



>>Entry Name: Tetrakis(acetonitrile)copper(1+), 9Cl

**CAS Registry Number:** 16685-09-9  
(H<sub>3</sub>CCN)<sub>4</sub>Cu<sup>(+)</sup>

**Molecular Formula:** C<sub>8</sub>H<sub>12</sub>CuN<sub>4</sub><sup>(+)</sup>

**Molecular Weight:** 227.756

**Accurate Mass:** 227.045794

**Percentage Composition:** C 42.19%; H 5.31%; Cu 27.90%; N 24.60%

**Use/Importance:** Used for synth. of many Cu<sup>I</sup> complexes, including heterometallics, and for ketone oxygenation

>>Derivative: Perchlorate

**CAS Registry Number:** 14057-91-1

**Physical Description:** Cryst.

**Melting Point:** Mp 164-166°

**Solubility:** Sol. MeCN

**Hazard & Toxicity:** Potentially explosive

>>Derivative: Hexafluorophosphate

**CAS Registry Number:** 64443-05-6

**Molecular Formula:** C<sub>8</sub>H<sub>12</sub>CuF<sub>6</sub>N<sub>4</sub>P

**Molecular Weight:** 372.72

**Accurate Mass:** 372.009974

**Percentage Composition:** C 25.78%; H 3.25%; Cu 17.05%; F 30.58%; N 15.03%; P 8.31%

**Use/Importance:** Used for synth. of Cu(I) complexes in nonaqueous media

**Physical Description:** Cryst. (MeCN/Et<sub>2</sub>O at -20°)

**Melting Point:** Mp 160 dec.°

**Solubility:** Mod. sol. polar org. solvs.

**Other Data:** Air-sensitive as solid

**Aldrich:** 34627-6

>>Derivative: Tetrafluoroborate

**CAS Registry Number:** 15418-29-8

**Source/Synthesis:** Synth. from Cu<sub>2</sub>O + HBF<sub>4</sub> in MeCN in an inert atm.

**Physical Description:** Cryst. (CH<sub>2</sub>Cl<sub>2</sub>/diisopropyl ether)

**Melting Point:** Mp 159-161°

#### References:

- Hathaway, B.J. *et al.*, *J.C.S.*, 1961, 3215-3218, (*synth, ir*)  
Maspero, F. *et al.*, *J. Organomet. Chem.*, 1972, **38**, C43, (*use*)  
Csoregh, I. *et al.*, *Acta Cryst. B*, 1975, **31**, 314, (*perchlorate, cryst struct*)  
Eller, P.G. *et al.*, *J.A.C.S.*, 1977, **99**, 4346, (*use*)  
*Inorg. Synth.*, 1979, **19**, 90, (*synth*)  
Simmons, M.G. *et al.*, *J.C.S. Dalton*, 1980, 1827-1837, (*synth*)  
Kitagawa, S. *et al.*, *Inorg. Chem.*, 1984, **23**, 4388-4390, (*Cu-63 nmr*)  
Della Rergola, R. *et al.*, *Inorg. Chem.*, 1993, **32**, 3670-3674, (*heterometallics*)  
Moucheron, C. *et al.*, *J.C.S. Dalton*, 1994, 885-893, (*use*)  
Constable, E.C. *et al.*, *J.C.S. Dalton*, 1994, 2669-2677, (*use*)  
Lee, D.-H. *et al.*, *Inorg. Chem.*, 1996, **35**, 804-805, (*org use*)  
Jones, P.L. *et al.*, *Inorg. Chem.*, 1997, **36**, 3088-3095, (*synthetic use*)  
Jones, P.G. *et al.*, *Acta Cryst. C*, 1998, **54**, 18-20, (*cryst struct*)  
Striejewski, W.S. *et al.*, *Chem. Comm.*, 1998, 555-556, (*use*)