

AP Chemistry Daily Videos

5.11 Catalysts

Video #1

1. Does a catalyst change the rate constant? If so, how?
2. A catalyst lowers the activation energy of a reaction by providing an alternative _____ and new _____. What are three ways a catalyst increases the rate of a reaction?
3. What is the difference between a homogeneous catalyst and heterogeneous catalyst?
4. Pause the video at 4:45 and attempt the problem, then evaluate how you did and identify any errors.

The following mechanisms are proposed for the gas phase decomposition of ozone, O_3 . A student claims that the rate of the first mechanism is faster than the rate of the second mechanism because the first mechanism has fewer steps. Do you agree or disagree? Justify your claim.

Mechanism 1	
STEP 1	$O_3 \rightarrow O_2 + O$
STEP 2	$O_3 + O \rightarrow 2O_2$
OVERALL	$2O_3 \rightarrow 3O_2$

Mechanism 2	
STEP 1	$NO + O_3 \rightarrow NO_2 + O_2$
STEP 2	$O_3 \rightarrow O_2 + O$
STEP 3	$NO_2 + O \rightarrow NO + O_2$
OVERALL	$2O_3 \rightarrow 3O_2$

CLAIM	
EVIDENCE	
REASONING	

