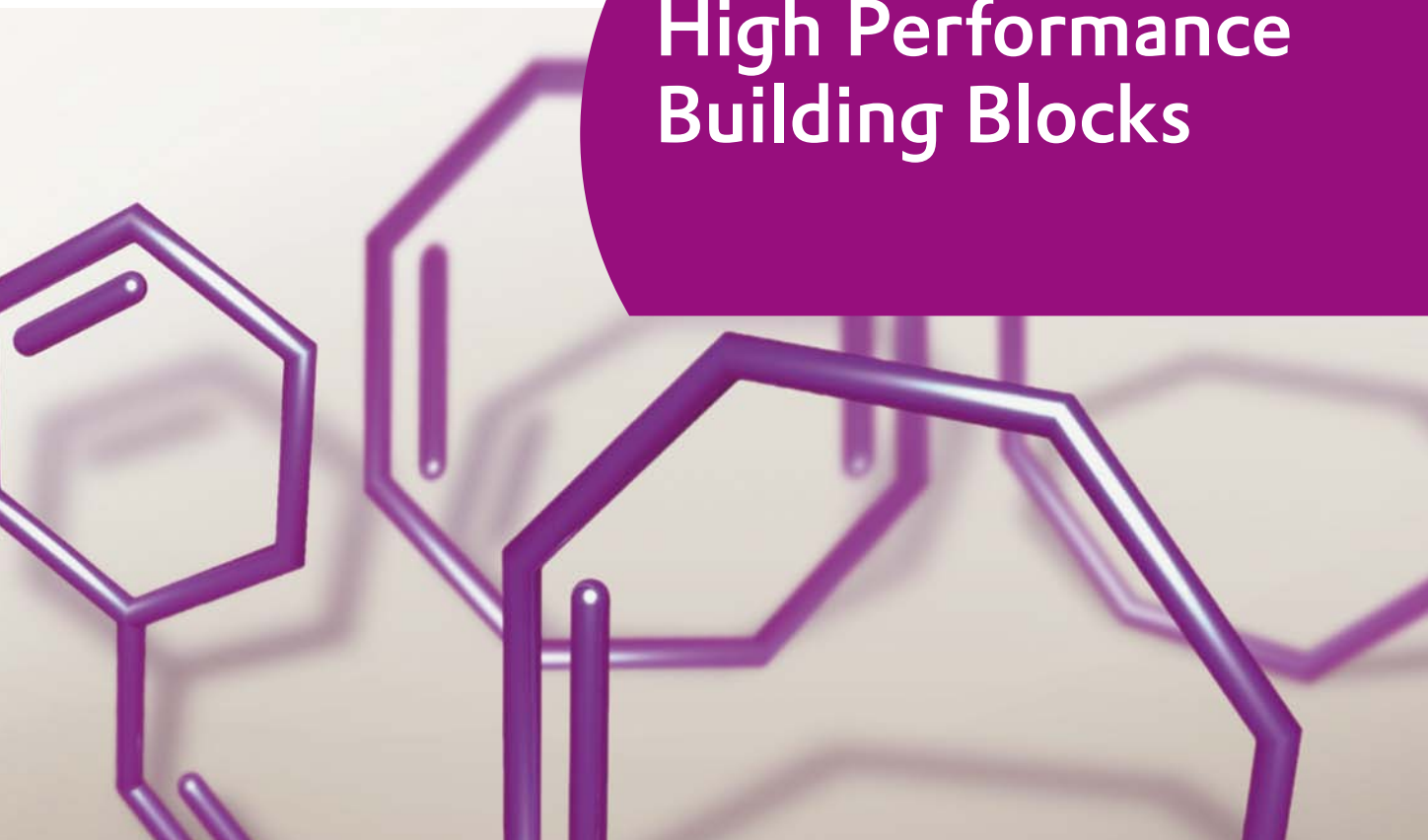


High Performance Building Blocks





Evonik, the creative industrial group from Germany, is one of the world leaders in specialty chemicals. Our activities focus on the key megatrends health, nutrition, resource efficiency and globalization.

Evonik. Power to create.

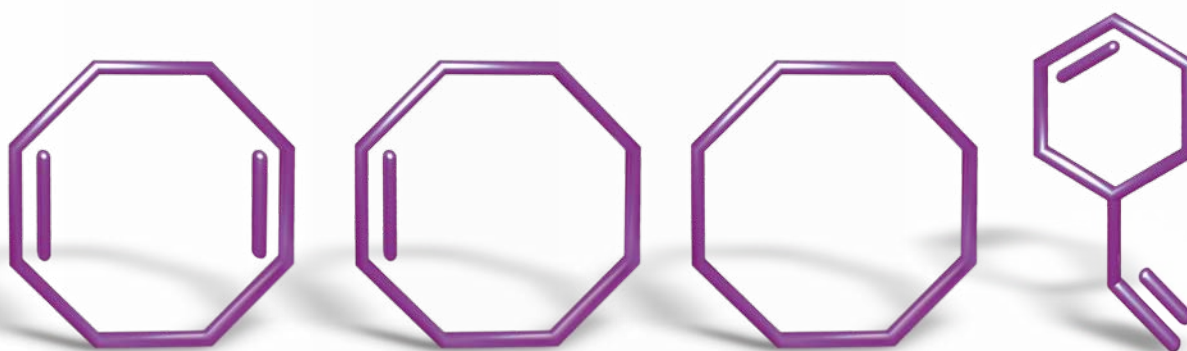
Introduction

The specialty chemicals company is a leader in the production of industrially available cyclic C8 monomers and offers the four most important synthetic chemicals in this field.

- **1,5-Cyclooctadiene (COD)**
- **Cyclooctene (COE)**
- **Cyclooctane (COAN)**
- **4-Vinylcyclohex-1-ene (VCH)**

The C8 monomers are used for production of flame retardants, as modulators in polyolefin production, as building blocks in the perfume and aroma industries, and as intermediates for synthesis of specialty chemicals.

1,5-cyclooctadiene, for example, is used as a base material for producing effective flame retardants for plastics. COD and COE are also building blocks in the fragrance industry for production of components with musky base notes.



→ 1,5-Cyclooctadiene (COD)

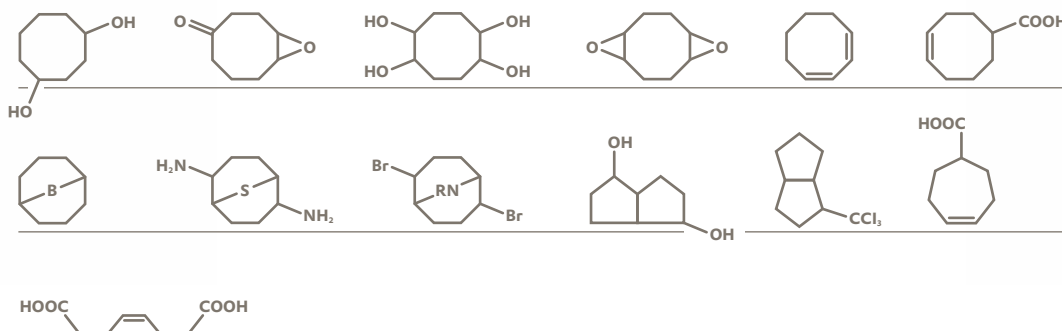


The doubly unsaturated cyclic hydrocarbon 1,5-cyclooctadiene (COD) is a colorless liquid with an aromatic odor.

- COD is an important starting material for synthesis of cyclic C8 compounds.
- Bromination produces an effective flame retardant for plastics.
- COD is a component of catalysts in the silanes production process.
- It is used as a modulator in the rubber industry.
- COD also serves in the fragrance industry for production of fragrances.

Characteristic properties

Property	Value
Empirical formula	C ₈ H ₁₂
CAS-Number	111-78-04
Molecular weight	108.2
Melting point	-15.8 °C
Boiling point 1013 hPa	145.6 °C
Purity	99% (min)



→ Cyclooctene (COE)

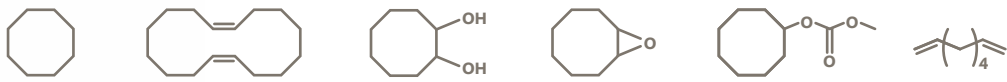
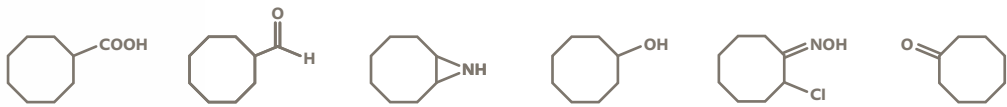


The singly unsaturated cyclic hydrocarbon cyclooctene (COE) is a colorless liquid with a characteristic smell.

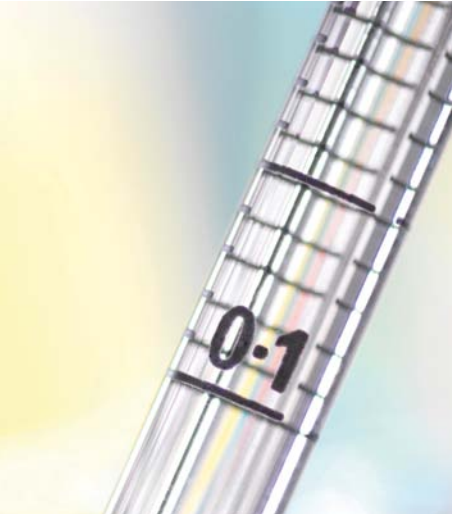
- Ozonolysis of COE and the oxidative degradation in nitric acid yield suberic acid.
- COE can be used as building block for chemical lead structures in the fragrance industry.
- Thermolysis of COE yields the Evonik product 1,7-octadiene which can be used as crosslinker.

Characteristic properties

Property	Value
Empirical formula	C ₈ H ₁₄
CAS-Number	931-87-3
Molecular weight	110.2
Melting point	-16.9 °C
Boiling point 1013 hPa	145.6 °C
Purity	
Cyclooctene	≥ 96%
Cyclooctane	≤ 4%



→ Cyclooctane (COAN)



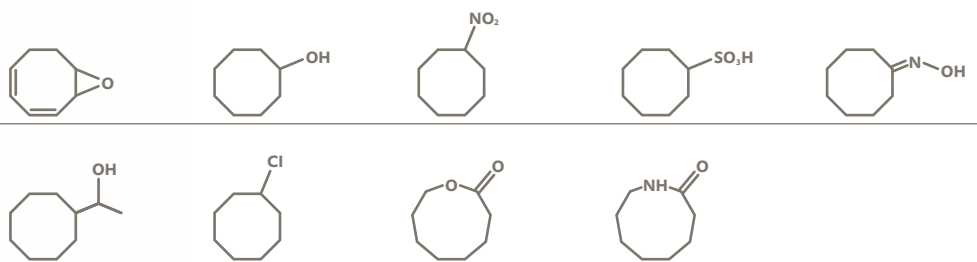
The saturated cyclic hydrocarbon cyclooctane (COAN) is a colorless liquid at room temperature.

- COAN is very easily soluble in apolar substances.

It can be used as a solvent whenever the special chemical inertness of saturated cyclic hydrocarbons is required.

Characteristic properties

Property	Value
Empirical formula	C_8H_{16}
CAS-Number	292-64-8
Molecular weight	112.2
Melting point	12 - 14 °C
Boiling point 1013 hPa	150 - 152 °C
Purity	≥ 98.5% (min)



→ Vinylcyclohexene (VCH)

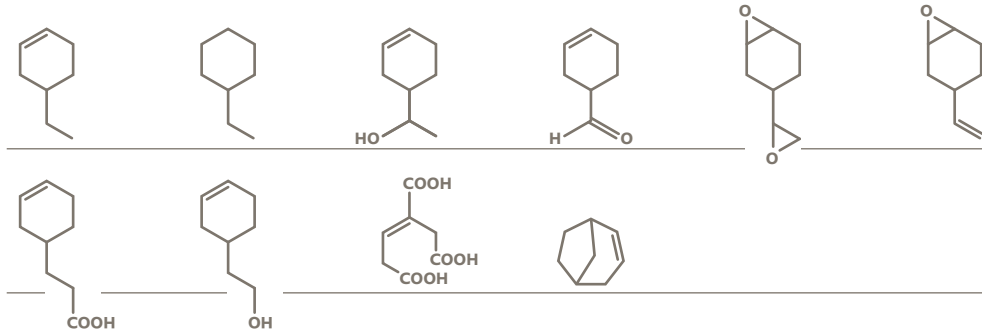


The doubly unsaturated cyclic hydro-carbon 4-vinylcyclohexene (VCH) is a colorless liquid with a pungent odor.

- VCH can be used as building block for exclusive synthesis.
- Due to the reactive vinyl-group, VCH can act as modulator in polymerisation processes

Characteristic properties

Property	Value
Empirical formula	C ₈ H ₁₂
CAS-Number	100-40-3
Molecular weight	108.2
Melting point	-101 °C
Boiling point 1013 hPa	129 °C
Purity	≥ 98% (min)



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