

**Indiana Course-Aligned Assessment
Chemistry – Sample Items**

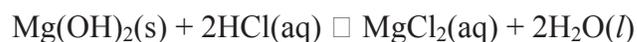
1. Many cooks prefer to use copper pans because copper has a relatively low specific heat capacity, $0.39 \text{ J/g} \cdot ^\circ\text{C}$. How much energy in kJ is needed to raise the temperature of an empty 970 g copper pan from 24°C to 98°C ?

- A 9.1 kJ
- B 2 kJ
- C 3 kJ
- D 18 kJ

2. Based on bonding principles, which compound has the highest melting point?

- A CH_4
- B NaCl
- C NO_2
- D NH_3

3. Given the reaction:



Determine the volume of 0.10 M $\text{HCl}(\text{aq})$ that will react with 0.10 g Mg(OH)_2 .

Note: Formulas, constants, and a Periodic Table of the Elements will be provided for students.

Answer Key

Item	Answer	Alignment
1	B	C.6.4
2	A	C.3.5
3	$3.4 \times 10^{-2} \text{ L}$	C.4.4