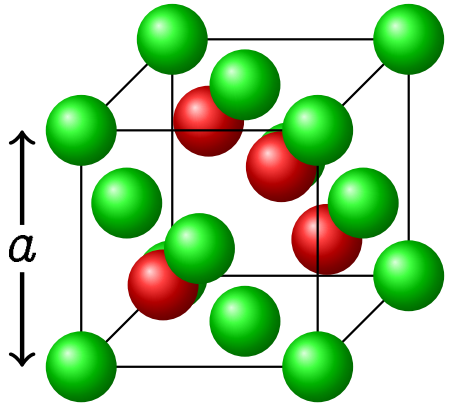
zincblende, diamond

Simple cubic lattice + basis of 8 atoms[#]

- atoms at $(u, v, w) =$
  - (green) $(0,0,0)$, $(\frac{1}{2},\frac{1}{2},0)$, $(\frac{1}{2},0,\frac{1}{2})$, $(0,\frac{1}{2},\frac{1}{2})$
  - (red) $(\frac{1}{4},\frac{1}{4},\frac{1}{4})$, $(\frac{3}{4},\frac{3}{4},\frac{1}{4})$, $(\frac{3}{4},\frac{1}{4},\frac{3}{4})$, $(\frac{1}{4},\frac{3}{4},\frac{3}{4})$



[#] $8 \times \frac{1}{8}\,(corner) + 6 \times \frac{1}{2}\,(face) + 4 \times 1(interior)$

- (green): $(0,0,0)$, (red): $(\frac{1}{4},\frac{1}{4},\frac{1}{4})$

$R_{nn} = \sqrt{3}a/4$, $PF =$
e.g ZnS, GaAs. [Ashcroft & Mermin list 28]

If both atoms the same species = diamond: C, Ge, Si.