

Dimethyl phosphonate

Other names:	phosphonic acid, dimethyl ester
Inchi:	InChI=1S/C2H7O3P/c1-4-6(3)5-2/h6H,1-2H3
InchiKey:	HZCDANOFILILNSA-UHFFFAOYSA-N
Formula:	C2H6DO3P
SMILES:	CO[PH](=O)OC
Mol. weight [g/mol]:	111.06

Physical Properties

Property code	Value	Unit	Source
log10ws	-1.30		Crippen Method
logp	0.669		Crippen Method
mcvol	77.110	ml/mol	McGowan Method
tb	443.35	K	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
dvisc	0.0008080	Paxs	333.15	Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K
dvisc	0.0008970	Paxs	323.15	Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K

dvisc	0.0010170	Paxs	313.15	Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K
dvisc	0.0011010	Paxs	308.15	Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K
dvisc	0.0011790	Paxs	303.15	Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K
dvisc	0.0012730	Paxs	298.15	Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K
dvisc	0.0013610	Paxs	293.15	Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K
pvap	3.18e-03	kPa	243.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	0.71	kPa	320.10	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds

pvap	0.84	kPa	321.80	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	1.03	kPa	324.70	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	1.29	kPa	328.40	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	2.04	kPa	337.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	2.63	kPa	341.80	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	3.96	kPa	350.80	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	6.40	kPa	361.40	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	13.32	kPa	379.70	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	39.96	kPa	412.40	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	99.93	kPa	443.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds

pvap	4.10	kPa	352.85	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	4.33	kPa	354.05	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	4.87	kPa	356.87	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	4.93	kPa	357.35	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	5.80	kPa	360.85	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	6.70	kPa	364.20	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	7.47	kPa	367.05	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	8.60	kPa	369.95	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	9.39	kPa	372.45	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	10.96	kPa	376.07	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	12.16	kPa	378.85	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	14.01	kPa	382.43	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate

pvap	16.94	kPa	387.65	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	19.85	kPa	391.75	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	23.33	kPa	396.75	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	24.17	kPa	397.55	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	25.46	kPa	398.75	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	29.32	kPa	402.95	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	34.77	kPa	408.05	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	41.60	kPa	413.45	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	46.60	kPa	416.75	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	55.24	kPa	422.46	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	57.79	kPa	423.90	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	65.89	kPa	428.03	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate

pvap	71.50	kPa	430.85	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	79.35	kPa	434.80	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	86.14	kPa	437.05	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	89.11	kPa	438.59	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	93.10	kPa	440.35	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	96.63	kPa	441.85	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	0.53	kPa	316.40	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	0.35	kPa	309.30	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	0.23	kPa	303.30	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	0.10	kPa	283.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	0.05	kPa	273.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds

pvap	0.02	kPa	263.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	7.91e-03	kPa	253.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	101.33	kPa	443.35	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate

Sources

Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphite and Organophosphorus Nerve Agent Simulant Compounds:	https://www.doi.org/10.1007/s10765-011-0989-8
Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate:	https://www.doi.org/10.1021/je8010024
McGowan Method:	https://www.doi.org/10.1021/je900258f
NIST Webbook:	http://link.springer.com/article/10.1007/BF02311772
Crippen Method:	http://webbook.nist.gov/cgi/cbook.cgi?ID=B6009149&Units=SI
	http://pubs.acs.org/doi/abs/10.1021/ci990307I

Legend

dvisc:	Dynamic viscosity
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pvap:	Vapor pressure
tb:	Normal Boiling Point Temperature

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