

what is the mass of 48decimetre<sup>3</sup> of carbon monoxide at RTP.

**Solution:** RTP is a random temperature and pressure, T = 298 K, p = 1 atm. A mole of gases at RTP occupies

24 dm<sup>3</sup>. Using formula  $\frac{V}{V_M} = \frac{m}{M}$  one can calculate the mass of CO:

$$m = \frac{V \cdot M}{V_M} = \frac{48 \cdot 28}{24} = 56 \text{ g.}$$

**Answer:** m(CO) = 56 g.