

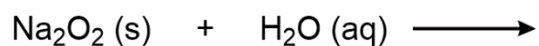
## CONCEPT: PEROXIDE AND SUPEROXIDE REACTIONS

### Reaction with Water

- Peroxides react with water like \_\_\_\_\_ but produce  $\text{H}_2\text{O}_2$  as an additional product.
- Superoxides produce  $\text{H}_2\text{O}_2$  and  $\text{O}_2$  as additional products.

Peroxides and Superoxides with $\text{H}_2\text{O}$	
Peroxides	$\text{BaO}_2 (\text{s}) + \_\_\text{H}_2\text{O} (\text{l}) \longrightarrow \text{Ba}(\text{OH})_2 (\text{aq}) + \text{H}_2\text{O}_2 (\text{aq})$
Superoxides	$\_\_\text{KO}_2 (\text{s}) + \_\_\text{H}_2\text{O} (\text{l}) \longrightarrow \_\_\text{KOH} (\text{aq}) + \text{H}_2\text{O}_2 (\text{aq}) + \text{O}_2 (\text{g})$

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



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

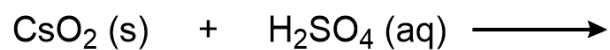
## CONCEPT: PEROXIDE AND SUPEROXIDE REACTIONS

### Reaction with Acids

- Peroxides react with acids to produce  $\text{H}_2\text{O}_2$  instead of \_\_\_\_\_.
- Superoxides produce \_\_\_\_\_ in addition to \_\_\_\_\_.

Peroxides and Superoxides with Acids	
Peroxides	$\text{Na}_2\text{O}_2 (\text{s}) + \_\_\text{HCl} (\text{aq}) \longrightarrow \_\_\text{NaCl} (\text{aq}) + \text{H}_2\text{O}_2 (\text{aq})$
Superoxides	$\_\_\text{KO}_2 (\text{s}) + \_\_\text{HNO}_3 (\text{aq}) \longrightarrow \_\_\text{KNO}_3 (\text{aq}) + \text{H}_2\text{O}_2 (\text{aq}) + \text{O}_2 (\text{g})$

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



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