>>**Entry Name: Acetic acid,** 9CI, USAN
ENTRY UNDER REVIEW
Synonym(s): Ethanoic acid. Methanecarboxylic acid. FEMA 2006

CAS Registry Number: 64-19-7
Related CAS Registry Numbers(s): 71-50-1 758-12-3 1186-52-3

WC4800 WE3500 WE9900
H_3CCOOH

Molecular Formula: $C_2H_4O_2$
Molecular Weight: 60.052
Accurate Mass: 60.02113
Percentage Composition: C 40.00%; H 6.71%; O 53.28%

as Ac derivs. of the relevant alcohols. Salts are included in the *Dictionary of Inorganic Compounds*
Source/Synthesis: Metabolic intermed., bacterial oxidn. prod. of Ethanol BGT97-X, known since ancient times as dil. soln. (vinegar). Major constituent of human and present in other primate vaginal secretions. Manuf. industrially by oxidn. of naphtha, Acetaldehyde DFR74-T or Butane BGV93-D or (since 1970) by the Monsanto process involving methanol carbonylation over an Rh or Ir catalyst, which now (1996) accounts for =60% of world production
Use/Importance: Industrial and lab. solv., used for preserving foods. Major petrochemical used in manuf. of cellulose acetate, vinyl acetate and other acetate esters and also 1,4-Benzenedicarboxylic acid DSP80-V. Solv. in prodn. of 1,4-Benzenedicarboxylic acid DSP80-V. Used as component of buffers; as masking agent for Al, La, Cr(*III*), Pb, Th; lead(*IV*) acetate used for photometric detn. of H_2O (λ_{max} 400 nm) in pure solvs. 34th in order of volume for USA in 1994 (production 1.91 million tons/year). Pharmaceutical aid
Physical Description: Liq. or cryst. with pungent vinegar odour
Melting Point: Mp 16.7°
Boiling Point: Bp_{31} 30°. Bp 118°
Solubility: Misc. H_2O, EtOH, Et_2O; sol. most org. solvs.; insol. CS_2
Density: d_4^{20}1.049
pKa Value: pK_a 4.76 (20°,H_2O) pK_a 4.78 (25°)
Refractive Index: n_D^{20} 1.3718 n_D^{25} 1.3696
Other Data: Vp 15.5 mmHg (25°). Molecular Fp depression 39, molecular Bp elevation 29.9. Dissolves elemental S
Hazard & Toxicity: Flammable, fl. p. 39°, autoignition temp. 463°. Reacts violently with some oxidants. Corrosive and irritating to all tissues. Exp. reprod. effects. OES: long-term 10 ppm; short-term 15 ppm

Aldrich: 31859-0
Fluka: 45730
Sigma: J6294
Supelco: 4-6928

>>**Derivative:** Me ester