

Synthesis, Crystal Structure and Non-covalent Interactions of New Organotin(IV) Complex with Hydrazone Ligand

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Hydrazones are important Schiff bases in bioinorganic and coordination chemistry due to their versatility, and these ligands are derived from a class of biologically active drugs important for medicinal chemistry, highlighting their extensive pharmacological property, including antitumor, antiviral and antituberculosis activities.^{1,2} A considerable number of organotin(IV) complexes with hydrazone ligands have been intensively studied for their bactericidal and antitumor activities.³ The present work reports the synthesis, crystal structure, and investigation of non-covalent interactions of new organotin(IV) complex $[\text{Sn}(\text{L})\text{Me}_2\text{Cl}]$ with 2-acetylpyridinenicotinhydrazone (HL). The Sn(IV) atom is coordinated by a bidentate ligand molecule by the *NO*-donor system, two methyl groups, and a chloride ion. Additionally, a chloride intermolecular interaction with the metal center is observed resulting in a distorted pseudo-octahedral geometry (Figure 1a). Non-covalent interactions in the structure were evaluated with Hirshfeld surface analysis, showing strong red regions which indicate the presence of $\text{C-H}\cdots\text{Cl}$ and $\text{Sn}\cdots\text{Cl}$ interactions (Figure 1b).

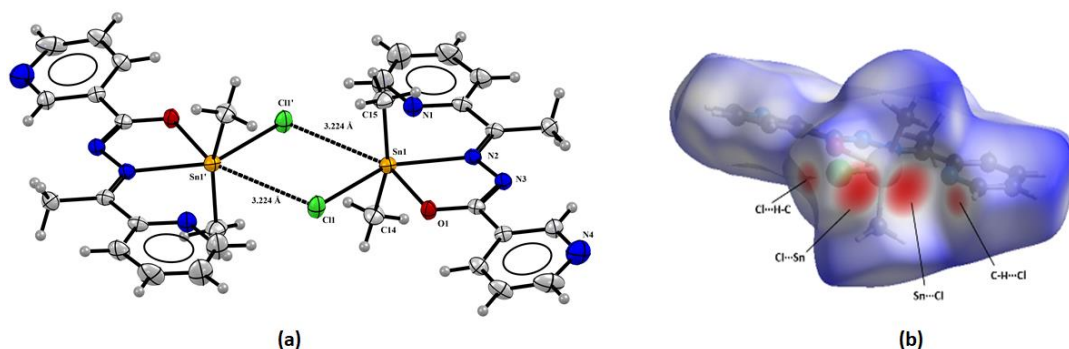


Figure 1. (a) Molecular structure of $[\text{Sn}(\text{L})\text{Me}_2\text{Cl}]$ with 30% probability displacement ellipsoids and interactions represented by dashed lines. (b) Hirshfeld surface mapped with d_{norm} for the complex.

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References

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