

Synthesis and Solid-state Structure of 2,2,2',2'-(Tetrahydroxymethyl)-dibutylether (Di-TMP), an Environmentally Benign Polymer Crosslinker and High-potential Additive for Lubricants

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The crystal structure of the industrially relevant tetrahydroxy ether 2,2,2',2'-(tetrahydroxymethyl)-dibutylether (technically known as di(trimethylol)propane, Di-TMP; C₁₂H₂₆O₅) was determined from single-crystal X-ray data at 123 K: monoclinic, space group *C2/c* (no. 15), *a* = 20.1202(13), *b* = 5.8169(4), *c* = 13.0323(8) Å, β = 114.296(3)°, *V* = 1390.17(16) Å³ and *Z* = 4. The adjacent molecules assemble into a two-dimensional framework in the solid state, linked by two intermolecular O–H···O hydrogen bonds. The compound is characterized *via* spectroscopic methods and mass spectrometry.

Key words: Crystal Structure, Di-TMP, Polyol,
Symmetric Ether