



**CAS Registry Number:** 69225-59-8

**Molecular Formula:** C<sub>11</sub>H<sub>18</sub>O<sub>3</sub>

**Molecular Weight:** 198.261

**Accurate Mass:** 198.125595

**Percentage Composition:** C 66.64%; H 9.15%; O 24.21%

**Use/Importance:** Useful synthetic intermediate

**Physical Description:** Cryst. (hexane)

**Melting Point:** Mp 48-49.5°

>>**Derivative:** Bis(ethylene ketal)

**Synonym(s):** 1,4,9,12-Tetraoxadispiro[4.2.4.2]tetradecane

**CAS Registry Number:** 183-97-1

**Molecular Formula:** C<sub>10</sub>H<sub>16</sub>O<sub>4</sub>

**Molecular Weight:** 200.234

**Accurate Mass:** 200.10486

**Percentage Composition:** C 59.98%; H 8.05%; O 31.96%

**Melting Point:** Mp 79-80°

**Boiling Point:** Bp<sub>0.5</sub> 75-85°

**Aldrich:** 29874-3

**Rare Chemicals Library:** S74161-2

#### References:

*Aldrich Library of 13C and 1H FT NMR Spectra*, 1992, **1**, 722C, (nmr)

*Aldrich Library of FT-IR Spectra, 1st edn.*, 1985, **1**, 450C, (ir)

*Aldrich Library of FT-IR Spectra: Vapor Phase*, 1989, **3**, 330B, (ir)

Meerwein, H., *Annalen*, 1913, **398**, 248, (synth)

Liebermann, H., *Annalen*, 1914, **404**, 272, (synth)

*Org. Synth.*, 1965, **45**, 25, (synth)

*Fieser and Fieser's Reagents for Organic Synthesis*, Wiley, 1969, **2**, 93

Dowd, P. *et al.*, *J.A.C.S.*, 1970, **92**, 6327, (conformn)

Olah, G.A. *et al.*, *J.O.C.*, 1975, **40**, 2102, (cmr)

Mussini, P. *et al.*, *Synth. Commun.*, 1975, **5**, 283, (synth)

Marshall, J. *et al.*, *Synth. Commun.*, 1979, **9**, 123, (deriv)

Roman Ceba, M. *et al.*, *Microchem. J.*, 1982, **27**, 380, (synth, detn, Cu)

Kamenka, J.-M. *et al.*, *Bull. Soc. Chim. Fr.*, Part II, 1983, 87, (acetal)

Hyatt, J.A. *et al.*, *J.O.C.*, 1983, **48**, 129, (deriv)