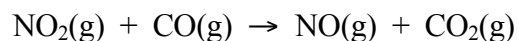


Marks
4

- The major pollutants emitted by cars, NO(g), CO(g), NO₂(g) and CO₂(g), can react according to the following equation.



The following rate data were collected at 215 °C.

Experiment	[NO ₂] ₀ (M)	[CO] ₀ (M)	Initial rate (d[NO ₂]/dt, M s ⁻¹)
1	0.263	0.826	1.44 × 10 ⁻⁵
2	0.263	0.413	1.44 × 10 ⁻⁵
3	0.526	0.413	5.76 × 10 ⁻⁵

Determine the rate law for the reaction.

Suggest a possible mechanism for the reaction based on the form of the rate law.
Explain your answer.