

residence time

1. (instrumentation): The time required for air or reagent parcel to pass from the entrance to the exit of an instrument. Often this is approximated as the ratio of the interior volume of the device to the flow rate.
2. (atmospheric): The average time a molecule or aerosol spends in the atmosphere after it is released or generated there. For compounds with well defined sources and emission rates, this is estimated by the ratio of the average global concentration of a substance to its production rate on a global scale. It is a function of not only the emission rates but the loss rates by chemical and physical removal processes.

Source:

PAC, 1990, 62, 2167 (*Glossary of atmospheric chemistry terms (Recommendations 1990)*) on page 2211