>>**Entry Name: Beryllium chloride ($BeCl_2$),** 8Cl

CAS Registry Number: 7787-47-5

$BeCl_2$

Molecular Formula: $BeCl_2$
Molecular Weight: 79.918
Accurate Mass: 78.949886
Percentage Composition: Be 11.28%; Cl 88.72%
Source/Synthesis: Prepd. by direct reaction of Be + Cl_2 at 350-400°. Manuf. by treatment of Na_2BeF_4, obtained from a mixt. of beryl ore and Na_2SiF_6 heated to 600-820°,with a chlorinating agent (BCl_3, CCl_4, $COCl_2$, $SiCl_4$)
Use/Importance: Metallothermic reduction of $BeCl_2$ is used for beryllium manuf. Used for selective demethylation of aryl methyl ethers. Promoter for addn. of organolithium and organomagnesium reagents to enones
Physical Description: Colourless orthorhombic cryst.; deliquescent. Undergoes transition to high temp. orthorhombic polymorph at 403°
Melting Point: Mp 415°
Boiling Point: Bp 520°
Solubility: V. sol. H_2O, EtOH, Et_2O, Py; spar. sol. C_6H_6, $CHCl_3$, CS_2; insol. NH_3, Me_2CO
Other Data: ΔH_f° –496 kJ mol^{-1}; ΔG_f° –450 kJ mol^{-1}; S° 75.8 J K^{-1} mol^{-1}
Hazard & Toxicity: Highly toxic; suspected carcinogen

Aldrich: 20119-7
Fluka: 14218

>>**Derivative:** Tetrahydrate

CAS Registry Number: 13466-27-8
Molecular Formula: $BeCl_2H_8O_4$
Molecular Weight: 151.978
Accurate Mass: 150.992146
Percentage Composition: Be 5.93%; Cl 46.65%; H 5.31%; O 42.11%
Physical Description: Cryst. (aq. soln.). Readily loses two H_2O molecules to form dihydrate at 60°
Other Data: Layered struct. built up from $BeCl_2.2H_2O$ moieties with spaces filled with H_2O molecules

>>**Derivative:** Tetraammine complex

Molecular Formula: $BeCl_2H_{12}N_4$
Molecular Weight: 148.039
Accurate Mass: 147.056082
Percentage Composition: Be 6.09%; Cl 47.90%; H 8.17%; N 37.85%
Physical Description: Colourless orthorhombic cryst.; dec. on heating with NH_3 loss forming $BeCl_2$

>>**Derivative:** Bis-Et_2O complex

Molecular Formula: $C_8H_{20}BeCl_2O_2$
Molecular Weight: 228.162
Percentage Composition: C 42.11%; H 8.83%; Be 3.95%; Cl 31.08%; O 14.02%
Source/Synthesis: Obt. from Et_2O solns. of $BeCl_2$
Physical Description: Colourless trigonal cryst. (Et_2O)
Solubility: Sol. Et_2O
Hazard & Toxicity: Highly toxic, suspected carcinogen

References: