

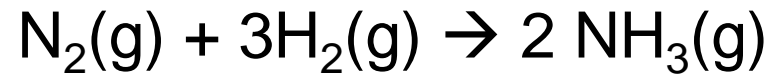


Interpreting Chemical Equations

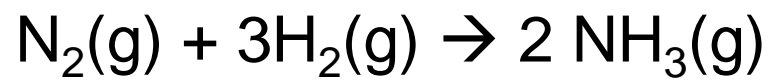
The Bromfield School
Honors Chemistry

Ammonia

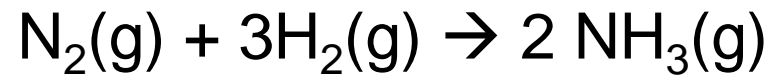
- Widely used as a fertilizer
- Produced industrially by the reaction of nitrogen with hydrogen:
 - $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightarrow 2 \text{NH}_3(\text{g})$



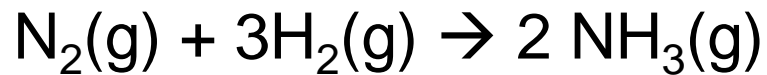
- Considering atoms:



- On a particle level:



- On a mole level:



- On a mole level:
 - One mole of nitrogen molecules reacts with three moles of hydrogen molecules to form two moles of ammonia molecules



- Mass level:

Conservation

- Only mass and atoms are conserved in every chemical reaction!



- At STP, one mole of a gas occupies 22.4L.
- Volume level: