Crystal Structure of Trimethyltin hydroxide, $(CH_3)_3SnOH$

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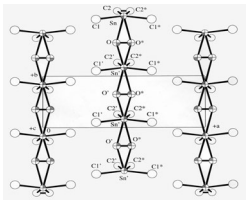
It has been reported that **$(CH_3)_3SnOH$** has many incommensurate structures in crystalline state. So far, the precise structure analysis has not been reported. Only one X-ray crystal structure analysis without three dimensional coordinates available has been reported. [1]

We took a X-ray structure analysis of title compound to get a information of incommensurateness using a Rigaku RAXIS-RAPID Imaging Plate diffractometer with graphite Mo-Kαradiation.

As this compound is very unstable in air, crystal was sealed in a capillary under nitrogen atmosphere in a glove box.

Crystal data of $(CH_3)_3SnOH$: Orthorhombic, $Pmn2_1$, a = 11,207(1) Å, b = 4.171(1) Å, c = 6.652(1) Å, V = 310.9(1) Å ^{3}, Z = 2, R= 0.140.



The obtained crystal structure is shown in figure. This complex has an infinite chain structure throughthe bridging trimethyltin groups by hydroxide groups along the b axis. The co-ordination of each tin atom is approximate trigonal bipyramidal with two hydroxide groups and three methyl groups essentially. Due to the mirror symmetry perpendicular to the a axis passing through the tin atom, this complex takes the disordered structure consequently.

[1] Kasai N., et al., *J. Organometal. Chem*., 1965, **3**, 172.

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