What is an Endothermic Reaction?

Worksheet

Endothermic reactions absorb energy (H > 0) from the surroundings. Common examples: melting ice, evaporating water, photosynthesis, dissolving certain salts. The temperature of the surroundings decreases.

Questions

1. Which is endothermic?

A) Combustion of wood
B) Freezing water
C) Melting ice
D) Neutralization of acid and base

2. In an endothermic reaction, H is

A) positive
B) negative
C) zero
D) very small

3. What happens to surroundings in endothermic?

A) Temperature increases
B) Temperature decreases
C) No change
D) Energy is released

4. Is evaporating water endothermic or exothermic?

A) Exothermic
B) Endothermic
C) Neither
D) Depends on speed

5. Melting ice: HO(s) HO(l). H = +6 kJ/mol. Is this endothermic?

6. Dissolving ammonium nitrate in water feels cold. Explain.

7. Photosynthesis: 6CO + 6HO CHO + 6O. H = +2800 kJ. Type?

8. Define: What is an endothermic reaction?

9. Define: Endothermic examples?

10. Define: What does H > 0 mean?

Answer Key

1. C) Melting ice - Melting ice absorbs heat (H > 0). Combustion and neutralization are exothermic; freezing is exothermic.

2. A) positive - H > 0 for endothermic (energy absorbed). H < 0 for exothermic.

3. B) Temperature decreases - Heat flows in (from surroundings) surroundings cool down.

4. B) Endothermic - Evaporation requires heat input (H > 0). Endothermic.

5. H is positive (+6 kJ/mol). Positive H means energy must be absorbed. This is endothermic.

6. Dissolving NHNO is endothermic (H > 0). The reaction absorbs heat from the water and surroundings. Temperature drops feels cold.

7. H is positive and large (+2800 kJ). The reaction requires energy input (sunlight). This is endothermic.

8. A reaction that absorbs energy from the surroundings, usually as heat. H > 0.

9. Melting ice, evaporating water, photosynthesis, dissolving NHNO, cold packs, melting salts.

10. Energy is absorbed (endothermic). The products have more energy than reactants.