom parameters constrained
 $w = 1/[\sigma^2(F_o^2) + (0.0507P)^2 + 7.0167P]$
 where $P = (F_o^2 + 2F_c^2)/3$
 $(\Delta/\sigma)_{\max} < 0.001$
 $\Delta\rho_{\max} = 2.55 \text{ e \AA}^{-3}$
 $\Delta\rho_{\min} = -1.45 \text{ e \AA}^{-3}$
 Extinction correction: SHELXL97 (Sheldrick,
 2008), $F_c^* = kF_c[1 + 0.001x F_c^2 \lambda^3 / \sin(2\theta)]^{-1/4}$
 Extinction coefficient: 0.042 (4)

Special details

Geometry. All s.u.'s (except the s.u. in the dihedral angle between two l.s. planes) are estimated using the full covariance matrix. The cell s.u.'s are taken into account individually in the estimation of s.u.'s in distances, angles and torsion angles; correlations between s.u.'s in cell parameters are only used when they are defined by crystal symmetry. An approximate (isotropic) treatment of cell s.u.'s is used for estimating s.u.'s involving l.s. planes.

Refinement. Refinement of F^2 against ALL reflections. The weighted R -factor wR and goodness of fit S are based on F^2 , conventional R -factors R are based on F , with F set to zero for negative F^2 . The threshold expression of $F^2 > 2\sigma(F^2)$ is used only for calculating R -factors(gt) etc. and is not relevant to the choice of reflections for refinement. R -factors based on F^2 are statistically about twice as large as those based on F , and R -factors based on ALL data will be even larger.

Fractional atomic coordinates and isotropic or equivalent isotropic displacement parameters (\AA^2)

	x	y	z	$U_{\text{iso}}^*/U_{\text{eq}}$
Sb1	0.5000	0.0000	0.5000	0.0226 (2)
N1	0.4725 (5)	0.1913 (5)	0.3693 (4)	0.0259 (9)
N2	0.3841 (5)	0.1056 (5)	0.6238 (4)	0.0261 (9)
C11	0.28107 (16)	0.02557 (17)	0.42325 (15)	0.0368 (4)
C1	0.5256 (6)	0.2093 (6)	0.2499 (5)	0.0278 (11)
C2	0.4834 (7)	0.3574 (7)	0.1912 (6)	0.0358 (13)
H2	0.5047	0.3994	0.1098	0.043*
C3	0.4073 (7)	0.4267 (6)	0.2732 (5)	0.0317 (12)
H3	0.3669	0.5251	0.2589	0.038*
C4	0.3993 (6)	0.3234 (6)	0.3857 (5)	0.0270 (11)

C5	0.3287 (6)	0.3531 (5)	0.4932 (5)	0.0265 (11)
C6	0.3224 (6)	0.2509 (6)	0.6023 (5)	0.0273 (11)
C7	0.2497 (6)	0.2797 (6)	0.7118 (6)	0.0312 (12)
H7	0.1987	0.3696	0.7229	0.037*
C8	0.2678 (7)	0.1537 (7)	0.7969 (6)	0.0341 (13)
H8	0.2310	0.1416	0.8774	0.041*
C9	0.3518 (7)	0.0429 (6)	0.7440 (5)	0.0292 (11)
C10	0.3941 (6)	-0.1013 (6)	0.8037 (5)	0.0286 (11)
C11	0.2526 (6)	0.5050 (6)	0.4938 (5)	0.0287 (11)
C12	0.1165 (7)	0.5944 (6)	0.4362 (6)	0.0322 (12)
H12	0.0745	0.5636	0.3899	0.039*
C13	0.0393 (7)	0.7315 (7)	0.4458 (7)	0.0396 (14)
H13	-0.0549	0.7946	0.4082	0.047*
C14	0.1080 (8)	0.7667 (9)	0.5117 (6)	0.0467 (17)
H14	0.0566	0.8583	0.5192	0.056*
C15	0.2426 (8)	0.6865 (7)	0.5688 (8)	0.0437 (16)
H15	0.2841	0.7212	0.6114	0.052*
C16	0.3165 (8)	0.5489 (7)	0.5611 (7)	0.0427 (15)
H16	0.4093	0.4865	0.6015	0.051*
C17	0.3501 (6)	-0.1422 (6)	0.9394 (6)	0.0314 (12)
C18	0.2256 (10)	-0.1633 (11)	0.9654 (7)	0.059 (2)
H18	0.1746	-0.1651	0.9028	0.070*
C19	0.1769 (11)	-0.1821 (12)	1.0868 (8)	0.070 (3)
H19	0.0911	-0.1949	1.1067	0.084*
C20	0.2564 (10)	-0.1816 (8)	1.1781 (7)	0.054 (2)
H20	0.2231	-0.1922	1.2596	0.064*
C21	0.3802 (12)	-0.1662 (12)	1.1503 (7)	0.068 (3)
H21	0.4348	-0.1698	1.2136	0.081*
C22	0.4296 (10)	-0.1447 (11)	1.0289 (7)	0.054 (2)
H22	0.5156	-0.1323	1.0096	0.065*
Sb2	0.0000	0.5000	1.0000	0.0698 (4)
Cl2	-0.2299 (3)	0.5140 (4)	1.0805 (3)	0.0961 (11)
Cl3	0.0724 (3)	0.4837 (5)	1.1918 (3)	0.1218 (17)
Cl4	0.0999 (5)	0.2463 (5)	1.0692 (4)	0.1156 (13)

Atomic displacement parameters (\AA^2)

	U^{11}	U^{22}	U^{33}	U^{12}	U^{13}	U^{23}
Sb1	0.0246 (3)	0.0192 (3)	0.0262 (3)	-0.0102 (2)	0.00596 (18)	-0.01060 (19)
N1	0.031 (2)	0.020 (2)	0.029 (2)	-0.0120 (19)	0.0057 (18)	-0.0106 (17)
N2	0.030 (2)	0.021 (2)	0.028 (2)	-0.0111 (19)	0.0079 (18)	-0.0115 (17)
Cl1	0.0294 (7)	0.0389 (8)	0.0467 (8)	-0.0157 (6)	0.0003 (6)	-0.0178 (6)
C1	0.030 (3)	0.026 (3)	0.027 (2)	-0.012 (2)	0.007 (2)	-0.009 (2)
C2	0.044 (3)	0.031 (3)	0.032 (3)	-0.020 (3)	0.007 (2)	-0.007 (2)
C3	0.035 (3)	0.021 (3)	0.036 (3)	-0.011 (2)	0.001 (2)	-0.007 (2)
C4	0.027 (3)	0.023 (2)	0.031 (3)	-0.010 (2)	0.005 (2)	-0.010 (2)
C5	0.027 (3)	0.018 (2)	0.036 (3)	-0.008 (2)	0.003 (2)	-0.013 (2)
C6	0.029 (3)	0.023 (2)	0.033 (3)	-0.011 (2)	0.004 (2)	-0.013 (2)

C7	0.032 (3)	0.027 (3)	0.036 (3)	-0.010 (2)	0.011 (2)	-0.020 (2)
C8	0.039 (3)	0.034 (3)	0.033 (3)	-0.016 (3)	0.014 (2)	-0.020 (2)
C9	0.031 (3)	0.031 (3)	0.029 (3)	-0.014 (2)	0.011 (2)	-0.016 (2)
C10	0.031 (3)	0.026 (3)	0.031 (3)	-0.014 (2)	0.007 (2)	-0.012 (2)
C11	0.030 (3)	0.027 (3)	0.032 (3)	-0.014 (2)	0.008 (2)	-0.013 (2)
C12	0.028 (3)	0.025 (3)	0.042 (3)	-0.007 (2)	0.001 (2)	-0.014 (2)
C13	0.027 (3)	0.029 (3)	0.060 (4)	-0.005 (2)	0.002 (3)	-0.021 (3)
C14	0.034 (3)	0.064 (5)	0.043 (3)	-0.032 (3)	0.002 (3)	-0.003 (3)
C15	0.037 (3)	0.032 (3)	0.070 (5)	-0.012 (3)	-0.003 (3)	-0.030 (3)
C16	0.039 (3)	0.030 (3)	0.062 (4)	-0.010 (3)	-0.008 (3)	-0.021 (3)
C17	0.026 (3)	0.022 (2)	0.046 (3)	-0.008 (2)	0.003 (2)	-0.016 (2)
C18	0.061 (5)	0.096 (7)	0.046 (4)	-0.056 (5)	0.021 (4)	-0.029 (4)
C19	0.056 (5)	0.093 (7)	0.054 (5)	-0.040 (5)	0.025 (4)	-0.013 (5)
C20	0.072 (5)	0.045 (4)	0.035 (3)	-0.025 (4)	0.023 (3)	-0.012 (3)
C21	0.090 (7)	0.098 (8)	0.034 (4)	-0.055 (6)	0.015 (4)	-0.028 (4)
C22	0.055 (5)	0.088 (6)	0.038 (3)	-0.048 (5)	0.013 (3)	-0.023 (4)
Sb2	0.0346 (4)	0.1176 (8)	0.0807 (6)	-0.0245 (4)	0.0141 (4)	-0.0767 (6)
Cl2	0.0491 (13)	0.171 (3)	0.110 (2)	-0.0501 (17)	0.0332 (13)	-0.103 (2)
Cl3	0.0586 (15)	0.222 (5)	0.119 (2)	-0.039 (2)	0.0162 (15)	-0.133 (3)
Cl4	0.116 (3)	0.121 (3)	0.112 (3)	-0.034 (2)	0.039 (2)	-0.075 (2)

Geometric parameters (Å, °)

Sb1—N2 ⁱ	2.054 (4)	C11—C16	1.379 (9)
Sb1—N2	2.054 (4)	C12—C13	1.400 (8)
Sb1—N1	2.070 (4)	C12—H12	0.9400
Sb1—N1 ⁱ	2.070 (4)	C13—C14	1.332 (10)
Sb1—C11 ⁱ	2.3547 (14)	C13—H13	0.9400
Sb1—C11	2.3547 (14)	C14—C15	1.347 (10)
N1—C4	1.380 (7)	C14—H14	0.9400
N1—C1	1.390 (7)	C15—C16	1.396 (9)
N2—C6	1.386 (7)	C15—H15	0.9400
N2—C9	1.394 (7)	C16—H16	0.9400
C1—C10 ⁱ	1.402 (8)	C17—C22	1.359 (10)
C1—C2	1.429 (8)	C17—C18	1.377 (10)
C2—C3	1.356 (9)	C18—C19	1.395 (11)
C2—H2	0.9400	C18—H18	0.9400
C3—C4	1.434 (8)	C19—C20	1.394 (14)
C3—H3	0.9400	C19—H19	0.9400
C4—C5	1.406 (8)	C20—C21	1.339 (13)
C5—C6	1.398 (8)	C20—H20	0.9400
C5—C11	1.508 (7)	C21—C22	1.398 (10)
C6—C7	1.430 (8)	C21—H21	0.9400
C7—C8	1.359 (9)	C22—H22	0.9400
C7—H7	0.9400	Sb2—Cl3	2.311 (3)
C8—C9	1.426 (8)	Sb2—Cl3 ⁱⁱ	2.311 (3)
C8—H8	0.9400	Sb2—Cl2 ⁱⁱ	2.374 (2)
C9—C10	1.393 (8)	Sb2—Cl2	2.374 (2)

C10—C1 ⁱ	1.402 (8)	Sb2—C14	2.393 (4)
C10—C17	1.536 (8)	Sb2—C14 ⁱⁱ	2.393 (4)
C11—C12	1.369 (8)		
N2 ⁱ —Sb1—N2	180.00 (16)	C12—C11—C16	120.6 (6)
N2 ⁱ —Sb1—N1	90.19 (18)	C12—C11—C5	120.1 (5)
N2—Sb1—N1	89.81 (18)	C16—C11—C5	119.1 (5)
N2 ⁱ —Sb1—N1 ⁱ	89.81 (18)	C11—C12—C13	120.5 (6)
N2—Sb1—N1 ⁱ	90.19 (18)	C11—C12—H12	119.8
N1—Sb1—N1 ⁱ	180.0 (2)	C13—C12—H12	119.8
N2 ⁱ —Sb1—C11 ⁱ	90.57 (14)	C14—C13—C12	115.6 (7)
N2—Sb1—C11 ⁱ	89.43 (14)	C14—C13—H13	122.2
N1—Sb1—C11 ⁱ	89.98 (14)	C12—C13—H13	122.2
N1 ⁱ —Sb1—C11 ⁱ	90.02 (14)	C13—C14—C15	127.7 (8)
N2 ⁱ —Sb1—C11	89.43 (14)	C13—C14—H14	116.2
N2—Sb1—C11	90.57 (14)	C15—C14—H14	116.2
N1—Sb1—C11	90.02 (14)	C14—C15—C16	116.0 (7)
N1 ⁱ —Sb1—C11	89.98 (14)	C14—C15—H15	122.0
C11 ⁱ —Sb1—C11	180.0	C16—C15—H15	122.0
C4—N1—C1	108.0 (4)	C11—C16—C15	119.6 (6)
C4—N1—Sb1	126.0 (4)	C11—C16—H16	120.2
C1—N1—Sb1	126.0 (4)	C15—C16—H16	120.2
C6—N2—C9	108.0 (4)	C22—C17—C18	122.1 (6)
C6—N2—Sb1	126.3 (4)	C22—C17—C10	118.2 (6)
C9—N2—Sb1	125.6 (4)	C18—C17—C10	119.5 (6)
N1—C1—C10 ⁱ	126.1 (5)	C17—C18—C19	118.5 (8)
N1—C1—C2	107.9 (5)	C17—C18—H18	120.7
C10 ⁱ —C1—C2	126.0 (5)	C19—C18—H18	120.7
C3—C2—C1	108.1 (5)	C20—C19—C18	119.4 (8)
C3—C2—H2	125.9	C20—C19—H19	120.3
C1—C2—H2	125.9	C18—C19—H19	120.3
C2—C3—C4	107.9 (5)	C21—C20—C19	120.4 (7)
C2—C3—H3	126.0	C21—C20—H20	119.8
C4—C3—H3	126.0	C19—C20—H20	119.8
N1—C4—C5	126.6 (5)	C20—C21—C22	121.1 (8)
N1—C4—C3	108.1 (5)	C20—C21—H21	119.4
C5—C4—C3	125.4 (5)	C22—C21—H21	119.4
C6—C5—C4	124.6 (5)	C17—C22—C21	118.4 (7)
C6—C5—C11	116.2 (5)	C17—C22—H22	120.8
C4—C5—C11	119.2 (5)	C21—C22—H22	120.8
N2—C6—C5	126.6 (5)	C13—Sb2—C13 ⁱⁱ	180.000 (1)
N2—C6—C7	108.1 (5)	C13—Sb2—C12 ⁱⁱ	90.36 (11)
C5—C6—C7	125.3 (5)	C13 ⁱⁱⁱ —Sb2—C12 ⁱⁱ	89.64 (11)
C8—C7—C6	107.7 (5)	C13—Sb2—C12	89.64 (11)
C8—C7—H7	126.2	C13 ⁱⁱⁱ —Sb2—C12	90.36 (11)
C6—C7—H7	126.2	C12 ⁱⁱ —Sb2—C12	180.0
C7—C8—C9	108.7 (5)	C13—Sb2—C14	87.99 (16)
C7—C8—H8	125.7	C13 ⁱⁱⁱ —Sb2—C14	92.01 (16)

C9—C8—H8	125.7	C12 ⁱⁱ —Sb2—C14	90.45 (14)
C10—C9—N2	127.0 (5)	C12—Sb2—C14	89.55 (14)
C10—C9—C8	125.5 (5)	C13—Sb2—C14 ⁱⁱ	92.01 (16)
N2—C9—C8	107.5 (5)	C13 ⁱⁱ —Sb2—C14 ⁱⁱ	87.99 (16)
C9—C10—C1 ⁱ	125.1 (5)	C12 ⁱⁱ —Sb2—C14 ⁱⁱ	89.55 (14)
C9—C10—C17	116.2 (5)	C12—Sb2—C14 ⁱⁱ	90.45 (14)
C1 ⁱ —C10—C17	118.7 (5)	C14—Sb2—C14 ⁱⁱ	180.000 (1)

Symmetry codes: (i) $-x+1, -y, -z+1$; (ii) $-x, -y+1, -z+2$.

Hydrogen-bond geometry ($\text{\AA}, ^\circ$)

$D-H\cdots A$	$D-H$	$H\cdots A$	$D\cdots A$	$D-H\cdots A$
C7—H7 \cdots C13 ⁱⁱ	0.94	2.76	3.490 (8)	135
C8—H8 \cdots C14	0.94	2.74	3.593 (8)	151
C12—H12 \cdots C13 ⁱⁱⁱ	0.94	2.69	3.539 (8)	151

Symmetry codes: (ii) $-x, -y+1, -z+2$; (iii) $x, y, z-1$.