

In Class Problem
Kinetics
CENG 340–Introduction to Environmental Engineering
Instructor: Deborah Sills
September 16, 2013

Modified from Mihelcic and Zimmerman

Nitrogen dioxide (NO_2), an air pollutant produced when N_2 in air reacts with O_2 during fuel combustion, can be destroyed via photochemical reactions, which result in the formation of ozone. In one study, NO_2 concentrations decreased from 5 ppm_v to 2 ppm_v in four minutes due to exposure to light.

1. What is the first-order rate constant for this reaction?

2. What was the half-life of NO_2 during this study?