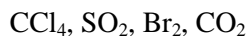


## Teacher's Tools<sup>®</sup> Chemistry

### Gases and Stoichiometry: Non Ideal Gases: Worksheet 3

1. Real gases deviate from ideal gas behavior. Using ideas of kinetic-molecular theory, explain how the ideal gas assumptions break down for non-ideal gases.

2. At STP, which of the following gases shows the greatest deviation from ideal behavior? Give two reasons for your choice.



3. Under what conditions do real gases approach ideal gas behavior?

4. The van der Waals equation of state a real gas is as follows:

$$\left( P + a \left( \frac{n}{V} \right)^2 \right) (V - nb) = nRT$$

Describe which physical properties of a molecule determine the magnitudes of the constants a and b.