

**Demo WS -- Chem Honors
Masses of Gases (Syringe)**

Name _____
Period _____ Date _____

Data Table: Various gases are filled into a syringe and massed. Each gas sample has the same volume.

Mass of syringe (plunger all the way in) = _____ mass of syringe + vacuum = _____ g

	<u>AIR</u>	<u>CH₄</u>	<u>O₂</u>	<u>CO₂</u>
mass of syringe + gas				
mass of sample of gas (g) (all have same volume)				
relative mass of gas compared to CO₂				= 1.00
experimental molecular mass of gas (CO ₂ is set to a mass of 44.0 because this makes mass of H = 1.0 amu)				44.0 amu
accepted molecular mass of gases	*	16.0 amu	32.0 amu	44.0 amu
% error				

Post Demo Questions:

1) *To find accepted molecular mass of air:

“Air” is of course, NOT on the periodic table. It is actually a mixture of N₂ gas, O₂ gas and some Ar gas. Using the percent composition of air given below, find the accepted molecular mass of air.

Air is 78.1 % N₂, 20.9 % O₂ and 0.934 % Ar.

2) In the lab, we assumed that the gas from the gas jets was pure methane gas (CH₄). However, in reality there is some ethane gas (CH₃CH₃) mixed in. Does this fact help to explain your experimental error in your mass of CH₄? Explain.