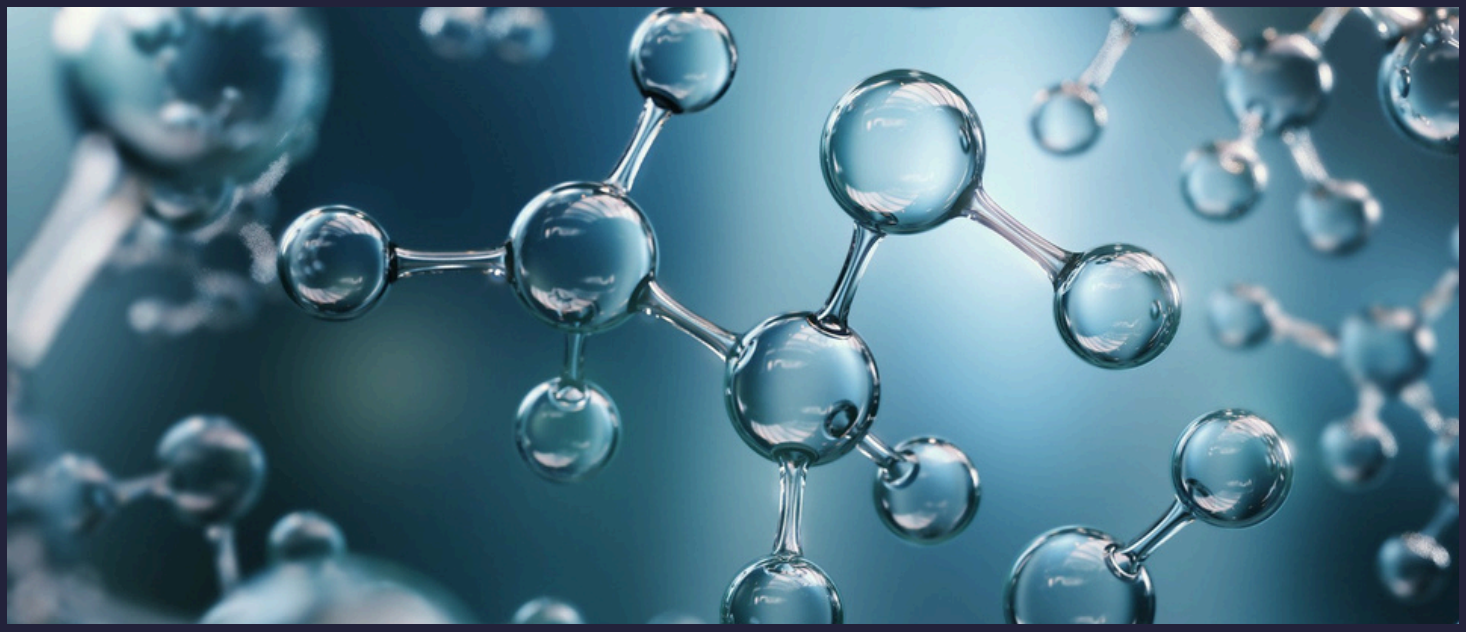
CROISSANCE CORPORATION
Air, Water & Innovation...



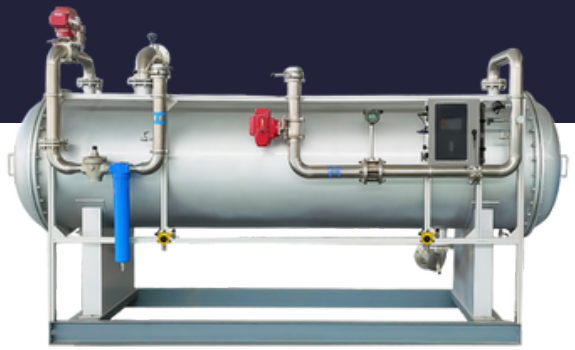
OZONOLYSIS APPLICATIONS

Green Chemistry • Selective Oxidation • Sustainable Processes

INTRODUCTION

Ozonolysis is a key reaction in modern chemical and pharmaceutical industries, where ozone (O_3) is used as a powerful oxidant to cleave double bonds in alkenes and other organic compounds. Traditionally, oxidation relied on harsh reagents such as permanganates, chromates, or chlorine-based chemicals—leading to toxic by-products and waste.

With ozone, industries can achieve high selectivity, cleaner reactions, and eco-friendly production, making it an essential tool in fine chemicals, pharmaceuticals, fragrances, and advanced materials.



How It Works?

01 Ozone Generation

Oxygen is converted into ozone using high-purity ozone generators

02 Reaction Stage

Ozone reacts with unsaturated bonds (C=C) in alkenes, producing ozonides

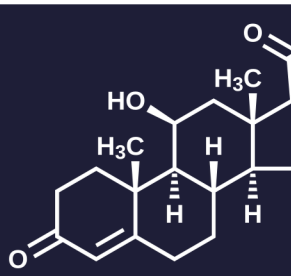
03 Work-Up / Quench

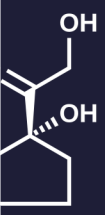
The ozonide is reduced or oxidized further, depending on the desired products

04 Residue Free

Ozone decomposes back to oxygen, avoiding chlorine-based by-products

Benefits at a Glance





High Selectivity

Precisecleavageofdouble bonds

Eco-Friendly

Replacestoxicoxidizing chemicals with clean ozone

No Chlorinated Waste

Reducesenvironmentalburden from halogenated by-products

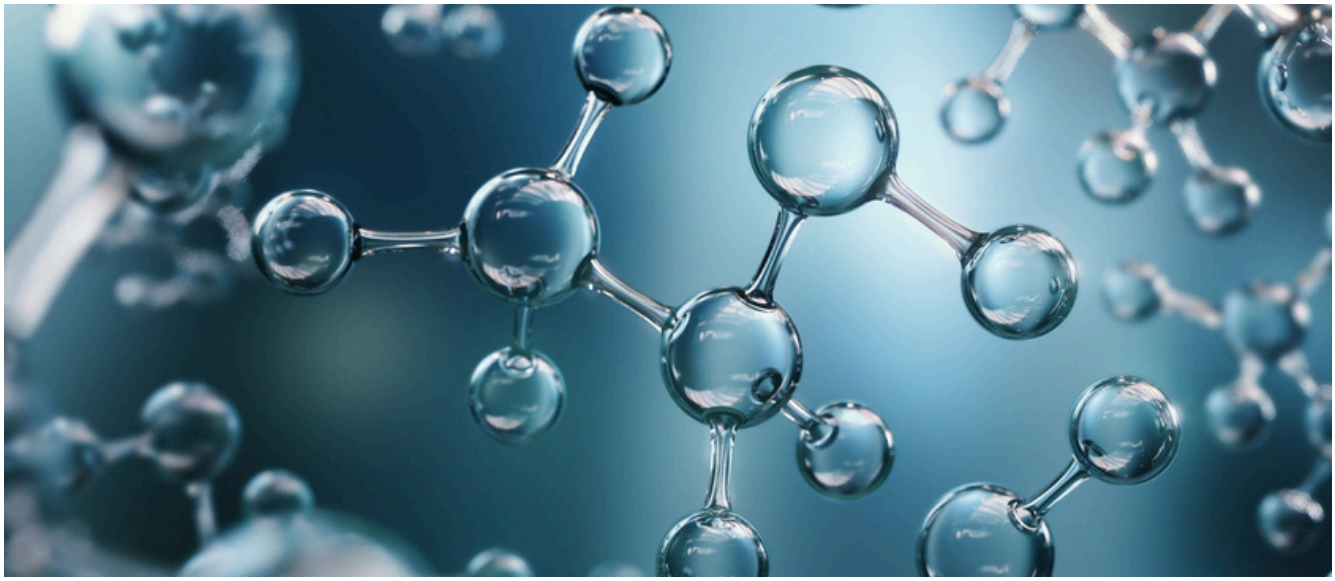
Flexible Applications

Canbeadaptedforliquidor gas-phase reactions

Scalable

Fromlab-scale R&D to full industrial production

Applications of Ozonolysis



Pharmaceuticals
Production of intermediates, APIs (Active Pharmaceutical Ingredients)

Fine Chemicals
Aldehydes, ketones, acids for specialty chemistry

Fragrances & Flavors
Creation of key aroma compounds

Polymers & Materials
Surface activation and modification

Green Chemistry
Alternative to hazardous oxidants for sustainable synthesis

Technical Notes

(Indicative Range – customizable)

01 **Ozone Output Range**
10 g/h to 100 g/h (lab/pilot) up to 1–5 kg/h (industrial)

02 **Feed Gas**
Oxygen-fed systems for high-purity applications

03 **Reaction Medium**
Gas-phase ozonolysis or dissolved ozone in solvents

04 **Process Control**
Requires precision dosing and temperature monitoring

05 **Safety Compliance**
Designed with ozone destruct units and closed-loop systems

Safety First

01 Ozonolysis must be carried out in sealed reactors with proper interlocks

02 Excess ozone must be destroyed using ozone destructors

03 Operators must be protected with ozone sensors and alarms

04 Systems must follow OSHA exposure limits and good laboratory/industrial practice

Recommended Products

(as per requirements we suggest)

01 Oxipure CDI Series

High-precision ozone generators for chemical applications

02 Oxipure Membrel

Compact electrochemical ozone generators ideal for high-purity lab and pharma use

03 Ozone Gas Analysers

For precise monitoring of ozone dosage in reactions

04 Ozone Mixing Systems

For efficient gas-liquid or solvent- phase integration

Conclusion

Ozonolysis isa cornerstoneofgreen chemistry offering selective, efficient, and sustainable oxidation without harmful by-products. With Croissance's advanced ozone systems, industries can scale ozonolysis from laboratory research to full production with safety, precision, and reliabilit

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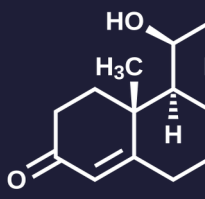
Your Next Step

Experience the future of safe, sustainable sterilisation.



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