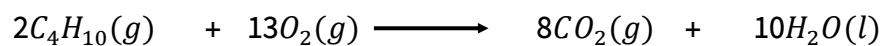


Example(5): Calculate the volume of O_2 required for complete combustion of 16 L of butane (C_4H_{10}) at constant temperature and pressure.

Solution: :



2 mol 13 mol

2 volumes 13 volumes

$$\text{Volume of } O_2 = 16 \text{ L of butane} \times \frac{13 \text{ volumes of oxygen}}{2 \text{ volume of butane}} = 104 \text{ L of oxygen}$$

Check: Mole ratio of butane to oxygen is 2:13. Thus, the volume of oxygen required is also 6.5 times greater.