Answer on the question #63883, Chemistry / General Chemistry

Question:

Convert (a) 8.6 X 10-3 kg to g (b) 0.00041 µm to nm (c) 2.49 X 10-5 s to ms (d) 856 X 102 nm to cm.

Answer:

(a) _8.6 10^{-3} kg to g:_

As one kg is 1000 g:

$$8.6 \cdot 10^{-3}(kg) \cdot 1000 \left(\frac{g}{kg}\right) = 8.6 \ g$$

(b) _0.00041 µm to nm:_

As one µm is 10^{-6}m and 1nm is 10^{-9}m, then:

$$0.00041 \ \mu m \cdot 10^{-6} \left(\frac{m}{\mu m}\right) \cdot 10^9 \left(\frac{nm}{m}\right) = \ 0.41 \ nm$$

(c) _2.49 10^{-5} s to ms_

As 1s is 10^3 ms:

$$2.49 \cdot 10^{-5}(s) \cdot 10^3 \left(\frac{ms}{s}\right) = 2.49 \cdot 10^{-2}ms$$

(d) _856 10^{2}nm to cm_

As 1nm is 10^{-9} m and 1cm is 10^{-2}m:

$$856 \cdot 10^2(nm) \cdot 10^{-9} \left(\frac{m}{nm}\right) \cdot 10^2 \left(\frac{cm}{m}\right) = 856 \cdot 10^{-5}cm, or \ 8.56 \ \cdot 10^{-3}cm$$