Question #76574, Chemistry / General chemistry

if a container contains 5.84 *10^(30)molecules of sulfur trioxide gas, how many grams of the gas exist in the container

Solution

n(SO_3) = N/N_a = 5.84*10^{30}/6.02*10^{23} = 9.7*10^6 (mol)

m(SO_3) = n*M = 9.7*10^6 * (32 + 16*3) = 7.76*10^8(g)

Answer

m(SO_3) = 7.76*10^8 g

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