

4. A 10.0 g sample of a gas is analyzed and found to contain 2.20 g sulfur and 7.80 g fluorine. Its molecular formula is the same as its empirical formula. What is the molecular formula of the gas?

5. What is the volume of this 10.0 g sample of gas at S.T.P.?

6. What is the density of the gas in $\frac{\text{g}}{\ell}$? (Hint: the mass is 10.0 g and you just calculated the volume.)