

## Answer on Question #44799–Chemistry–Inorganic Chemistry

### Question

Properties of metallic oxides.

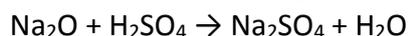
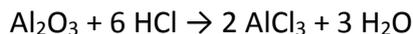
### Answer

#### 1) Physical properties of metal oxides

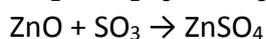
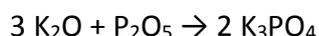
Metal oxides are crystalline solids with high melting point ( $> 1000^{\circ}\text{C}$ ). Metal oxides are insulators, i.e. they do not conduct electricity.

#### 2) Chemical properties of metal oxides

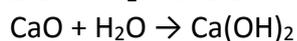
*All metal oxides react with acids resulting in salt and water formation, e.g.*



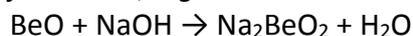
*Metal oxides can react with nonmetal oxides (under heating) resulting in salts formation, e.g.*



*Oxides of all alkaline metals and such alkaline-earth metals as Ca, Sr, Ba and Ra react with water resulting in corresponding bases formation, e.g.*



*Amphoteric oxides, namely such oxides as BeO, ZnO, Al<sub>2</sub>O<sub>3</sub>, Cr<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub> etc. can react with alkalis resulting in salts and water formation and with oxides of alkaline metals resulting in salts formation, e.g.*



*Metal oxides can participate in red-ox reaction acting as an oxidant. Such reactions are carried out at high temperatures using coke or such metals as Al or Mg as reducing agents, e.g.*

