

# Graham's Law of Effusion

1. Which gas effuses faster and by how many times  $\text{N}_2$  or  $\text{CO}_2$ ?
2. Which gas effuses faster and by how many times  $\text{NH}_3$  or  $\text{HCl}$ ?
3. Which gas effuses faster and by how many times  $\text{H}_2$  or  $\text{UF}_6$ ?
4. Which gas effuses faster and by how many times  $\text{CO}$  or  $\text{NO}$ ?
5. Which gas effuses faster and by how many times  $\text{CH}_4$  or  $\text{NO}_2$ ?
6. Which gas effuses faster and by how many times  $\text{C}_2\text{H}_6$  or  $\text{C}_3\text{H}_8$ ?
7. Which gas effuses faster and by how many times  $\text{H}_2$  or  $\text{Cl}_2$ ?
8. Which gas effuses faster and by how many times  $\text{N}_2\text{O}$  or  $\text{NO}_2$ ?
9. Which gas effuses faster and by how many times  $\text{C}_2\text{H}_6$  or  $\text{NO}_2$ ?
10. Which gas effuses faster and by how many times  $\text{CF}_4$  or  $\text{N}_2\text{O}_5$ ?
11. An unknown gas X effuses 1.65 times faster than  $\text{C}_3\text{H}_8$ . What is the molecular mass of the gas?
12.  $\text{HCl}$  effuses 1.88 times faster than an unknown gas  $\text{HX}$ , is the gas  $\text{HBr}$  or  $\text{HI}$ ?
13. The Rate of effusion of an unknown gas was found to be 31.50 ml/min. Under the same conditions the rate of effusion of  $\text{O}_2$  was measured to be 30.50 ml/min. is the unknown gas  $\text{CH}_4$ ,  $\text{CO}$ ,  $\text{NO}$ ,  $\text{CO}_2$  or  $\text{NO}_2$ ?
14. The Rate of effusion of an unknown gas was found to be 24.0 ml/min. Under the same conditions the rate of effusion of  $\text{CH}_4$  was measured to be 47.8 ml/min. What is the molecular mass of the unknown gas?
15. An unknown gas X effuses 1.33 times faster than  $\text{N}_2$ . What is the molecular mass of the gas?
16. An unknown gas X effuses 1.88 times faster than  $\text{NH}_3$ . What is the molecular mass of the gas?
17. An unknown gas X effuses 1.46 times faster than  $\text{H}_2$ . What is the molecular mass of the gas?
18. An unknown gas X effuses 1.93 times faster than  $\text{CO}$ . What is the molecular mass of the gas?
19. An unknown gas X effuses 1.59 times faster than  $\text{CH}_4$ . What is the molecular mass of the gas?
20. An unknown gas X effuses 1.29 times faster than  $\text{C}_2\text{H}_6$ . What is the molecular mass of the gas?