**CONCEPT:** PEROXIDE AND SUPEROXIDE REACTIONS

**Reaction with Water**

- Peroxides react with water like _____ but produce $H_2O_2$ as an additional product.
- Superoxides produce $H_2O_2$ and $O_2$ as additional products.

| Peroxides and Superoxides with $H_2O$ | |
|---|---|
| **Peroxides** | $BaO_2\ (s) + \_\_H_2O\ (l) \longrightarrow Ba(OH)_2\ (aq) + H_2O_2\ (aq)$ |
| **Superoxides** | $\_\_KO_2\ (s) + \_\_H_2O\ (l) \longrightarrow \_\_KOH\ (aq) + H_2O_2\ (aq) + O_2\ (g)$ |

**EXAMPLE**: Complete and balance the following equation:

$$Na_2O_2\ (s) + H_2O\ (aq) \longrightarrow$$

**PRACTICE**: Write a balanced equation for the reaction of rubidium superoxide with water.

**CONCEPT:** PEROXIDE AND SUPEROXIDE REACTIONS

**Reaction with Acids**

- Peroxides react with acids to produce $H_2O_2$ instead of _____.
- Superoxides produce _____ in addition to _____.

| Peroxides and Superoxides with Acids | |
|---|---|
| **Peroxides** | $Na_2O_2\ (s) + \_\_HCl\ (aq) \longrightarrow \_\_NaCl\ (aq) + H_2O_2\ (aq)$ |
| **Superoxides** | $\_\_KO_2\ (s) + \_\_HNO_3\ (aq) \longrightarrow \_\_KNO_3\ (aq) + H_2O_2\ (aq) + O_2\ (g)$ |

**EXAMPLE**: Complete and balance the following reaction:

$$CsO_2\ (s) + H_2SO_4\ (aq) \longrightarrow$$

**PRACTICE**: Write a balanced equation for the reaction of barium peroxide with hydrochloric acid.