Molecular Formula: $C_7H_{13}O_3P$
Molecular Weight: 176.152
Accurate Mass: 176.060232
Percentage Composition: C 47.73%; H 7.44%; O 27.25%; P 17.58%
Physical Description: Liq.
Boiling Point: $Bp_{0.5}$ 77-85°
Density: d_{25}^{25} 1.04
Refractive Index: n_D^{25} 1.4468

>>**Derivative:** Monoisopropyl ester

>>**Derivative:** Diisopropyl ester
Synonym(s): Diisopropyl methylphosphonate. DIMP

CAS Registry Number: 1445-75-6

Molecular Formula: $C_7H_{17}O_3P$
Molecular Weight: 180.183
Accurate Mass: 180.091532
Percentage Composition: C 46.66%; H 9.51%; O 26.64%; P 17.19%
Use/Importance: Forms complexes with many metal salts
Boiling Point: Bp_3 66°
Refractive Index: $n_D^{16.5}$ 1.4120
Other Data: Nontoxic; nonmutagenic when pure

>>**Derivative:** Dibutyl ester
Synonym(s): Dibutyl methylphosphonate

CAS Registry Number: 2404-73-1

Molecular Formula: $C_9H_{21}O_3P$
Molecular Weight: 208.237
Accurate Mass: 208.122832
Percentage Composition: C 51.91%; H 10.16%; O 23.05%; P 14.87%
Use/Importance: Extractant for metals
Physical Description: Liq.
Boiling Point: Bp_{15} 132-135°. $Bp_{1.5}$ 86-91°
Density: d_4^{20} 0.95
Refractive Index: n_D^{20} 1.4240

>>**Derivative:** Di-*tert*-butyl ester
Synonym(s): Di-*tert*-butyl methylphosphonate

CAS Registry Number: 17123-05-6

Molecular Formula: $C_9H_{21}O_3P$
Molecular Weight: 208.237
Accurate Mass: 208.122832
Percentage Composition: C 51.91%; H 10.16%; O 23.05%; P 14.87%
Physical Description: Oil

>>**Derivative:** Bis(3-methylbutyl) ester

CAS Registry Number: 2452-70-2

Molecular Formula: $C_{11}H_{25}O_3P$
Molecular Weight: 236.29
Accurate Mass: 236.154132
Percentage Composition: C 55.91%; H 10.66%; O 20.31%; P 13.11%
Use/Importance: Used in extractive separation of rare earth elements of the Ce subgroup (xylene) from 0.1-0.2*M* HNO_3
Physical Description: Liq.
Solubility: Sol. xylene