What is the mass in grams of 5.00×10^{22} molecules of $C_9H_8O_4$?

Answer:
There are 6.022×10^{23} molecules in a mole of a substance.
The number of moles of $C_9H_8O_4$ is: $5.00 \times 10^{22} / 6.022 \times 10^{23} = 0.83 \times 10^{-1} = 0.083$ mol
$M (C_9H_8O_4) = 180$ g/mol
$n = m/M \qquad\qquad m = nM$
$m (C_9H_8O_4) = 0.083 \times 180 = 14.94$ g

Answer provided by www.AssignmentExpert.com