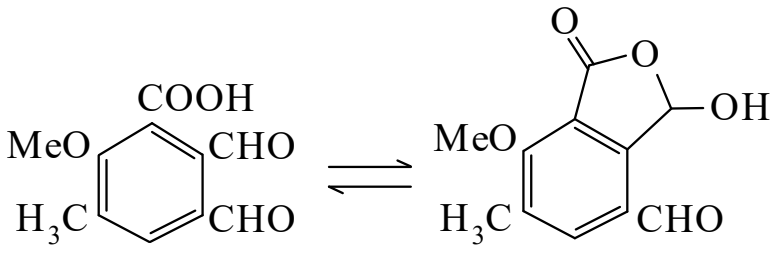
>>**Entry Name: 2,3-Diformyl-6-methoxy-5-methylbenzoic acid,** 9CI
Synonym(s): 5,6-Diformyl-2-methoxy-*m*-toluic acid. **Gladiolic acid**



CAS Registry Number: 478-05-7

Molecular Formula: $C_{11}H_{10}O_5$
Molecular Weight: 222.197
Accurate Mass: 222.052825
Percentage Composition: C 59.46%; H 4.54%; O 36.00%
Biological Source: Metab. of *Penicillium gladioli*
Use/Importance: Antifungal antibiotic
Physical Description: Silky needles (H_2O)
Melting Point: Mp 160°
Solubility: Sol. hot H_2O, Me_2CO, EtOH, AcOH; BERDY SOL: Sol. MeOH, dioxan, AcOH, Me_2CO, bases, $CHCl_3$; fairly sol. H_2O, Et_2O; poorly sol. C_6H_6, CCl_4, hexane
pKa Value: pK_a 4.4 (H_2O)
UV: [neutral] λ_{max} 214 (ε 18500); 271 (ε 6900); 304 (ε 3200) (MeOH) (Berdy) [acid] λ_{max} 269 (ε 10960); 306 (ε 4470) (pH 4 buffer) (Berdy) [base] λ_{max} 275 (ε 3390); 343 (ε 660) (NAOH) (Berdy)

>>**Derivative:** Hemihydrate

Physical Description: Prisms
Melting Point: Mp 155°

>>**Derivative:** Na salt

Physical Description: Needles + 2 or $3H_2O$
Melting Point: Mp 230 dec.°
Other Data: Trihydrate loses $1H_2O$ at 180°

>>**Derivative:** Me ester

Molecular Formula: $C_{12}H_{12}O_5$
Molecular Weight: 236.224
Accurate Mass: 236.068475
Percentage Composition: C 61.02%; H 5.12%; O 33.86%
Physical Description: Needles (MeOH)
Melting Point: Mp 140°
Solubility: Insol. H_2O

>>**Derivative:** Me ester, 2,4-dinitrophenylhydrazone

Melting Point: Mp 245-250 dec.°

>>**Derivative:** Et ester

Molecular Formula: $C_{13}H_{14}O_5$
Molecular Weight: 250.251
Accurate Mass: 250.084125
Percentage Composition: C 62.39%; H 5.64%; O 31.97%
Physical Description: Needles (EtOH)
Melting Point: Mp 105°

References:

Raistrick, H. *et al.*, *Biochem. J.*, 1952, **50**, 635, *(isol, struct)*
Grove, B.*, Biochem. J.*, 1952, **50**, 648, *(isol, struct)*
Grove, J.F.*, J.C.S.*, 1952, 3345, *(ir)*
Brown, P. *et al.*, *Chem. Ind. (London)*, 1953, 1151, *(struct)*
Brown, J.J. *et al.*, *J.C.S.*, 1954, 1076, *(synth)*