the active mass of 7.0 g of nitrogen in a 2 L container would be

Solution: the active mass of nitrogen will be calculated by the quantity $\frac{mol}{L}$, then find the amount of substance of the existing nitrogen: n(N_2)=$\frac{m(N_2)}{M(N_2)} = \frac{7}{28} = 0.25\ mol.$

The volume of the balloon is 2 liters, then the active mass will be: c=$\frac{n(N_2)}{V} = \frac{0.25}{2} = 0.125\ \frac{mol}{L}.$

Answer: 0.125