Chemical of the Week – Part 2

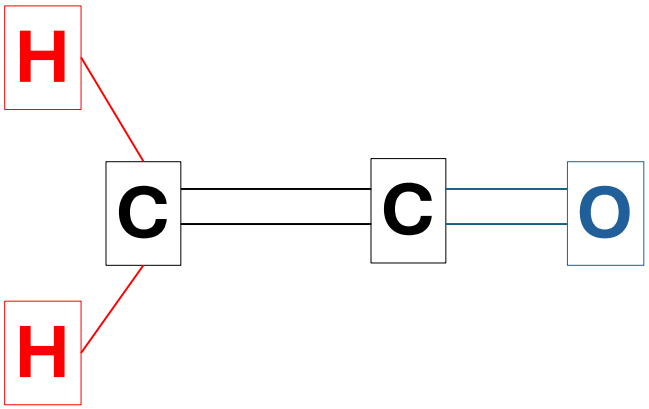
Hazard Profile	
Chemical Name and Pseudonyms	Ketene, Carbomethane, Ethenone, Keto-ethylene
UN Number	
Chemical Formula	$CH^2=CO$
Hazards	Toxic, corrosive, polymerization potential, flammable gas
NFPA Hazard Class (H-F-R-Ⓞ)	4 – 2 – 3 – ₩
PPE Considerations	Flash protective CPC or SFPC with SCBA based on assignment
Fire Fighting Considerations	CO_2, Dry chemical, ATC AFFF, Water
Decontamination	Ventilation
Detection and Monitoring	Colorimetric, spectroscopy, PID (IP = 9.61eV), electrochemical sensor
Chemical and Physical Properties	
Physical State	Colorless gas
Vapor Pressure	>1 ATM
Boiling Point	-69°F
Vapor Density	1.45
Specific Gravity	Reacts with water
Miscibility	Reacts with water
Flash Point	-
LEL/UEL	- / -%
Autoignition Temp	-
pH	-
Toxicity	
IDLH	5 ppm
LC_{LO}	23 ppm
LD50	-
AEGL1/AEGL 2/AEGL (10 Min)	NR / .08 /.24 ppm
Emergency Response Planning Guide (ERPG) 1/2/3	- / - / -
Protective Action Criteria (PAC) 1/2/3	.0057 / .063 / .19 ppm
PEL/REL/STEL	5 / 1/ - ppm
Radioactive (Yes/No)	No
Medical	
Toxicological Considerations	Toxic inhalation by inhalation and contact
Signs/Symptoms of Exposure	Respiratory/skin/eye irritation, pulmonary edema, shortness of breath

Medical Treatment	Fresh air treat symptomatically

Other Information

Extremely flammable. Mixtures with air are explosive. Reacts violently with water; reacts vigorously with alcohols, ammonia. Readily polymerizes and cannot be shipped or stored. Is obtained instead as needed from **diketene**.

DIKETENE is extremely flammable. Forms explosive vapor/air mixtures above 33°C. Undergoes a further exothermic polymerization that is retarded by storage in the solid state (frozen) or by the use of stabilizing additives. This polymerization becomes violent (with risk of fire or explosion) with warming or on contact with acids or bases. Reacts violently with water.

Reacts with mineral and clay-based absorbents and dirt/earth.

Chemical Structure