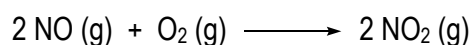


## CONCEPT: RATE LAW (SIMPLIFIED)

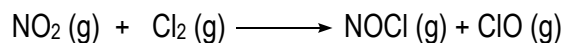
- An expression that relates the rate of a reaction to its  $\Delta$  [ \_\_\_\_\_ ], *rate constant* and *reaction order(s)*.
  - **Rate Constant:** a proportionality constant that links the \_\_\_\_\_ to [ \_\_\_\_\_ ].
  - **Reaction Order(s):** the \_\_\_\_\_ for the given concentrations.
    - Determined from a series of experiments.
  - Rate Law ignores \_\_\_\_\_.

Rate Law	
Rate Law Expression	□ _____ = Rate Constant
Rate = _____ [ _____ ] <sup>□</sup> [ _____ ] <sup>□</sup>	□ _____ = Reactant Concentrations
	□ _____ = Reaction Orders

**EXAMPLE:** Provide rate law for the following reaction:



**PRACTICE:** Rate law for the given reaction is  $\text{Rate} = k [\text{NO}_2]^2 [\text{Cl}_2]$ .



What effect would tripling the concentration of  $\text{NO}_2$  have on the rate, if  $k = 7.2 \times 10^{-3} \text{ M}^{-2} \text{ s}^{-1}$ , at  $35^\circ \text{ C}$ ?

- Increase by 3.
- Increase by 6.
- Increase by 9.
- No change.