



>>Entry Name: Ketene, 8CI

Synonym(s): Ethenone, 9CI

CAS Registry Number: 463-51-4

$\text{H}_2\text{C}=\text{C}=\text{O}$

Molecular Formula:  $\text{C}_2\text{H}_2\text{O}$

Molecular Weight: 42.037

Accurate Mass: 42.010565

Percentage Composition: C 57.14%; H 4.80%; O 38.06%

Use/Importance: Synthetic reagent. Reacts with *o,m*-hydroxybenzoic acids (but not *p*-isomer) to give aspirin and homologues. Used in the manuf. of acetates, Acetic acid [DFR91-W](#) and Acetic anhydride [DFR94-Z](#)

Physical Description: Gas with pungent odour

Melting Point: Mp  $-151^\circ$

Boiling Point: Bp  $-56^\circ$

Solubility: Fairly sol.  $\text{Me}_2\text{CO}$ , sol.  $\text{H}_2\text{O}$

Other Data: Stable to  $\text{O}_2$ . Readily polymerises to 1,3-Cyclobutanedione [CXT82-P](#) and 4-Methylene-2-oxetanone [BGW70-Z](#)

Hazard & Toxicity: Extremely flammable, fl. p.  $-107^\circ$ , autoignition temp.  $528^\circ$ . Forms explosive diacetylperoxide with  $\text{H}_2\text{O}_2$ . Eye, skin and mucous membrane irritant. Inhalation can cause respiratory distress incl. pulmonary oedema. OES: long-term 0.5 ppm; short-term 1.5 ppm

>>Derivative: Di-Me acetal

Synonym(s): 1,1-Dimethoxyethene, 9CI

CAS Registry Number: 922-69-0

Molecular Formula:  $\text{C}_4\text{H}_8\text{O}_2$

Molecular Weight: 88.106

Accurate Mass: 88.05243

Percentage Composition: C 54.53%; H 9.15%; O 36.32%

Boiling Point: Bp<sub>740</sub>  $89-91^\circ$

Density:  $d_4^{25}$  0.93

Refractive Index:  $n_D^{25}$  1.3962

>>Derivative: Di-Et acetal

Synonym(s): 1,1-Diethoxyethylene

CAS Registry Number: 2678-54-8

Molecular Formula:  $\text{C}_6\text{H}_{12}\text{O}_2$

Molecular Weight: 116.16

Accurate Mass: 116.08373

Percentage Composition: C 62.04%; H 10.41%; O 27.55%

Use/Importance: Reagent for synth. of anthraquinones, etc.

Physical Description: Liq.

Boiling Point: Bp  $76-77^\circ$

Fluka: 60713

>>Derivative: Dimethyl dithioacetal

>>Derivative: Trimethylene dithioacetal

Synonym(s): 2-Methylene-1,3-dithiane

CAS Registry Number: 21777-31-1

Molecular Formula:  $\text{C}_5\text{H}_8\text{S}_2$

Molecular Weight: 132.25

Accurate Mass: 132.00674

Percentage Composition: C 45.41%; H 6.10%; S 48.49%

Boiling Point: Bp<sub>22</sub>  $105^\circ$ . Bp<sub>9,5</sub>  $79-80^\circ$

References: