Answer on Question #42142, Chemistry, Other
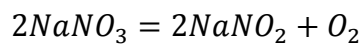
Question:

What is the mass of sodium nitrate (85.00 g/mol) that releases 2.55 L of Oxygen has at STP

Solution:

Sodium nitrate decomposes via thermal decomposition at 380°C to sodium nitrite:

$$2NaNO_3 = 2NaNO_2 + O_2$$

Amount of substance of 2.55 L of Oxygen at STP is:

$N(O_2)$ (mole) = 2.55/22.711 = 0.1123;

Now we can find the mass of sodium nitrate:

$M(NaNO_3)$ (g) = 0.1123*2*85.00 = 19.09;

Answer: 19.09 g