



>>Entry Name: Hexacarbonylvanadate(1-)

CAS Registry Number: 20644-87-5

$[\text{V}(\text{CO})_6]^{(-)}$

Molecular Formula: $\text{C}_6\text{O}_6\text{V}^{(-)}$

Molecular Weight: 219.004

Accurate Mass: 218.913452

Percentage Composition: C 32.91%; O 43.83%; V 23.26%

Use/Importance: Catalyst in manuf. of carbon fibres

>>Derivative: (Diglyme)₂Na salt

CAS Registry Number: 15531-13-2

Molecular Formula: $\text{C}_{18}\text{H}_{28}\text{NaO}_{12}\text{V}$

Molecular Weight: 510.343

Percentage Composition: C 42.36%; H 5.53%; Na 4.50%; O 37.62%; V 9.98%

Physical Description: Yellow solid

Melting Point: Mp 173-176 dec.° (under N₂)

Solubility: Sol. H₂O

>>Derivative: Et₄N salt

CAS Registry Number: 13985-78-9

Source/Synthesis: Synth. from $\text{NaC}_{14}\text{H}_{10} + \text{VCl}_3(\text{THF})_3$ in THF, followed by reaction with CO then Et₄NBr

Physical Description: Yellow powder

Other Data: Dec. >173°

>>Derivative: Tris(triphenylphosphine)copper(1+) salt

CAS Registry Number: 98542-02-0

Molecular Formula: $\text{C}_{60}\text{H}_{45}\text{CuO}_6\text{P}_3\text{V}$

Molecular Weight: 1069.42

Accurate Mass: 1068.126461

Percentage Composition: C 67.39%; H 4.24%; Cu 5.94%; O 8.98%; P 8.69%; V 4.76%

Source/Synthesis: Synth. from $[\text{Na}(\text{diglyme})_2][\text{V}(\text{CO})_6]$ and $(\text{Ph}_3\text{P})_2\text{CuCl}$ in CH₂Cl₂

Physical Description: Bright yellow cryst. (toluene)

Other Data: Struct. consists of discrete trigonal cations and octahedral anions

References:

Werner, R.P.M. *et al.*, *Chem. Ind. (London)*, 1961, 144, (*synth, ir*)

Ellis, J.E. *et al.*, *Inorg. Chem.*, 1980, **19**, 1082-1085, (*synth, Et₄N salt*)

Doyle, G. *et al.*, *Organometallics*, 1985, **4**, 2201, (*synth, ir, cryst struct, (Ph₃P)₃Cu salt*)

Japan. Pat., 1986, 61 266 618; *CA*, **107**, 4167, (*use*)

Kowaleski, R.M. *et al.*, *Organometallics*, 1988, **7**, 1425, (*epr*)

Churchill, M.R. *et al.*, *J. Chem. Crystallogr.*, 1995, **25**, 597-599, (*cryst struct*)

Barybin, M.V. *et al.*, *Inorg. Chim. Acta*, 1998, **269**, 58-62, (*synth, ir, Et₄N salt*)

Synthetic Methods of Organometallic and Inorganic Chemistry, (ed. Hermann, W.A.), Thieme, 1999, **7**, 5, (*synth*)