

What the volume of 88 grams of carbon dioxide?

**Solution:**

At Standard temperature and pressure (STP), volume of one mol of any gas is 22.4 L.

Molecular mass of carbon dioxide is:

$$m_a(\text{CO}_2) = m_a(\text{C}) + 2 \times m_a(\text{O})$$

$$m_a(\text{CO}_2) (\text{g/mole}) = 12 + 2 \times 16 = 44$$

Volume of 88 grams of carbon dioxide at STP is

$$22.4 \times 88 / 44 = 44.8 \text{ L}$$

**Answer:** 44.8 L.