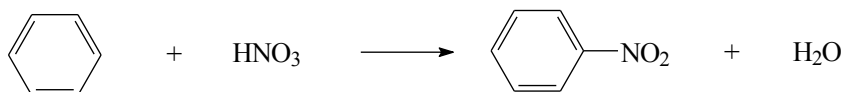


Marks
5

- The nitration of benzene to form nitrobenzene may be written with the following stoichiometry.



The reaction was performed in the presence of excess concentrated sulfuric acid and the following data were obtained.

Experiment number	initial [benzene] (M)	initial [nitric acid] (M)	[nitrobenzene] (M) after 100 s
1	0.010	1.0	1.2×10^{-4}
2	0.020	1.0	2.4×10^{-4}
3	0.020	0.50	1.2×10^{-4}

Determine the rate of the reaction for Experiment 1.

Answer:

What is the rate equation for this reaction?

Rate =

What is the value of the rate constant?

$k =$

THIS QUESTION CONTINUES ON THE NEXT PAGE