

- The gram formula mass of NH_4Cl is
A) 22.4 g/mole B) 28.0 g/mole
C) 53.5 g/mole D) 95.5 g/mole
- Which substance has the greatest molecular mass?
A) H_2O_2 B) NO C) CF_4 D) I_2
- Which quantity of particles is correctly represented by the formula H_2SO_4 ?
A) 1.0 mole of ions
B) 1.0 mole of molecules
C) 6.0×10^{23} ions
D) 6.0×10^{23} atoms
- What is the total number of oxygen atoms in the formula $\text{MgSO}_4 \cdot 7 \text{H}_2\text{O}$? [The \cdot represents seven units of H_2O attached to one unit of MgSO_4 .]
A) 11 B) 7 C) 5 D) 4
- How many moles of water are contained in 0.250 mole of $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$?
A) 1.25 B) 4.50 C) 40.0 D) 62.5
- The number of moles of molecules in a 12.0-gram sample of Cl_2 is
A) $\frac{12.0}{35.5}$ mole B) $\frac{12.0}{71.0}$ mole
C) 12.0 moles D) 12.0×35.5 moles
- What is the total mass in grams of 0.75 mole of SO_2 ?
A) 16 g B) 24 g C) 32 g D) 48 g
- The gram molecular mass of CO_2 is the same as the gram molecular mass of
A) CO B) SO_2 C) C_2H_6 D) C_3H_8
- Which pair consists of a molecular formula and its corresponding empirical formula?
A) C_2H_2 and CH_3CH_3
B) C_6H_6 and C_2H_2
C) P_4O_{10} and P_2O_5
D) SO_2 and SO_3
- What is the empirical formula for the compound $\text{C}_6\text{H}_{12}\text{O}_6$?
A) CH_2O B) $\text{C}_2\text{H}_4\text{O}_2$
C) $\text{C}_3\text{H}_6\text{O}_3$ D) $\text{C}_6\text{H}_{12}\text{O}_6$
- A substance has an empirical formula of CH_2 and a molar mass of 56 grams per mole. The molecular formula for this compound is
A) CH_2 B) C_4H_6 C) C_4H_8 D) C_8H_4
- What is the molecular formula of a compound with an empirical formula of CH and a molecular mass of 78?
A) C_6H_6 B) C_4H_{10} C) C_2H_2 D) CH
- What is the percent composition by mass of nitrogen in NH_4NO_3 (gram-formula mass = 80.0 grams/mole)?
A) 17.5% B) 35.0%
C) 52.5% D) 60.0%
- A hydrated salt is a solid that includes water molecules within its crystal structure. A student heated a 9.10-gram sample of a hydrated salt to a constant mass of 5.41 grams. What percent by mass of water did the salt contain?
A) 3.69% B) 16.8%
C) 40.5% D) 59.5%
- Which list includes three types of chemical reactions?
A) condensation, double replacement, and sublimation
B) condensation, solidification, and synthesis
C) decomposition, double replacement, and synthesis
D) decomposition, solidification, and sublimation
- Which equation represents a double replacement reaction?
A) $2 \text{Na} + 2 \text{H}_2\text{O} \rightarrow 2 \text{NaOH} + \text{H}_2$
B) $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$
C) $\text{LiOH} + \text{HCl} \rightarrow \text{LiCl} + \text{H}_2\text{O}$
D) $\text{CH}_4 + 2 \text{O}_2 \rightarrow \text{CO}_2 + 2 \text{H}_2\text{O}$
- The reaction,
$$\text{Ba}(\text{NO}_3)_2(\text{aq}) + \text{Na}_2\text{SO}_4(\text{aq}) \rightarrow 2 \text{NaNO}_3(\text{aq}) + \text{BaSO}_4(\text{s}),$$
forms a precipitate whose name is
A) nitrogen B) barium sulfate
C) barium nitrate D) soluble salt

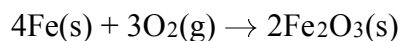
Do Now Unit 6

26. What is the total number of atoms contained in a 1.00-mole sample of helium?

- A) 1.00 atom B) 2.00 atoms
C) 1.20×10^{24} atoms D) 6.02×10^{23} atoms

Base your answers to questions **27** through **29** on the information below.

Rust on an automobile door contains $\text{Fe}_2\text{O}_3(\text{s})$. The balanced equation representing one of the reactions between iron in the door of the automobile and oxygen in the atmosphere is given below.



27. Write the IUPAC name for Fe_2O_3 .

28. Determine the gram-formula mass of the product of this reaction.

29. Identify the type of chemical reaction represented by this equation.

30. A student is instructed to make 0.250 liter of a 0.200 M aqueous solution of $\text{Ca}(\text{NO}_3)_2$.

What is the gram-formula mass of $\text{Ca}(\text{NO}_3)_2$?