Heptane, 2,4-dimethyl-

Other names: 2,4-Dimethylheptane
Inchi: InChI=1S/C9H20/c1-5-6-9(4)7-8(2)3/h8-9H,5-7H2,1-4H3
InchiKey: AUKVIBNBLXQNIZ-UHFFFAOYSA-N
Formula: C9H20
SMILES: CCCC(C)CC(C)C
Mol. weight [g/mol]: 128.26
CAS: 2213-23-2

Physical Properties

Property code	Value	Unit	Source
af	0.3900		KDB
ap	351.150	K	KDB
gf	20.02	kJ/mol	Joback Method
hcg	6116.51	kJ/mol	KDB
hcn	5676.391	kJ/mol	KDB
hf	-239.65	kJ/mol	Joback Method
hfus	12.02	kJ/mol	Joback Method
hvap	42.90	kJ/mol	NIST Webbook
log10ws	-3.11		Crippen Method
logp	3.469		Crippen Method
mcvol	137.670	ml/mol	McGowan Method
pc	2340.00	kPa	KDB
rinpol	821.50		NIST Webbook
rinpol	824.00		NIST Webbook
rinpol	821.20		NIST Webbook
rinpol	823.00		NIST Webbook
rinpol	821.20		NIST Webbook
rinpol	822.50		NIST Webbook
rinpol	822.50		NIST Webbook
rinpol	822.10		NIST Webbook
rinpol	816.00		NIST Webbook
rinpol	817.00		NIST Webbook
rinpol	817.00		NIST Webbook
rinpol	818.00		NIST Webbook
rinpol	819.00		NIST Webbook
rinpol	821.50		NIST Webbook
rinpol	823.00		NIST Webbook

rinpol	822.00	NIST Webbook
rinpol	821.00	NIST Webbook
rinpol	820.00	NIST Webbook
rinpol	821.00	NIST Webbook
rinpol	821.00	NIST Webbook
rinpol	821.20	NIST Webbook
rinpol	821.00	NIST Webbook
rinpol	822.00	NIST Webbook
rinpol	822.00	NIST Webbook
rinpol	820.13	NIST Webbook
rinpol	821.00	NIST Webbook
rinpol	821.00	NIST Webbook
rinpol	816.00	NIST Webbook
rinpol	837.00	NIST Webbook
rinpol	826.00	NIST Webbook
rinpol	822.00	NIST Webbook
rinpol	822.20	NIST Webbook
rinpol	823.10	NIST Webbook
rinpol	822.09	NIST Webbook
rinpol	822.21	NIST Webbook
rinpol	820.80	NIST Webbook
rinpol	821.00	NIST Webbook
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rinpol	803.00	NIST Webbook
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rinpol	824.00	NIST Webbook
rinpol	823.00	NIST Webbook
rinpol	826.00	NIST Webbook
rinpol	821.00	NIST Webbook
rinpol	818.00	NIST Webbook
rinpol	821.00	NIST Webbook
rinpol	821.00	NIST Webbook
rinpol	823.00	NIST Webbook
rinpol	837.00	NIST Webbook
rinpol	825.00	NIST Webbook

rinpol	818.00		NIST Webbook
rinpol	822.20		NIST Webbook
rinpol	820.50		NIST Webbook
rinpol	820.50		NIST Webbook
rinpol	823.00		NIST Webbook
rinpol	816.00		NIST Webbook
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rinpol	822.00		NIST Webbook
rinpol	824.00		NIST Webbook
rinpol	823.00		NIST Webbook
rinpol	821.00		NIST Webbook
rinpol	821.00		NIST Webbook
rinpol	821.00		NIST Webbook
rinpol	823.90		NIST Webbook
rinpol	822.00		NIST Webbook
ripol	797.00		NIST Webbook
tb	405.80 ± 0.50	K	NIST Webbook
tb	406.20 ± 2.00	K	NIST Webbook
tb	405.00 ± 4.00	K	NIST Webbook
tb	405.65 ± 1.50	K	NIST Webbook
tb	352.00 ± 4.00	K	NIST Webbook
tb	406.25 ± 0.50	K	NIST Webbook
tb	406.05 ± 0.50	K	NIST Webbook
tb	406.65 ± 0.70	K	NIST Webbook
tb	406.65 ± 0.30	K	NIST Webbook
tb	404.40 ± 1.50	K	NIST Webbook
tb	406.10 ± 0.30	K	NIST Webbook
tb	406.10	K	KDB
tb	404.65 ± 1.00	K	NIST Webbook
tc	576.80	K	KDB
tf	160.00	K	KDB
vc	0.517	m3/kmol	KDB
zc	0.2522580		KDB

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	341.62	J/mol×K	546.48	Joback Method
cpg	353.86	J/mol×K	574.89	Joback Method
cpg	272.52	J/mol×K	404.44	Joback Method
cpg	287.44	J/mol×K	432.85	Joback Method

cpg	301.80	J/mol×K	461.26	Joback Method
cpg	315.61	J/mol×K	489.67	Joback Method
cpg	328.88	J/mol×K	518.07	Joback Method
dvisc	0.0002255	Pa×s	404.44	Joback Method
dvisc	0.0003168	Pa×s	363.90	Joback Method
dvisc	0.0224972	Pa×s	161.19	Joback Method
dvisc	0.0048330	Pa×s	201.73	Joback Method
dvisc	0.0017372	Pa×s	242.27	Joback Method
dvisc	0.0008373	Pa×s	282.81	Joback Method
dvisc	0.0004846	Pa×s	323.36	Joback Method
hvapt	35.35	kJ/mol	406.10	KDB
rfi	1.40110		298.15	KDB

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.41368e+01
Coeff. B	-3.30150e+03
Coeff. C	-5.91970e+01
Temperature range (K), min.	297.59
Temperature range (K), max.	433.29

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	9.87468e+01
Coeff. B	-8.44859e+03
Coeff. C	-1.24266e+01
Coeff. D	7.98931e-06
Temperature range (K), min.	297.15
Temperature range (K), max.	576.80

Sources

Crippen Method: http://pubs.acs.org/doi/abs/10.1021/ci990307l

Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
KDB:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=71
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C2213232&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
KDB Vapor Pressure Data:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=71

Legend

af:	Acentric Factor
ap:	Aniline Point
cpg:	Ideal gas heat capacity
dvisc:	Dynamic viscosity
gf:	Standard Gibbs free energy of formation
hcg:	Heat of Combustion, Gross form
hcn:	Heat of Combustion, Net Form
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
rfi:	Refractive Index
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume
zc:	Critical Compressibility

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