

Questions on Numbers of Particles

Avogadro's constant is $6.02 \times 10^{23} \text{ mol}^{-1}$

- 3.20 g of oxygen gas contains
 - 0.200 mol O_2 molecules
 - 0.100 mol O atoms
 - 0.100 mol O_2 molecules
 - 0.0500 mol O atoms
- The number of H atoms in 0.20 mol $\text{CH}_4(\text{g})$ is
 - 1.2×10^{23}
 - 4.8×10^{23}
 - 3.0×10^{24}
 - 1.2×10^{25}
- What is the total number of atoms present in 0.0100 mol of propane, C_3H_8 ?
 - 6.02×10^{21}
 - 5.47×10^{20}
 - 6.62×10^{22}
 - 1.02×10^{23}
- How many oxygen atoms are in 2.48 g of $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$?
 - 6.02×10^{21}
 - 1.81×10^{22}
 - 4.82×10^{22}
 - 3.01×10^{22}
- Which of the following contains the greatest number of oxygen atoms
 - 0.200 mol CO_2
 - 0.300 mol P_4O_6
 - 0.400 mol SO_3
 - 0.500 mol H_2O
- Which of the following contains the greatest number of atoms
 - 1.0 g $\text{H}_2(\text{g})$
 - 4.4 g $\text{CO}_2(\text{g})$
 - 3.2 g $\text{SO}_2(\text{g})$
 - 5.0 g $\text{Ne}(\text{g})$
- 10.0 g of which of the following contains the greatest number of molecules
 - $\text{CO}_2(\text{g})$
 - $\text{NO}(\text{g})$
 - $\text{CH}_4(\text{g})$
 - $\text{N}_2(\text{g})$
- Which of the following contains the same number of atoms as in 24.08 g CH_4 ?
 - 3.5 mol O_2
 - 0.5 mol O_3
 - 2.5 mol CO_2
 - 1.5 mol Ar
- 100 g of which of the following contains the greatest number of *atoms*
 - $\text{Ar}(\text{g})$
 - $\text{Cl}_2(\text{g})$
 - $\text{P}_4(\text{g})$
 - $\text{S}_8(\text{g})$
- 1.0 dm^3 of which of the following contains the greatest number of *atoms*
 - $\text{He}(\text{g})$
 - $\text{CO}_2(\text{g})$
 - $\text{H}_2(\text{g})$
 - $\text{CH}_4(\text{g})$