4.9 The concentration, in weight percent, of an element in an alloy may be computed using a modified form of Equation 4.3. For this alloy, the concentration of iron (C_{Fe}) is just

$$C_{Fe} = \frac{m_{Fe}}{m_{Fe} + m_C + m_{Cr}} \times 100$$

$$= \frac{105 \ kg}{105 \ kg + 0.2 \ kg + 1.0 \ kg} \times 100 = 98.87 \ wt\%$$

Similarly, for carbon

$$C_C = \frac{0.2 \ kg}{105 \ kg + 0.2 \ kg + 1.0 \ kg} \times 100 = 0.19 \ wt\%$$

And for chromium

$$C_{Cr} = \frac{1.0 \ kg}{105 \ kg + 0.2 \ kg + 1.0 \ kg} \times 100 = 0.94 \ wt\%$$