

# Freons: Stable CFCs with Ozone Impact

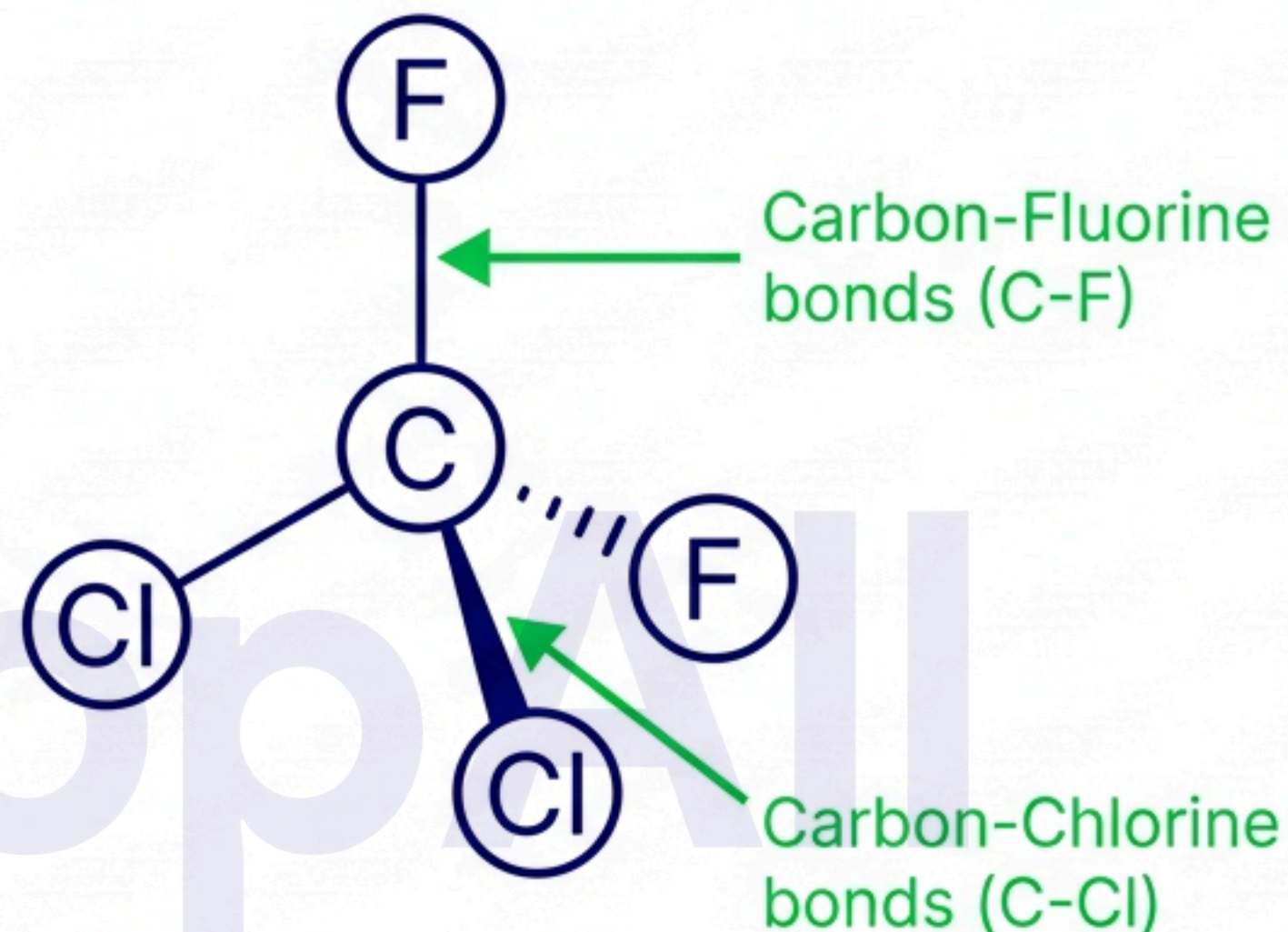
The molecular journey from industrial miracle to global environmental hazard.



# Chlorofluorocarbons: The Molecular Blueprint

Chlorofluorocarbon compounds of methane and ethane.

**Key Example: Freon-12**



# The Anatomy of an Industrial Miracle



## Extremely Stable & Unreactive

Long shelf-life and safe for complex machinery.



## Non-Toxic

Safe for human proximity in homes and workplaces.



## Non-Corrosive

Will not degrade metal piping or containers.



## Easily Liquefiable Gas

Perfect for thermodynamic cooling cycles.



# You've Learned the Theory. Let's Test Them Now.

$$E=mc^2$$



Turn theory into marks with **unlimited MCQs, smart analysis, and focused revision.**

**Practice Now**



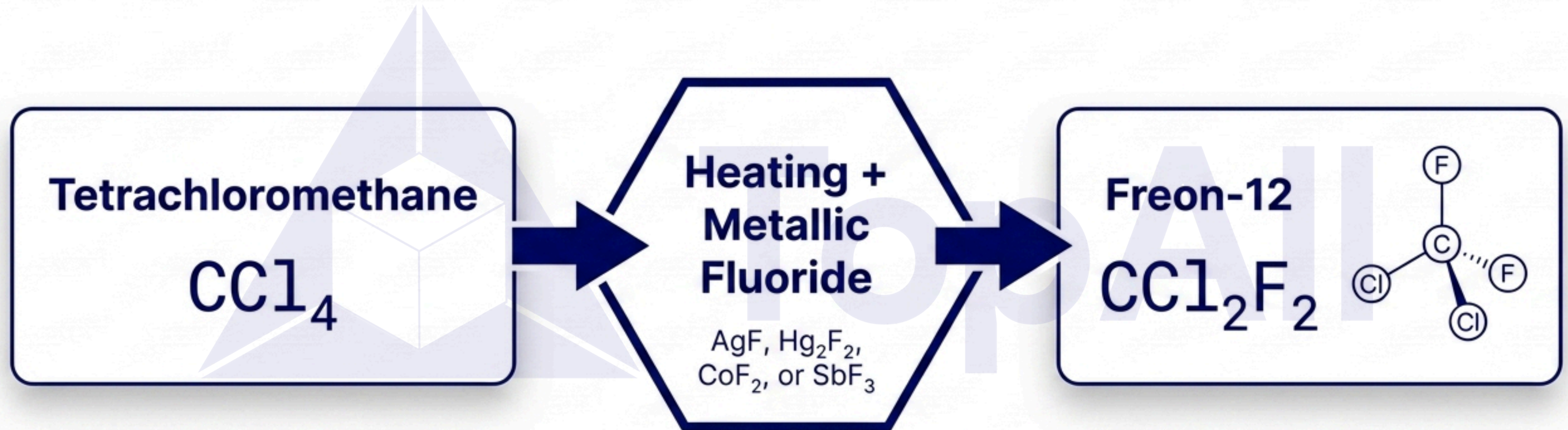
At [prep.topall.app](https://prep.topall.app)

## Key Highlights

- » Free Study Material, Videos & Infographics
- » Push Your Limits with Level-Based Challenges
- » Climb the Leaderboard Among Fellow Aspirants
- » Practice Unlimited MCQs for NEET & JEE
- » Get Clear Explanations, Not Just Marks
- » Track Your Performance Smarter



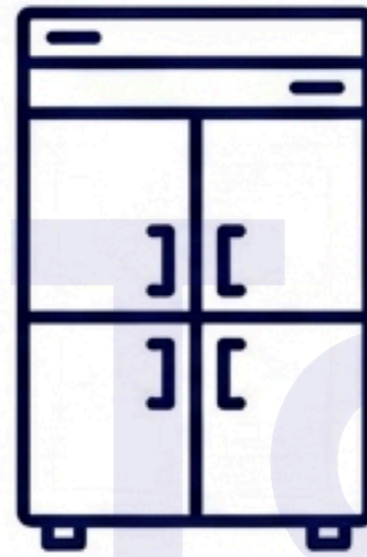
# Engineering Stability: The Swarts Reaction



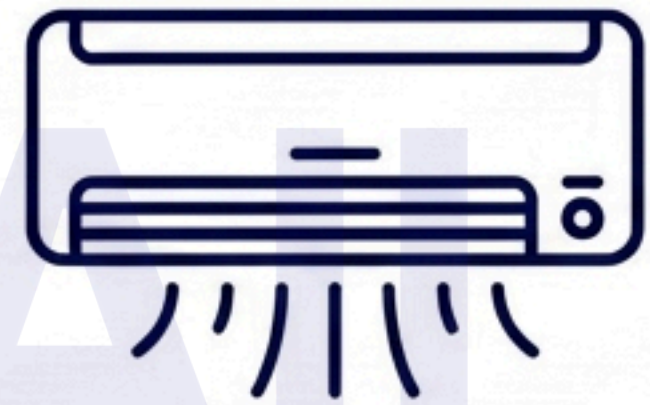
# Global Adoption: Cooling and Propelling the 20<sup>th</sup> Century



Propellants for  
aerosol cans.



Industrial & domestic  
refrigeration.



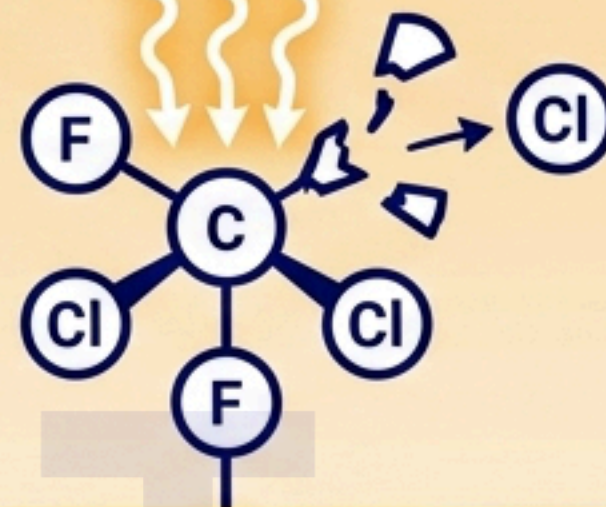
Global air conditioning  
systems.



By 1974, total global production reached ~2 billion pounds annually—all destined for eventual atmospheric release.

# The Stratospheric Elevator: A Paradox of Stability

High-Energy  
UV Radiation

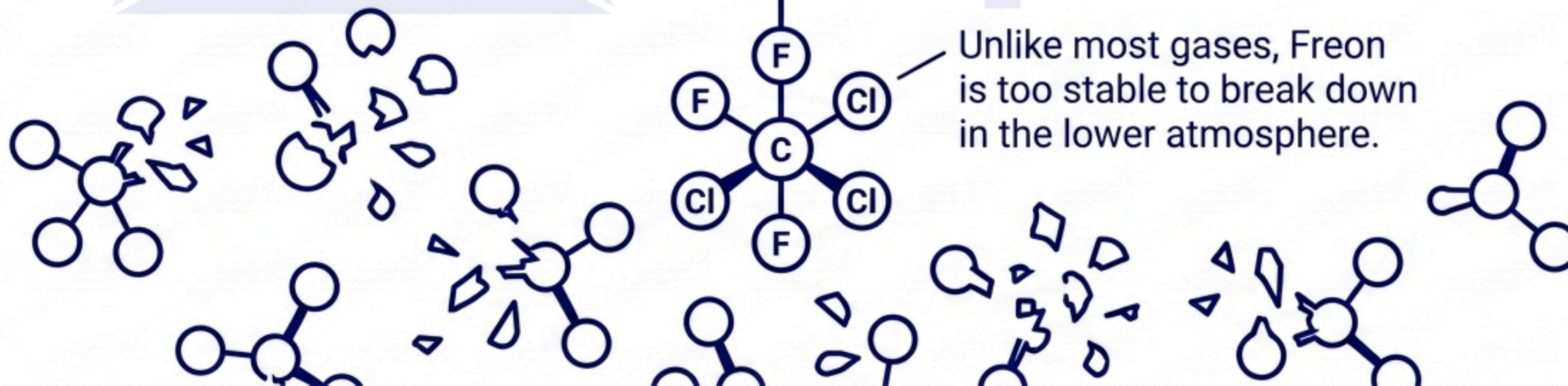


Freon diffuses unchanged into the stratosphere, where it is finally cracked open by intense UV light.

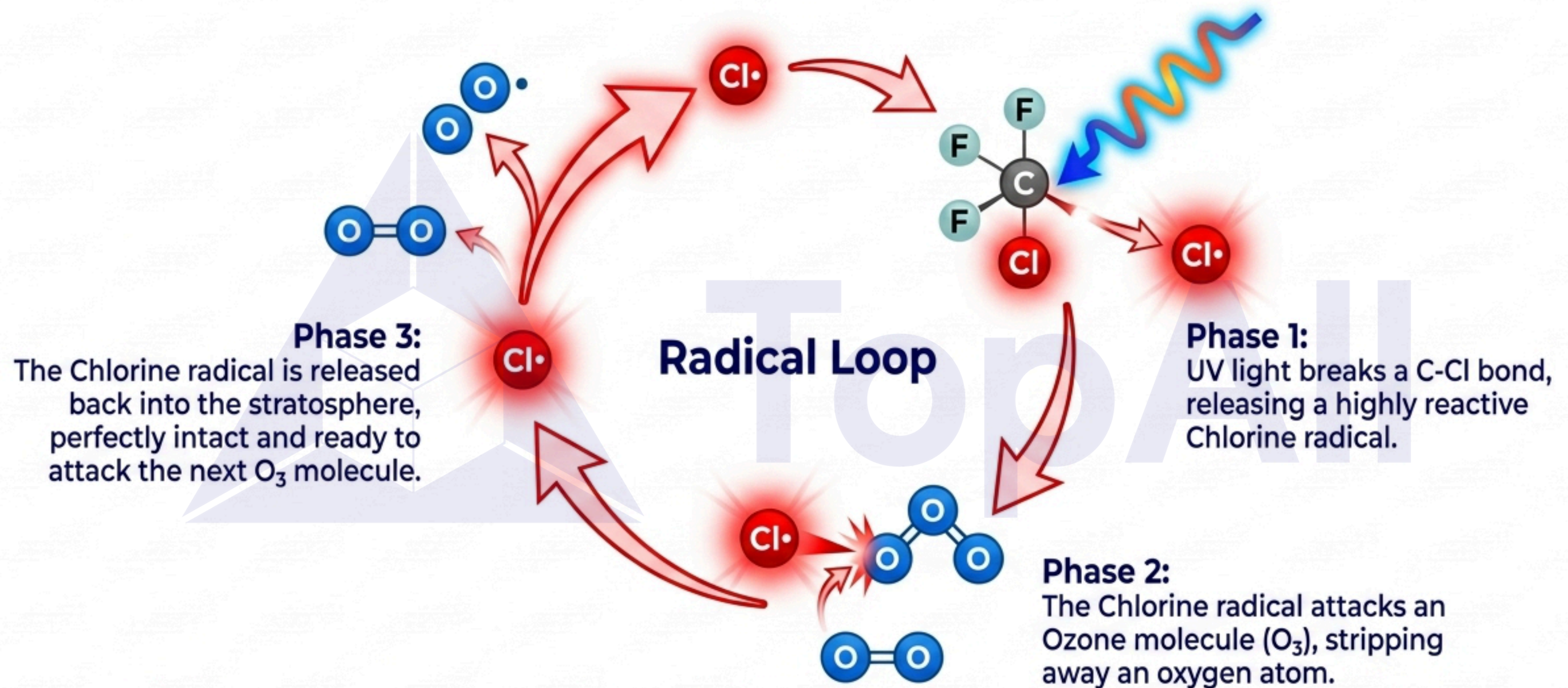
Stratosphere

Troposphere

Unlike most gases, Freon is too stable to break down in the lower atmosphere.



# Stratospheric Disruption: The Radical Chain Reaction



**WARNING:** A single Freon molecule initiates a self-sustaining radical chain reaction, continuously upsetting the planet's natural ozone balance.



# You've Learned the Theory.

## Now Let's Test It.

Reading notes gets you knowledge.

**Practicing MCQs gets you marks.**

**That's exactly what TopAll Pro is built for.**

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### What TopAll Pro Does Differently

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**Practice the moment you finish studying**  
Jump in while the concept is still fresh in your head

**4.5L+**  
MCQs

**1.5L+**  
Students

**AI Powered**  
In-Depth Analysis