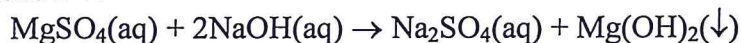


1. If there are 4 moles of sand, how many individual grains of sand are there?

$$6.02 \times 10^{23} \times 4 = 2.408 \times 10^{24} \text{ grains of sand}$$

Use the equation for questions 2-7.



2. List the reactants in this equation.

MgSO₄ and NaOH

3. List the products in this equation.

Na₂SO₄ and Mg(OH)₂

4. What does the (aq) mean in this equation?

aqueous (dissolved in water)

5. What does the (↓) mean in this equation?

precipitate (solid)

6. According to the equation, two formula units of NaOH react with how many formula units of magnesium sulfate? one formula unit of magnesium sulfate

7. In terms of moles, how many moles of magnesium sulfate react with two moles of NaOH?

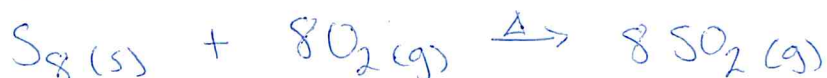
one mole of magnesium sulfate

Write the skeleton equation from the word problem, then balance it.

8. During the centuries following the collapse of the western Roman Empire, marble (calcium carbonate) was taken from the monuments of Rome and heated to form quicklime (calcium oxide), which was used to make plaster. Carbon dioxide was also produced in this decomposition reaction.



9. When a match is lit, sulfur (S₈) reacts with oxygen to release energy and form sulfur dioxide.



10. Zinc reacts with water to produce zinc hydroxide and hydrogen gas.



Balance these equations

