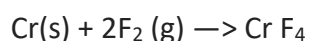


10.4 grams of chromium (Cr) reacted with fluorine gas (F₂) to produce 25.6 grams of chromium fluorine salt reaction : $__ \text{Cr}(s) + __ \text{F}_2 (g) \rightarrow __ \text{Cr? F?} (s)$

- 1) how many grams reacted?
- 2) how many moles of fluorine atoms reacted?
- 3) how many moles of chromium atoms reacted?
- 4) what is the chemical formula produced?
- 6) what is the anion
- 7) what is the cation of this salt?
- 8) which element went through reduction?

Solution.



$$n(\text{Cr}) = \frac{m(\text{Cr})}{M(\text{Cr})} = \frac{10.4}{52} = 0.2 \text{ mol}$$

$$n(\text{Cr}) = \frac{m(\text{CrF}_4)}{M(\text{CrF}_4)} = \frac{25.6}{128} = 0.2 \text{ mol}$$

$$n(\text{F}_2) = n(\text{Cr}) \times 2 = 0.2 \times 2 = 0.4 \text{ mol}$$

$$m(\text{F}_2) = n(\text{F}_2) \times M(\text{F}_2) = 0.4 \times 38 = 15.2 \text{ g}$$

The anion is F⁻.

The cation is Cr⁴⁺.

The element F went through reduction.

Answer provided by www.AssignmentExpert.com