

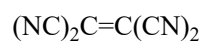


>>Entry Name: Tetracyanoethylene

Synonym(s): Ethenetetra carbonitrile, 9CI. Tetracyanoethene. TCNE

CAS Registry Number: 670-54-2

Related CAS Registry Numbers(s): 1446-08-8 2605-01-8 34512-48-6



Molecular Formula: C₆N₄

Molecular Weight: 128.093

Accurate Mass: 128.012296

Percentage Composition: C 56.26%; N 43.74%

Use/Importance: Very reactive dienophile. Forms π -complexes with aromatic compds. Used for photometric detn. of tertiary amines, aromatic hydrocarbons and org. sulfur compds. Plasma polym. gives electrically conducting films

Physical Description: Cryst. (PhCl)

Melting Point: Mp 198-200°

Boiling Point: Bp 223°

Other Data: Burns in oxygen with a hotter flame than acetylene. Polym. in the presence of complex-forming metals

Hazard & Toxicity: LD₅₀ (mus, orl) 29 mg/kg. Hydrol. in moist air to form HCN

Aldrich: T880-9

Fluka: 87120

Sigma: T5885

References:

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 845A, (ir)

Cairns, T.L. *et al.*, *Angew. Chem.*, 1961, **73**, 520

Org. Synth., Coll. Vol., 4, 1963, 877, (synth)

Berlin, A.A. *et al.*, *Inorg. Macromol. Rev.*, 1971, **1**, 235, (rev, polym)

Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1977, **6**, 567

Obtemperanskaya, S. *et al.*, *Zh. Anal. Khim.*, 1979, **34**, 1618; 1982, **37**, 491, (use)

Tawa, R. *et al.*, *Chem. Pharm. Bull.*, 1980, **28**, 541, (use)

Fatiadi, A.J., *Synthesis*, 1986, 249, (rev)

Petrowitz, H.J. *et al.*, *Fresenius' Z. Anal. Chem.*, 1988, **330**, 126, (use)

Osada, Y. *et al.*, *J. Polym. Sci., Part A: Polym. Chem.*, 1989, **27**, 3799, (plasma polym)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials, 8th edn.*, Van Nostrand Reinhold, 1992, EEE500