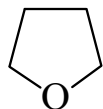




>>Entry Name: Tetrahydrofuran, 9CI, 8CI

Synonym(s): Tetramethylene oxide. Oxolan. Furanidine. THF



CAS Registry Number: 109-99-9

Related CAS Registry Numbers(s): 1693-74-9

Molecular Formula: C<sub>4</sub>H<sub>8</sub>O

Molecular Weight: 72.107

Accurate Mass: 72.057515

Percentage Composition: C 66.63%; H 11.18%; O 22.19%

Source/Synthesis: Usually manuf. from 1,4-Butanediol [CXB70-Y](#): a new process (1992) operated by Du Pont involves hardened-catalyst oxidn. of butane

Use/Importance: Extensively-used solvent. Useful for reactions involving organo-Li compds. and Grignard reagents. Precursor for polyether glycols, intermed. in manuf. of Tetrahydrothiophene [CSV56-L](#). Used as an extraction solvent e.g. for Fe(III)-SCN complex

Physical Description: Liq. with characteristic ethereal-type odour

Melting Point: Mp -108°

Boiling Point: Bp 67°

Solubility: Misc. most org. solvents; mod. sol. H<sub>2</sub>O

Density: d<sub>4</sub><sup>21</sup> 0.888

Refractive Index: n<sub>D</sub><sup>20</sup> 1.4070

Other Data: Vp 162 mmHg (25°). Because of the ease of peroxide formation, usually shipped and stored in the presence of an inhibitor such as 2,6-di-*tert*-butyl-4-methylphenol. Undergoes cationic ring-opening polym. to give polytetramethylene glycol used in the manuf. of polyurethane foams. Ceiling temp. for polym. of pure liq., T<sub>c</sub> 80 ° (1 atm.)

**Hazard & Toxicity:** Highly flammable, fl. p. -17°, autoignition temp. 224°. Forms explosive peroxides. Eye and mucous membrane irritant. High vapour conc. narcotic. LC<sub>50</sub> (rat, ihl) 21000 ppm (3h exposure). LD<sub>50</sub> (rat, orl) 1650 mg/kg. OES: long-term 200 ppm; short-term 250 ppm (current); long-term 100 ppm; short-term 200 ppm (Sk, proposed)

Aldrich: 27038-5

Fluka: 87367

Sigma: T4303

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