Ideal Gas Laws

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Ideal Gas Law

1) Assuming constant temperature. Determine the final pressure when 8.00mL krypton at 1.97atm is transferred to a vessel of volume 1.0L.

2) An outdoor storage container for hydrogen gas with a volume of 300kL is at 2.0 atm and 10°C. The temperature rises to 40°C. What is the new pressure of the hydrogen in the container?

3) What is the density of chloroform ($CHCl_3$) with a vapor pressure at 0.267atm and 300K?

4) What mass of ammonia (NH_3) will exert the same pressure as 10mg of hydrogen sulfide (H_2S) in the same container under the same conditions?

5) Nitroglycerin ($C_3H_5(NO_3)_3$) is highly sensitive and detonates by the reaction

$4\ C_3H_5(NO_3)_3(l) \rightarrow 6\ N_2(g) + 10\ H_2O(g) + 12\ CO_2(g) + O_2(g)$

Calculate the total volume of product gases at 2.12atm and 300°C from the detonation of 450g of nitroglycerin.