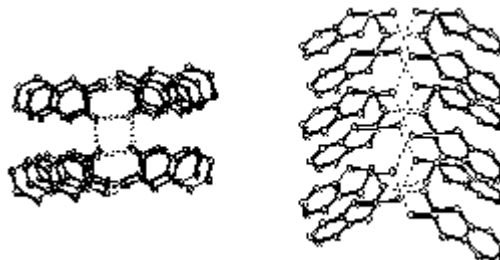


W0110

Solid-State Compound Formation between Stereoisomers: 2,3-Tetralindiol. Carolyn P. Brock, Sean Parkin, Brian Patrick, Dept. of Chemistry, Univ. of Kentucky, Lexington, KY 40506-0055, USA.

The existence of a 1:1 compound of *cis* and *trans*-2,3-tetralindiol, which represents a striking failure of fractional crystallization, was reported by Leroux in 1909, but the structure of this compound is unpublished. The compound dominates the ternary phase diagram (*cis* isomer and resolvable *trans* isomers; Lettré & Lerch, 1952), but its crystals grow as very small needles, which are both disordered and twinned. Data that refined satisfactorily were finally obtained using Cu radiation from a rotating-anode source.



Columns of H-bonded tetrameric units related by translation make up the structure; each unit contains two *cis* and two *trans* isomers. The overall packing and most of the H-bonding pattern can be maintained when *cis* and *trans* isomers are switched. While the isomers appear to be totally disordered, more detailed analysis indicates that a crystal containing only one of the *trans* enantiomers might be fully ordered.

Comparisons of this structure with the structures of the pure *cis* and enantiomerically pure *trans* isomers suggest reasons for the surprising stability of the *cis-trans* compound. The structure of the *trans* racemate remains unknown.

Leroux (1909). *Comptes Rendus* **148**, 931-933. Lettré, H. & Lerch, I. (1952). *Chem. Ber.* **85**, 394-397.