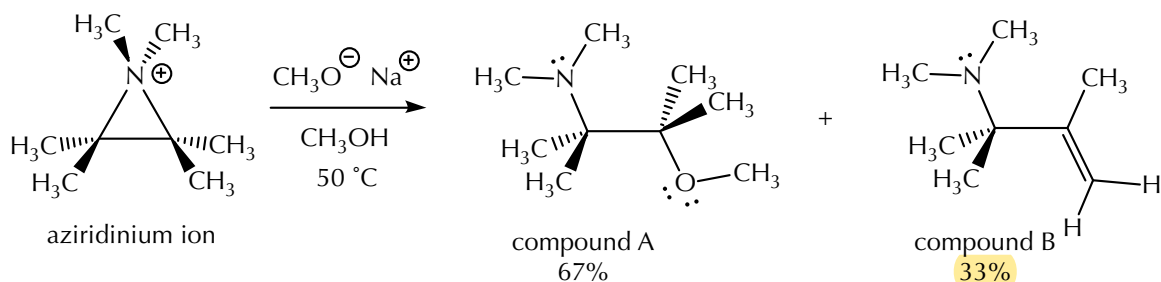
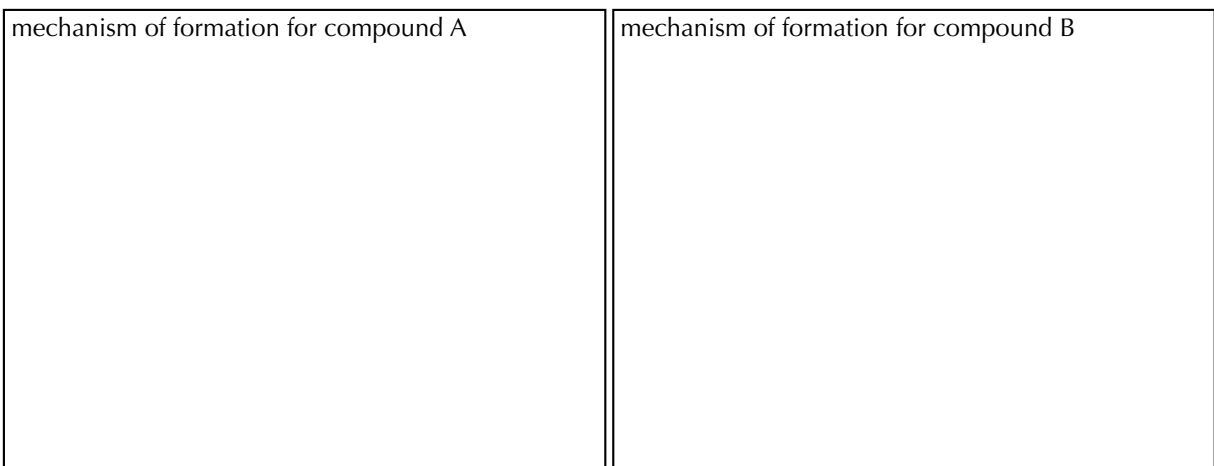


- 9.36 Aziridinium ions contain a positively charged nitrogen in a three-membered ring. The reactivity of these cations is analogous to halonium ions. For example, the following reactions were observed for this aziridinium ion.



The kinetics of the reactions shows that both compound A and compound B are formed in second-order reactions. If the aziridinium ion is dissolved in methanol without sodium methoxide, only the first product, compound A, is formed.

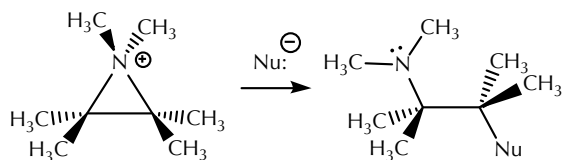
- (a) Draw curved arrow mechanisms for the two reactions of methoxide ion with the aziridinium ion shown above.



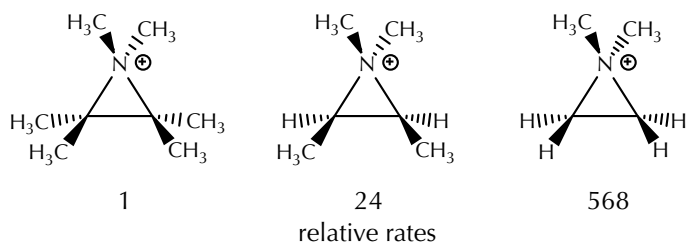
- (b) Why is compound A the only product formed when the aziridinium ion is put in methanol, while both compounds A and B form when sodium methoxide is the reagent?



- 9.37 Aziridinium ions contain a positively charged nitrogen in a three-membered ring, and undergo ring-opening reactions with nucleophiles (Nu:) such as water, alcohols, and halide ions, comparable to halonium ions.



The effect of structure on the rate of the ring-opening reaction of aziridinium ions was studied. The following results were found:



How would you explain this trend in the rates of the reaction?

