

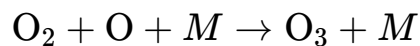
Ozone Formation and Atomic Oxygen

<https://gemini.google.com/app/1169fd9bd24b5ed1>

Response: **First Statement:** True **Second Statement:** False

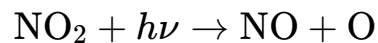
Statement Breakdown

- **First Statement:** Atomic oxygen (O) is required to react with molecular oxygen (O₂) to form ozone (O₃) via the reaction:



This makes atomic oxygen an essential factor for atmospheric ozone formation.

- **Second Statement:** Atomic oxygen is **not** produced *only* by the photodissociation of molecular oxygen (O₂ $\xrightarrow{h\nu}$ O + O). It is also produced by the photodissociation of nitrogen dioxide (NO₂) in the lower atmosphere (troposphere):



Additionally, photolysis of ozone (O₃) itself yields atomic oxygen.

Standard A/L Assertion-Reason Options:

- **Result:** Statement 1 is True, Statement 2 is False.
 - **Correct Option: (3)**
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