

Results

Mass of Empty Bag: 1.83 g

Bag #	Chemical Formula	Chemical Name of Substance	Mass of Bag and Substance
Ex.	$C_9H_8O_4$	acetylsalicylic acid (aspirin)	11.83g
1			
2			
3			
4			
5			
6			

Calculations

Bag #	Mass of Substance in Bag (g)	Molar Mass of Substance (g/mole)	Moles of Substance	Term for the Representative Particle	Number of Representative Particles	Number of Oxygen Atoms
Ex.	10.00	180.158	0.05551	molecules	3.34×10^{22}	1.34×10^{23}
1						
2						
3						
4						
5						
6						

For $C_9H_8O_4$

$$\text{molar mass: } 9(12.011) + 8(1.0079) + 4(15.999) = 180.158$$

$$\frac{10.00g}{180.158g} \text{ mole} = 0.05551 \text{ moles}$$

$$\frac{0.05551 \text{ moles } C_9H_8O_4}{1 \text{ mole}} \times 6.02 \times 10^{23} \text{ molecules} = 3.34 \times 10^{22} \text{ molecules}$$

$$\frac{3.34 \times 10^{22} \text{ molecules } C_9H_8O_4}{1 \text{ molecule } C_9H_8O_4} \times 4 \text{ O atoms} = 1.34 \times 10^{23} \text{ O atoms}$$