Dimethyl methylphosphonate

Other names:	DMMP
	Dimethoxymethylphosphine oxide
	Dimethyl ester of methylphosphonic acid
	Furan TF 2000
	Fyrol DMMP
	Metaran
	Methanephosphonic acid, dimethyl ester
	Methyl phosphonic acid, dimethyl ester
	NCI-C54762
	NSC 62240
	O,O-Dimethyl methylphosphonate
	Phosphonic acid, P-methyl-, dimethyl ester
	Phosphonic acid, methyl-, dimethyl ester
	Pyrol DMMP
	dimethyl methanephosphonate
Inchi:	InChI=1S/C3H9O3P/c1-5-7(3,4)6-2/h1-3H3
InchiKey:	VONWDASPFIQPDY-UHFFFAOYSA-N
Formula:	C3H9O3P
SMILES:	COP(C)(=O)OC
Mol. weight [g/mol]:	124.08
CAS:	756-79-6

Physical Properties

Property code	Value	Unit	Source
hvap	52.80	kJ/mol	NIST Webbook
ie	10.00	eV	NIST Webbook
ie	10.00	eV	NIST Webbook
ie	10.71	eV	NIST Webbook
log10ws	-1.53		Crippen Method
logp	1.102		Crippen Method
mcvol	91.200	ml/mol	McGowan Method
rinpol	881.00		NIST Webbook
rinpol	839.00		NIST Webbook
rinpol	840.00		NIST Webbook
rinpol	839.00		NIST Webbook
rinpol	880.90		NIST Webbook
rinpol	915.00		NIST Webbook

rinpol	868.00		NIST Webbook
rinpol	876.00		NIST Webbook
rinpol	881.00		NIST Webbook
rinpol	880.90		NIST Webbook
ripol	1493.00		NIST Webbook
ripol	1501.00		NIST Webbook
ripol	1493.60		NIST Webbook
tb	453.45	K	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
dvisc	0.0008830	Pa×s	333.15	Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K
dvisc	0.0015870	Pa×s	298.15	Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K
dvisc	0.0014470	Pa×s	303.15	Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K

dvisc	0.0013230	Pa×s	308.15	Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K
dvisc	0.0012140	Pa×s	313.15	Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K
dvisc	0.0010310	Pa×s	323.15	Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K
dvisc	0.0017420	Pa×s	293.15	Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K
hvapt	54.90	kJ/mol	356.00	NIST Webbook
hvapt	51.80	kJ/mol	356.00	NIST Webbook
hvapt	50.60	kJ/mol	356.00	NIST Webbook
hvapt	49.50	kJ/mol	356.00	NIST Webbook
hvapt	64.00	kJ/mol	372.00	NIST Webbook
pvap	13.35	kPa	389.80	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	5.67e-03	kPa	263.40	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds

pvap	0.02	kPa	273.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	0.02	kPa	278.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	0.04	kPa	283.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	0.04	kPa	285.00	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	0.05	kPa	288.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	0.08	kPa	293.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	0.65	kPa	326.40	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	0.80	kPa	330.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	0.93	kPa	332.40	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	1.07	kPa	335.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds

pvap	1.20	kPa	337.60	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	1.39	kPa	339.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	1.97	kPa	345.80	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	3.35	kPa	356.80	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	8.00	kPa	376.80	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	3.73e-03	kPa	258.20	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	21.28	kPa	402.00	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	39.93	kPa	421.80	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	102.20	kPa	454.40	Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds
pvap	2.73	kPa	358.17	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate

pvap	3.51	kPa	362.65	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	4.75	kPa	368.35	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	6.34	kPa	373.95	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	8.76	kPa	380.75	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	10.96	kPa	385.95	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	13.41	kPa	390.25	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	14.93	kPa	393.15	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	18.07	kPa	397.45	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	20.76	kPa	401.25	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	23.13	kPa	403.85	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	28.76	kPa	409.65	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	31.41	kPa	412.45	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate

pvap	35.86	kPa	416.27	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	39.84	kPa	419.60	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	44.26	kPa	423.25	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	50.30	kPa	427.05	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	58.21	kPa	431.95	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	63.24	kPa	434.65	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	68.40	kPa	437.75	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	77.79	kPa	442.25	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	84.92	kPa	446.25	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	91.51	kPa	448.65	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	96.47	kPa	450.85	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate
pvap	101.32	kPa	453.45	Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate

Sources

Vapor Pressure of Dimethyl Phosphite and Dimethyl Methylphosphonate:	https://www.doi.org/10.1021/je900258f
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C756796&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Ambient Volatility of DMMP:	https://www.doi.org/10.1007/s10765-006-0044-3
Densities and Viscosities of Binary Mixtures of Methanol with Dimethyl Methylphosphonate and Dimethyl Phosphite from (293.15 to 333.15) K:	https://www.doi.org/10.1007/s10765-011-0989-8
Vapor Pressure of Organophosphorus Nerve Agent Simulant Compounds:	https://www.doi.org/10.1021/je8010024

Legend

dvisc:	Dynamic viscosity
hvap:	Enthalpy of vaporization at standard conditions
hvapt:	Enthalpy of vaporization at a given temperature
ie:	Ionization energy
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pvap:	Vapor pressure
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
tb:	Normal Boiling Point Temperature

Latest version available from:

https://www.chemeo.com/cid/17-340-5/Dimethyl-methylphosphonate.pdf

Generated by Cheméo on 2024-10-12 08:53:41.564373784 +0000 UTC m=+3304084.201343047.

Cheméo (https://www.chemeo.com) is the biggest free database of chemical and physical data for the process industry.