

Special Topic E: Quadruple bonds

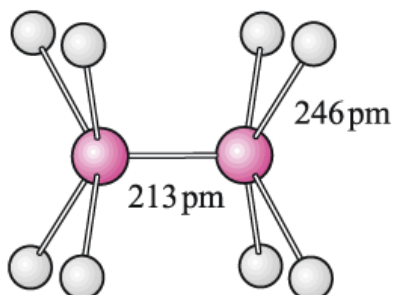
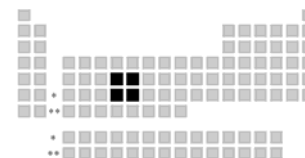


Figure E.1 The structure of $[\text{Re}_2\text{Cl}_8]^{2-}$.

Table E.1 Some compounds with electron-rich M-M bonds (from C&W, 5th ed.)

Compound	Electron configuration	Bond order	Bond length (Å)	Notes
	$\sigma^2\pi^4\delta^2\delta^*2$	3	2.182(1)	^b
	$\sigma^2\pi^4\delta^2\delta^*\pi^*2$	$2\frac{1}{2}$	2.267(2)	^c
	$\sigma^2\pi^4\delta^2\delta^*2\pi^*2$	2	2.260(3)	^d
	$\sigma^2\pi^4\delta^2\delta^*2\pi^*3$	1.5	2.316(2)	^c
	$\sigma^2\pi^4\delta^2\delta^*2\pi^*4$	1	2.389(1)	^e
	$\sigma^2\delta^4\delta^2\delta^*2\pi^*4$	1	2.461(1)	^f

^aIn structures with bridging ligands, only one is shown in full.

^bSee ref. 77; conformation is staggered.

^cSee ref. 65.

^dG. Wilkinson *et al.*, *J. Chem.Soc., Dalton Trans.*, **1985**, 2321.

^eJ. L. Bear *et al.*, *J. Am. Chem. Soc.*, 1985, **107**, 7195.

^fSee ref. 76.