

## Wkst 1.4: Reaction Mechanisms

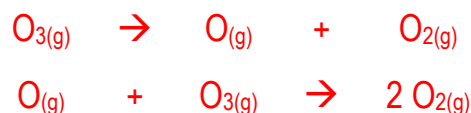
1. a) Overall equation:



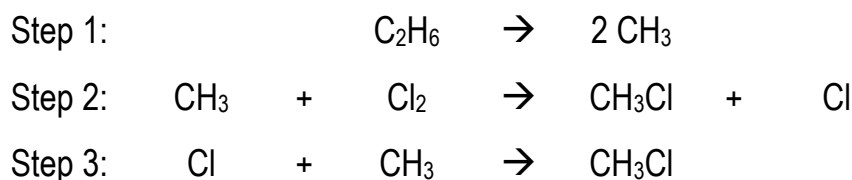
b) Intermediates:  $\text{HOCl}$ ,  $\text{OH}^-$ ,  $\text{HOI}$ . Catalyst:  $\text{H}_2\text{O}$ .

c) Since the  $\text{I}^-$  ion is involved in the rate-determining step, then we may expect the rate of the reaction to double when we double its concentration.

2. 2-Step mechanism:



3. 3-Step mechanism:



4. a) Overall equation:



b) The rate-determining step is step 2.

c) To increase the rate of reaction, one would have to increase  $[\text{I}^-]$  as it is the substance involved in the rate-determining step.

5. 4-Step mechanism:

