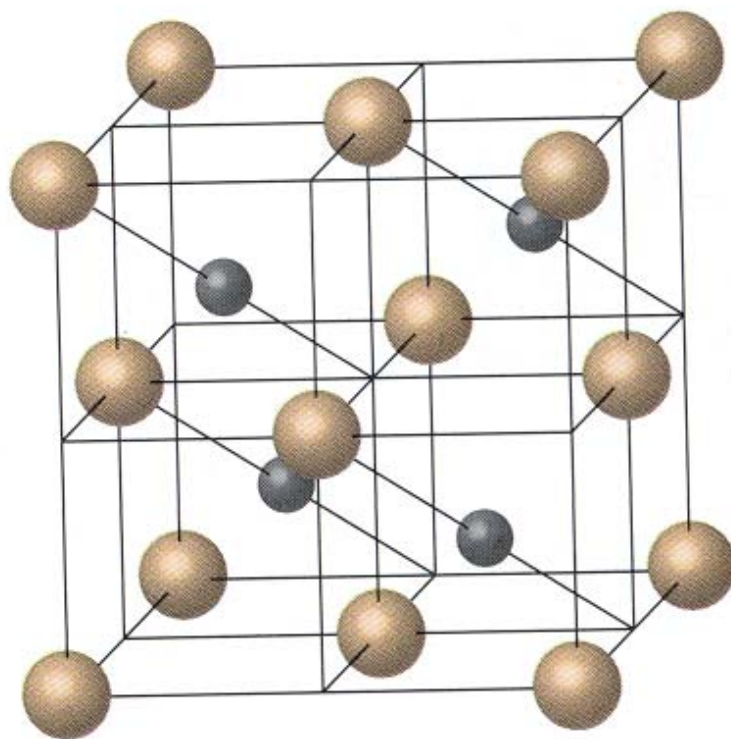


Metals and their Compounds

Lecture 4.4



Zinc blende ($\text{Zn}^{2+} \text{S}^{2-}$) structure (fig 11.42b)

Face centred cubic (close packed) arrangement of sulfide ions with Zn^{2+} ions in *tetrahedral* holes

Eight S^{2-} at corners of cube = 1 complete S^{2-}
Six S^{2-} at face-centers of cube = 3 complete S^{2-}
Four Zn^{2+} in middle of cell = 4 complete Zn^{2+}

Therefore the formula is $(\text{Zn}^{2+})_4(\text{S}^{2-})_4$ i.e. ZnS