## Polymorphism of Yttrium Threemethilacetate

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Rare-earth threemethilacetates are of interest to inorganic chemistry because of molecular type of structure and ability to sublimate under heating.

First modification of yttrium threemethilacetate with  $P2_{l}/n$ , a=16.401(8), b=11.906(5), c=20.220(9) Å, β=108.73(4), Z=4, R=0.1367 was synthesized according to the reaction of yttrium carbonate and excess of threemethilacetic acid. Second one with  $P2_{l}/c$ , a=21.617(4), b=36.559(4), c=29.930(4) Å,  $\beta$ =104.40(2), Z=12, R=0.0501 was obtained as a result of co-crystallization of calcium and yttrium threemethilacetate mixture (Ca:Y = 4:1 mol) from threemethilacetic acid solution. The two molecular type modifications packing of centrosymmetric differ in the dimers  $Y_2[(CH_3)_3CCOO]_6 \cdot 6(CH_3)_3CCOOH$ . Within the dimers two yttrium atoms are linked by four bridging anions (CH<sub>3</sub>)<sub>3</sub>CCOO<sup>-</sup>. The other anions and neutral acid molecules are unidentate mode ligands (coordination number of yttrium atoms is eight).

Keywords: yttrium threemethilacetate, polymorphism, molecular structure