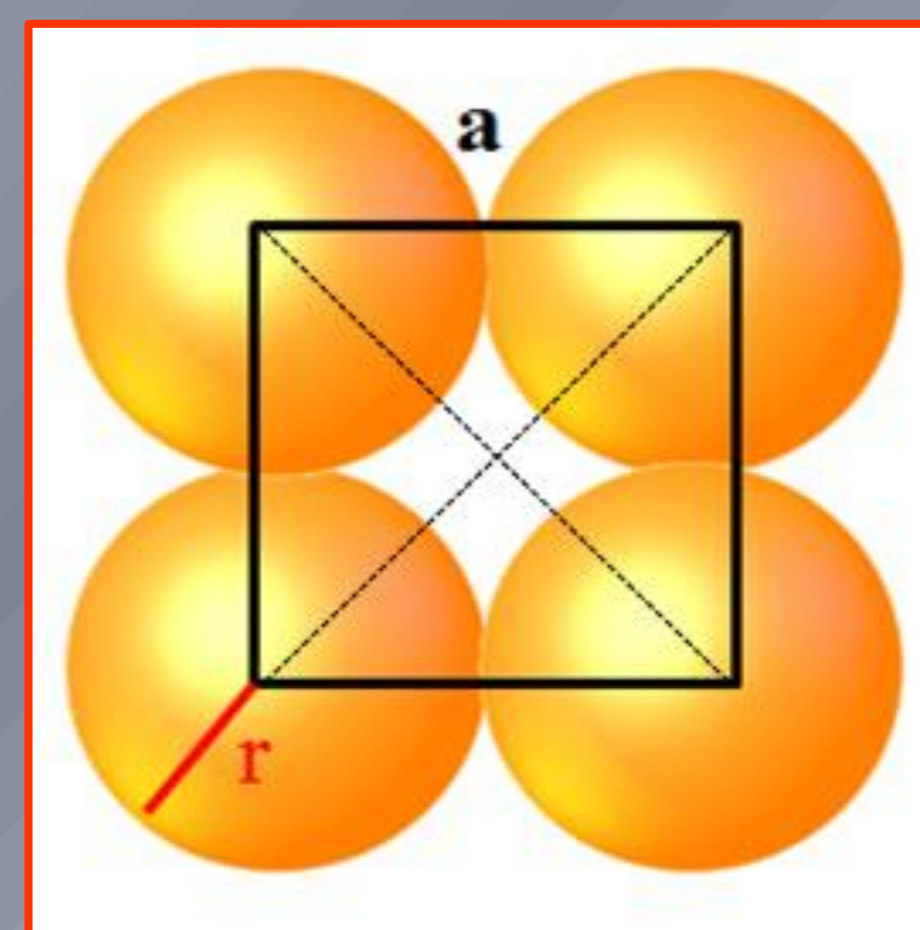
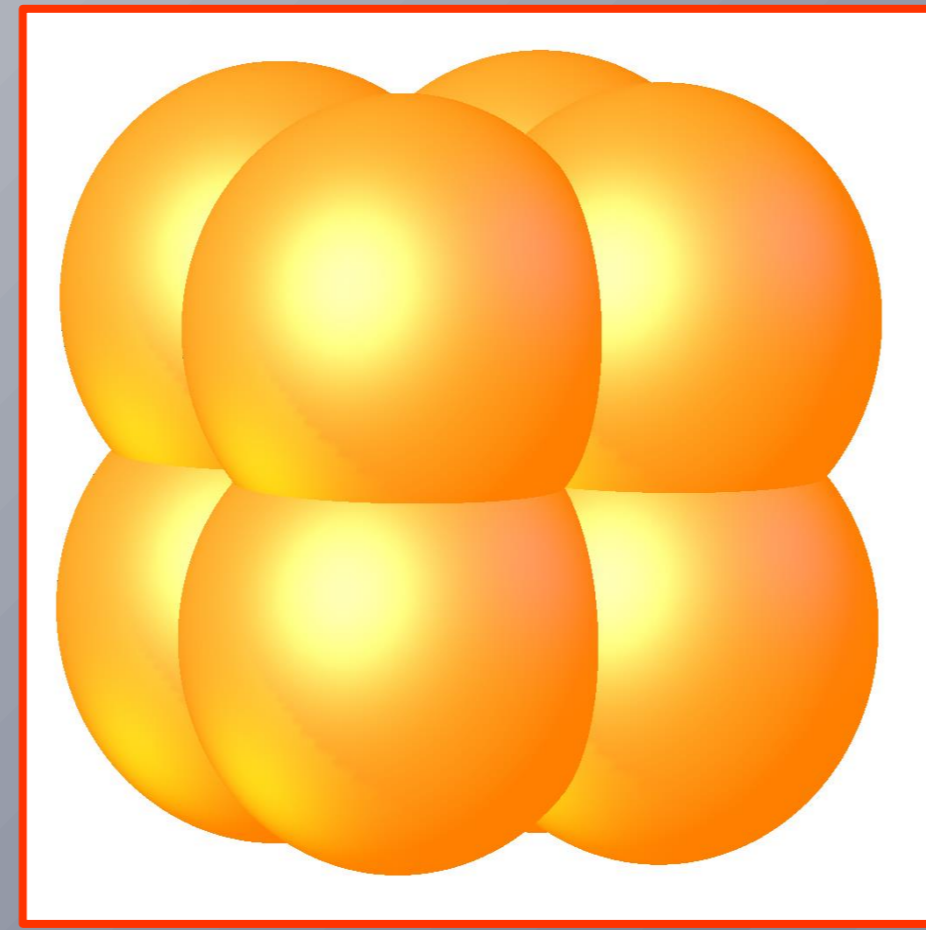
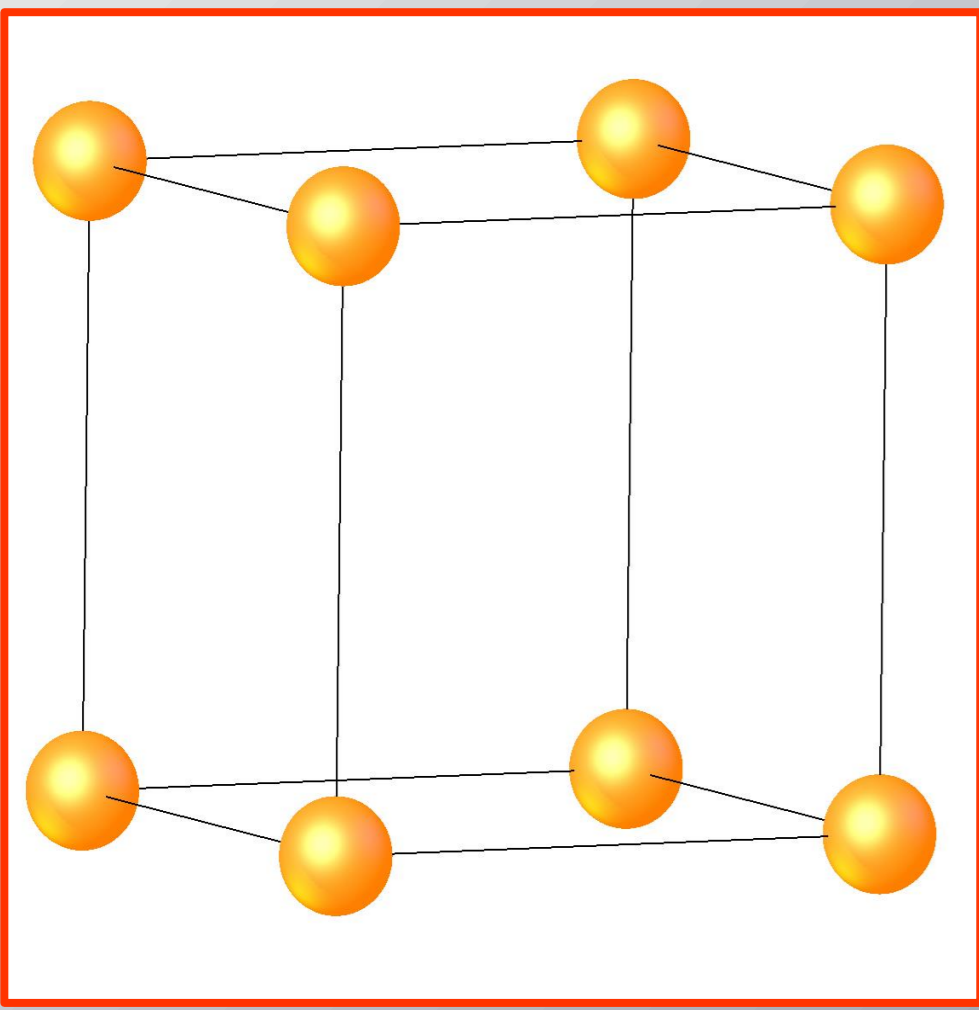


Typ komórki Bravais'go

Upakowanie atomów w komórce

Promień atomowy



$$r = \frac{a}{2}$$

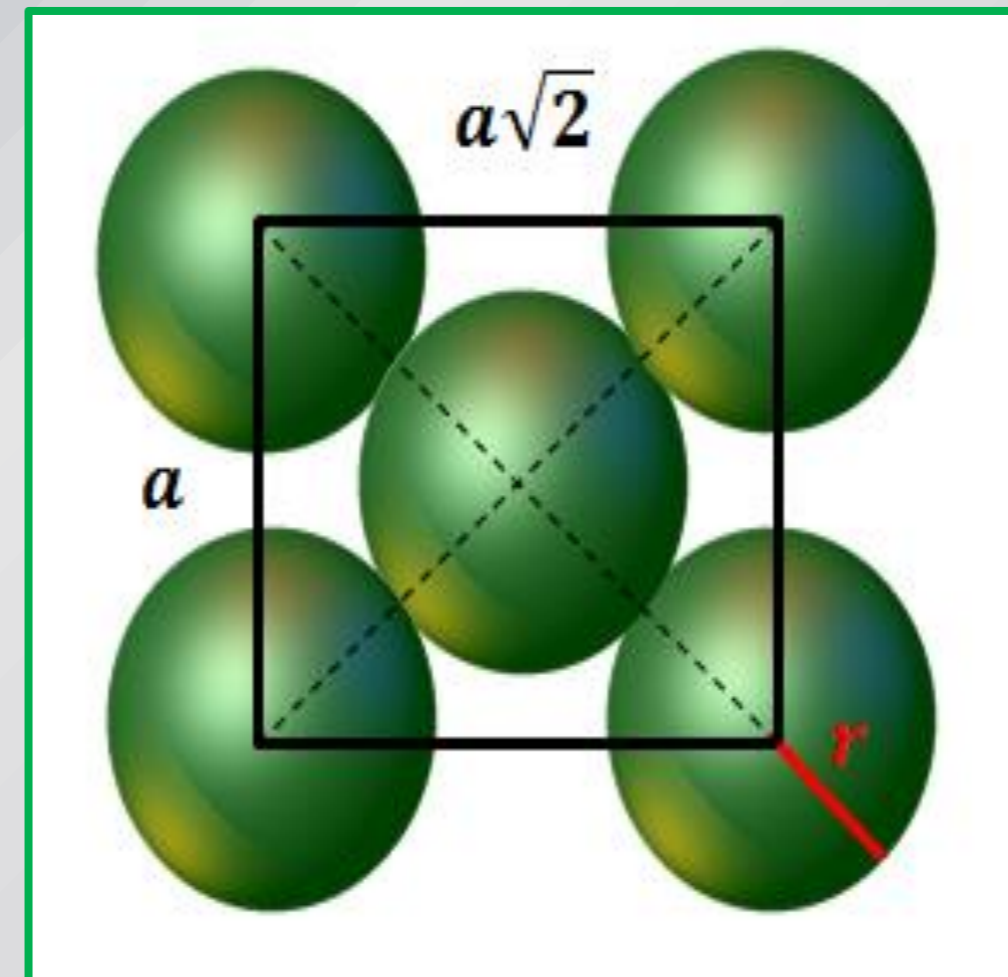
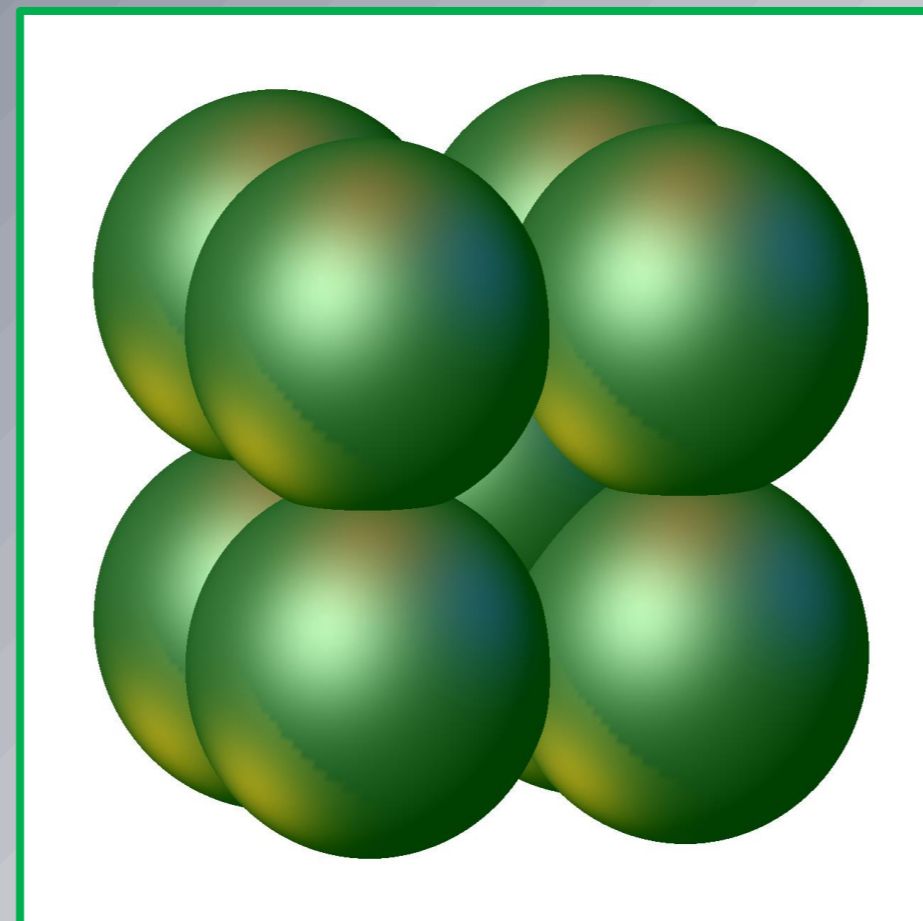
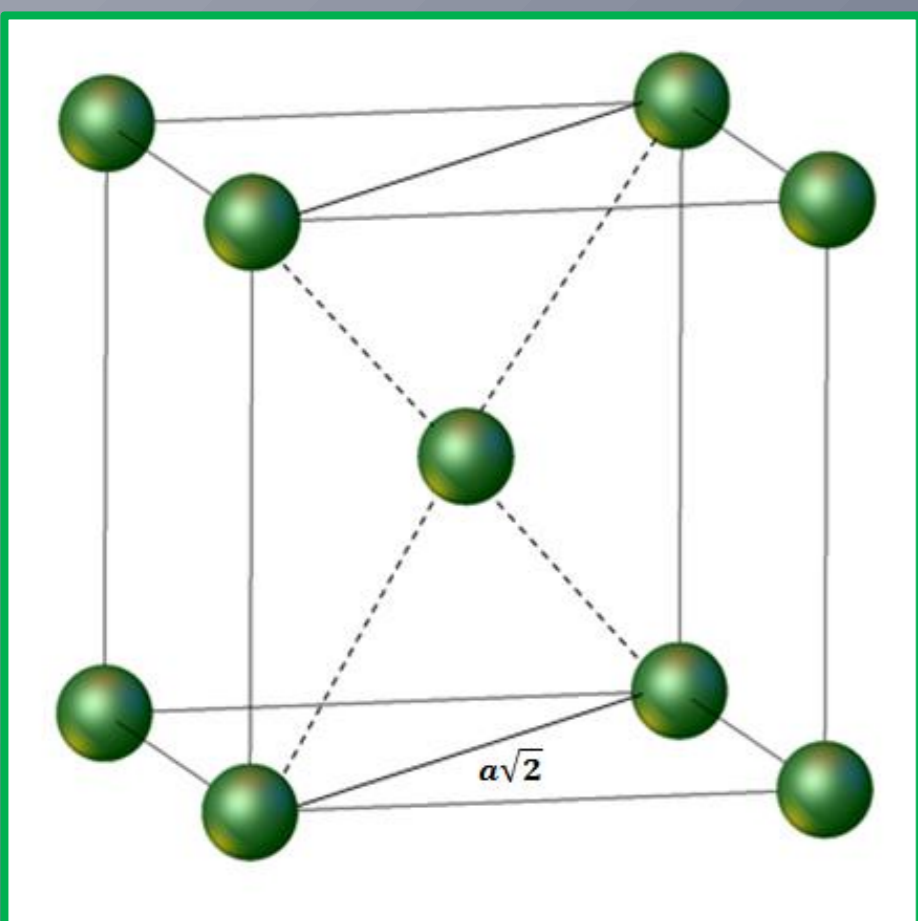
Komórka P

$$N = \frac{1}{8} \cdot 8 = 1$$

Baza: 0,0,0

Stopień wypełnienia przestrzeni W

$$W = \frac{V_{at}}{V_{kom}} = \frac{\frac{4}{3} \pi r^3}{a^3} = \frac{4}{3} \pi \left(\frac{r}{a}\right)^3 = \frac{4}{3} \pi \left(\frac{\frac{a}{2}}{a}\right)^3 = \frac{4}{3} \pi \frac{1}{8} = \frac{\pi}{6} \approx 52\%$$



$$r = \frac{\sqrt{3}}{4} a$$

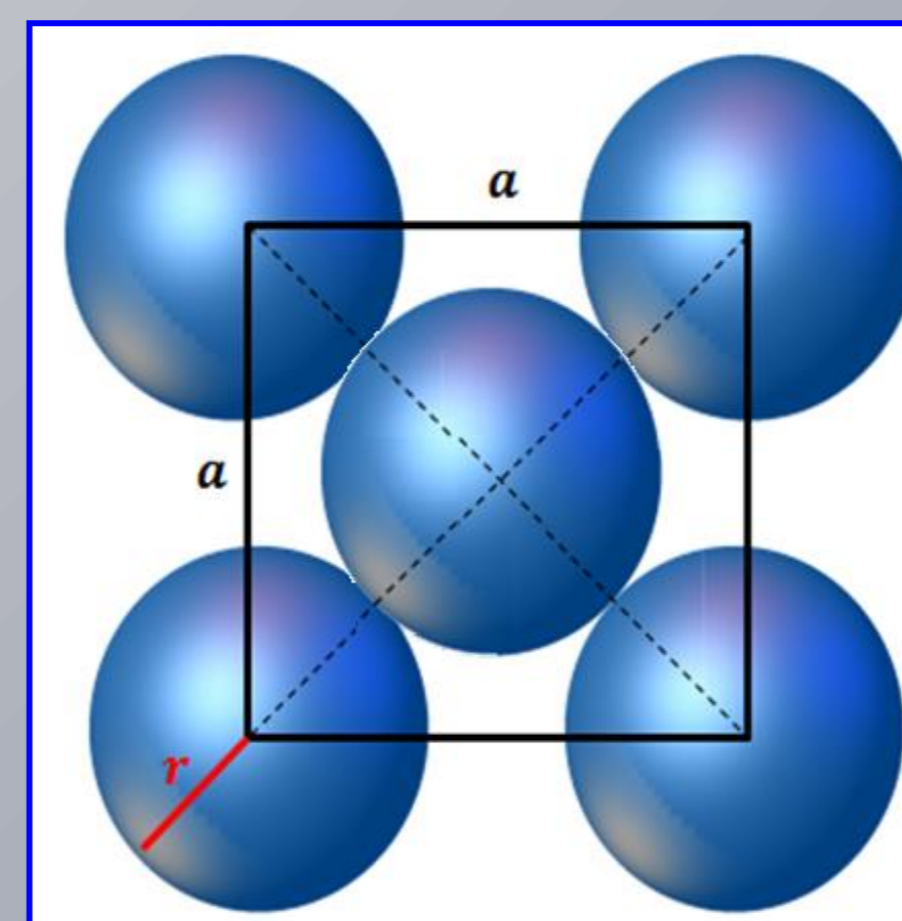
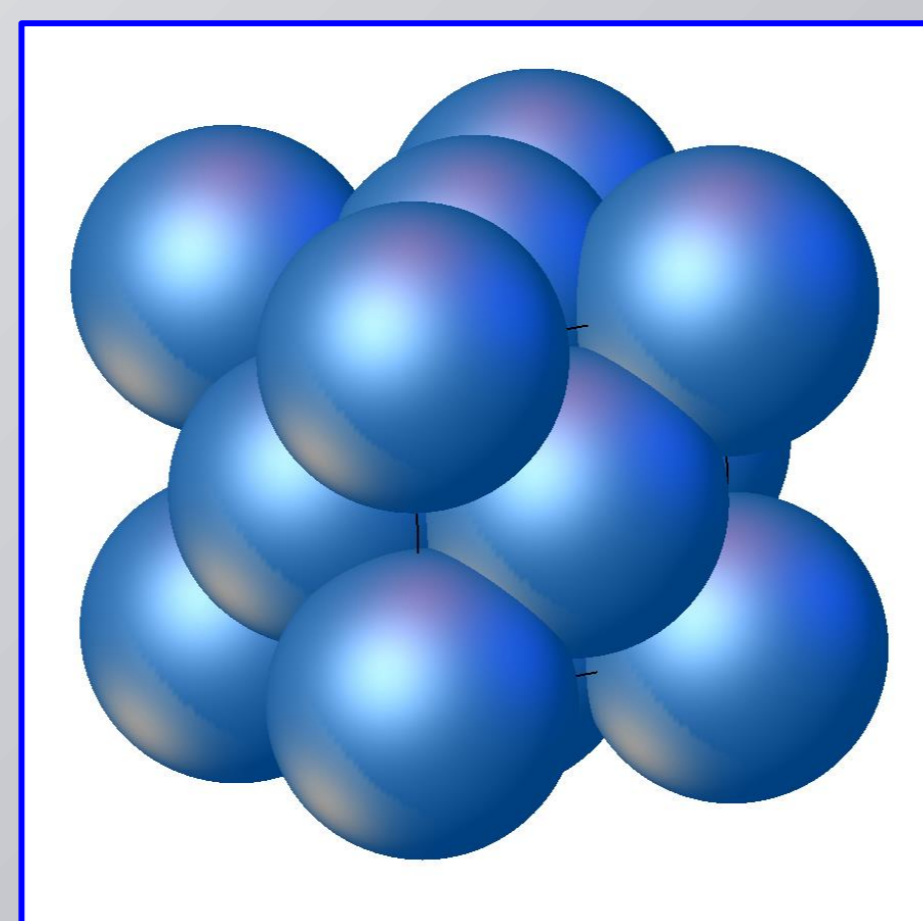
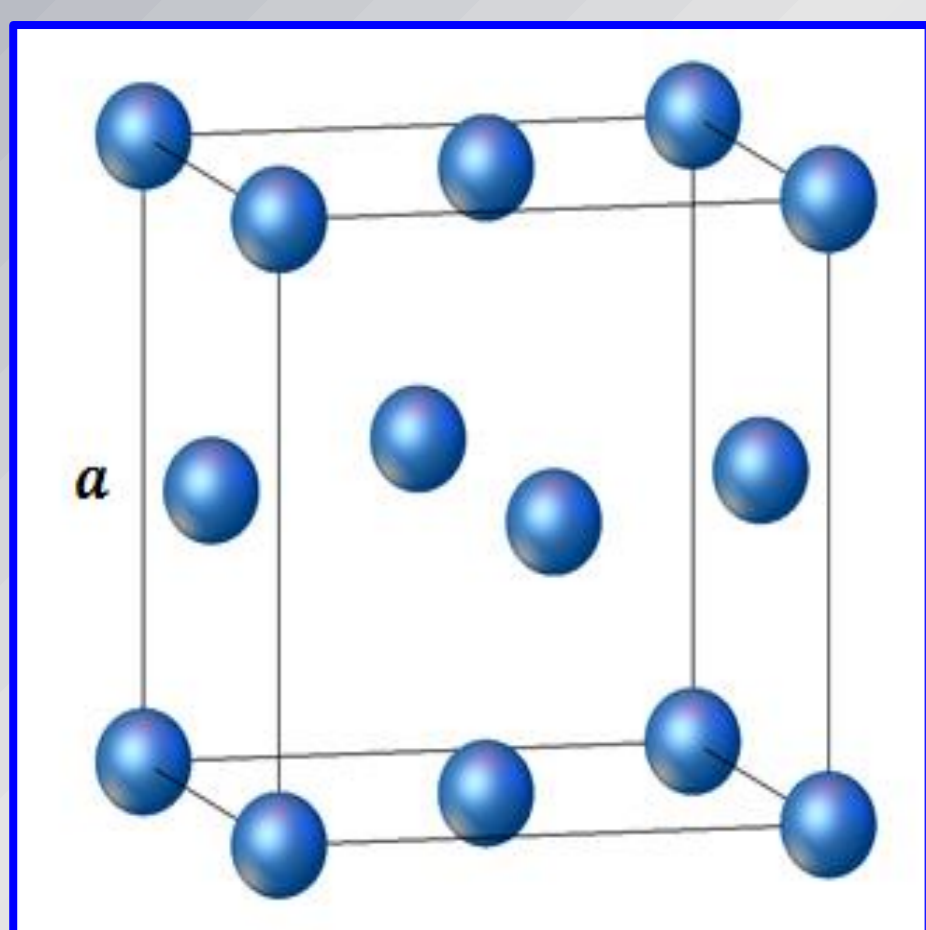
Komórka I

$$N = \frac{1}{8} \cdot 8 + 1 \cdot 1 = 2$$

Baza: 0,0,0; $\frac{1}{2}, \frac{1}{2}, \frac{1}{2}$

Stopień wypełnienia przestrzeni W

$$W = \frac{V_{at}}{V_{kom}} = \frac{2 \frac{4}{3} \pi r^3}{a^3} = \frac{8}{3} \pi \left(\frac{r}{a}\right)^3 = \frac{8}{3} \pi \left(\frac{\frac{a\sqrt{3}}{4}}{a}\right)^3 = \frac{\pi}{8} \sqrt{3} \approx 68\%$$



$$r = \frac{\sqrt{2}}{4} a$$

Komórka F

$$N = \frac{1}{8} \cdot 8 + \frac{1}{2} \cdot 6 = 4$$

Baza: 0,0,0; $\frac{1}{2}, 0, 0$; $0, \frac{1}{2}, 0$; $0, 0, \frac{1}{2}$

Stopień wypełnienia przestrzeni W

$$W = \frac{V_{at}}{V_{kom}} = \frac{4 \frac{4}{3} \pi r^3}{a^3} = \frac{16}{3} \pi \left(\frac{r}{a}\right)^3 = \frac{16}{3} \pi \left(\frac{\frac{a\sqrt{2}}{4}}{a}\right)^3 = \frac{\pi\sqrt{2}}{3} \approx 74\%$$