

Dodecanoic acid, 1-methylethyl ester

Other names:	Dodecanoic acid methylethyl ester Isopropyl dodecanoate Isopropyl laurate
Inchi:	InChI=1S/C15H30O2/c1-4-5-6-7-8-9-10-11-12-13-15(16)17-14(2)3/h14H,4-13H2,1-3H3
InchiKey:	UJPPXNXOEVDSRW-UHFFFAOYSA-N
Formula:	C15H30O2
SMILES:	CCCCCCCCCCCC(=O)OC(C)C
Mol. weight [g/mol]:	242.40
CAS:	10233-13-3

Physical Properties

Property code	Value	Unit	Source
gf	-160.94	kJ/mol	Joback Method
hf	-603.01	kJ/mol	Joback Method
hfus	33.87	kJ/mol	Joback Method
hvap	57.75	kJ/mol	Joback Method
log10ws	-5.08		Crippen Method
logp	4.859		Crippen Method
mcvol	229.650	ml/mol	McGowan Method
pc	1474.75	kPa	Joback Method
rinpol	1626.00		NIST Webbook
rinpol	1618.00		NIST Webbook
rinpol	1627.00		NIST Webbook
rinpol	1615.00		NIST Webbook
rinpol	1616.00		NIST Webbook
rinpol	1614.00		NIST Webbook
rinpol	1614.00		NIST Webbook
rinpol	1629.00		NIST Webbook
rinpol	1617.00		NIST Webbook
rinpol	1627.00		NIST Webbook
rinpol	1615.00		NIST Webbook
rinpol	1617.00		NIST Webbook
rinpol	1618.00		NIST Webbook
rinpol	1614.00		NIST Webbook
ripol	1814.00		NIST Webbook
ripol	1831.00		NIST Webbook
ripol	1845.00		NIST Webbook

ripol	1823.00		NIST Webbook
ripol	1821.00		NIST Webbook
ripol	1822.00		NIST Webbook
ripol	1821.00		NIST Webbook
ripol	1841.00		NIST Webbook
ripol	1832.00		NIST Webbook
tb	618.45	K	Joback Method
tc	788.43	K	Joback Method
tf	315.97	K	Joback Method
vc	0.893	m ³ /kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	702.28	J/molxK	760.10	Joback Method
cpg	716.38	J/molxK	788.43	Joback Method
cpg	621.09	J/molxK	618.45	Joback Method
cpg	638.80	J/molxK	646.78	Joback Method
cpg	655.75	J/molxK	675.11	Joback Method
cpg	671.98	J/molxK	703.44	Joback Method
cpg	687.48	J/molxK	731.77	Joback Method
dvisc	0.0001278	Paxs	618.45	Joback Method
dvisc	0.0001735	Paxs	568.04	Joback Method
dvisc	0.0034492	Paxs	315.97	Joback Method
dvisc	0.0013649	Paxs	366.38	Joback Method
dvisc	0.0006759	Paxs	416.80	Joback Method
dvisc	0.0003895	Paxs	467.21	Joback Method
dvisc	0.0002499	Paxs	517.62	Joback Method
hvapt	66.10	kJ/mol	429.50	NIST Webbook
hvapt	81.50	kJ/mol	378.50	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.56938e+01
Coeff. B	-5.10061e+03

Coeff. C	-9.78450e+01
Temperature range (K), min.	428.92
Temperature range (K), max.	589.12

Sources

Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C10233133&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci9903071

Legend

cpg:	Ideal gas heat capacity
dvisc:	Dynamic viscosity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hvap:	Enthalpy of vaporization at standard conditions
hvapt:	Enthalpy of vaporization at a given temperature
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
pvap:	Vapor pressure
rinpolar:	Non-polar retention indices
ripolar:	Polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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