

*Write a balanced equation for each of the following:*

1. Dinitrogen pentoxide gas in the presence of a platinum catalyst and high enough temperature forms nitrogen gas and oxygen gas.

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2. Sulfur solid reacts with iron solid to form solid iron(III) sulfide.

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3. Hydrogen gas and iron(III) oxide powder react to form liquid water and solid iron powder.

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4. Magnesium metal reacts with hydrochloric acid to form magnesium chloride solution and hydrogen gas.

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5. Magnesium sulfide solid and hydrochloric acid react to form hydrogen sulfide gas and magnesium chloride solution.

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6. Oxygen gas reacts with solid copper metal to form copper(II) oxide solid.

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7. Voltage is applied to two electrodes in a solution of iron(III) chloride and a yellow-green gas bubbles form on one electrode and metallic deposits form on the other electrode.

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8. Oxygen gas reacts with hydrogen gas to form liquid water.

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9. Hydrogen sulfide gas is bubbled through a sodium hydroxide solution to produce sodium sulfide solution and liquid water.

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10. Hydrogen gas and aluminum chloride solution are produced when solid aluminum is reacted with hydrochloric acid.

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11. Hydrogen sulfide gas is bubbled through a solution of iron(III) chloride.

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12. When strongly heated, magnesium sulfide formed a yellow crystalline deposit on the walls of a sealed reaction vessel. Metallic deposits were found on the bottom of the container.

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