Heptane, 2,5-dimethyl-

Other names: 2,5-Dimethylheptane
Inchi: InChI=1S/C9H20/c1-5-9(4)7-6-8(2)3/h8-9H,5-7H2,1-4H3
InchiKey: HQZHQNKZOYIKQC-UHFFFAOYSA-N
Formula: C9H20
SMILES: CCC(C)CCC(C)C
Mol. weight [g/mol]: 128.26
CAS: 2216-30-0

Physical Properties

Property code	Value	Unit	Source
af	0.3930		KDB
ap	351.150	K	KDB
gf	20.02	kJ/mol	Joback Method
hcg	6116.13	kJ/mol	KDB
hcn	5676.015	kJ/mol	KDB
hf	-239.65	kJ/mol	Joback Method
hfus	12.02	kJ/mol	Joback Method
hvap	43.30	kJ/mol	NIST Webbook
log10ws	-3.11		Crippen Method
logp	3.469		Crippen Method
mcvol	137.670	ml/mol	McGowan Method
pc	2350.00	kPa	KDB
rinpol	836.90		NIST Webbook
rinpol	834.00		NIST Webbook
rinpol	833.70		NIST Webbook
rinpol	832.90		NIST Webbook
rinpol	832.90		NIST Webbook
rinpol	832.80		NIST Webbook
rinpol	827.00		NIST Webbook
rinpol	828.00		NIST Webbook
rinpol	828.00		NIST Webbook
rinpol	829.00		NIST Webbook
rinpol	830.00		NIST Webbook
rinpol	832.90		NIST Webbook
rinpol	834.00		NIST Webbook
rinpol	833.00		NIST Webbook
rinpol	833.00		NIST Webbook

rinpol	834.00	NIST Webbook
rinpol	832.00	NIST Webbook
rinpol	833.00	NIST Webbook
rinpol	834.00	NIST Webbook
rinpol	833.00	NIST Webbook
rinpol	843.30	NIST Webbook
rinpol	833.00	NIST Webbook
rinpol	837.80	NIST Webbook
rinpol	835.50	NIST Webbook
rinpol	827.40	NIST Webbook
rinpol	833.30	NIST Webbook
rinpol	834.63	NIST Webbook
rinpol	834.81	NIST Webbook
rinpol	831.00	NIST Webbook
rinpol	837.00	NIST Webbook
rinpol	833.00	NIST Webbook
rinpol	836.00	NIST Webbook
rinpol	833.00	NIST Webbook
rinpol	836.00	NIST Webbook
rinpol	833.60	NIST Webbook
rinpol	833.00	NIST Webbook
rinpol	847.00	NIST Webbook
rinpol	840.00	NIST Webbook
rinpol	838.00	NIST Webbook
rinpol	839.00	NIST Webbook
rinpol	833.00	NIST Webbook
rinpol	834.00	NIST Webbook
rinpol	836.00	NIST Webbook
rinpol	841.00	NIST Webbook
rinpol	836.00	NIST Webbook
rinpol	837.00	NIST Webbook
rinpol	833.00	NIST Webbook
rinpol	839.00	NIST Webbook
rinpol	830.00	NIST Webbook
rinpol	833.00	NIST Webbook
rinpol	843.30	NIST Webbook
rinpol	836.30	NIST Webbook
rinpol	832.40	NIST Webbook
rinpol	833.70	NIST Webbook
rinpol	828.00	NIST Webbook
rinpol	834.00	NIST Webbook
rinpol	833.00	NIST Webbook
rinpol	839.00	NIST Webbook
rinpol	836.90	NIST Webbook

rinpol	832.40		NIST Webbook
rinpol	831.80		NIST Webbook
rinpol	840.00		NIST Webbook
rinpol	837.00		NIST Webbook
rinpol	834.00		NIST Webbook
rinpol	836.30		NIST Webbook
rinpol	837.00		NIST Webbook
rinpol	836.00		NIST Webbook
tb	409.35 ± 1.00	K	NIST Webbook
tb	406.15 ± 1.00	K	NIST Webbook
tb	407.00 ± 4.00	K	NIST Webbook
tb	409.10 ± 0.30	K	NIST Webbook
tb	409.05 ± 0.70	K	NIST Webbook
tb	408.90 ± 0.40	K	NIST Webbook
tb	408.90 ± 0.30	K	NIST Webbook
tb	409.20	K	KDB
tb	407.15 ± 1.00	K	NIST Webbook
tb	407.65 ± 1.50	K	NIST Webbook
tc	581.10	K	KDB
tf	160.00	K	KDB
vc	0.522	m3/kmol	KDB
zc	0.2538930		KDB

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
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
cpg	341.62	J/mol×K	546.48	Joback Method
cpg	353.86	J/mol×K	574.89	Joback Method
dvisc	0.0048330	Pa×s	201.73	Joback Method
dvisc	0.0224972	Pa×s	161.19	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
dvisc	0.0003168	Pa×s	363.90	Joback Method
dvisc	0.0002255	Pa×s	404.44	Joback Method
hvapt	35.61	kJ/mol	409.20	KDB

rfi	1.40150	298.15	KDB

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.41840e+01
Coeff. B	-3.35891e+03
Coeff. C	-5.80160e+01
Temperature range (K), min.	299.73
Temperature range (K), max.	436.59

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	9.92161e+01
Coeff. B	-8.50891e+03
Coeff. C	-1.24963e+01
Coeff. D	8.07890e-06
Temperature range (K), min.	300.15
Temperature range (K), max.	581.10

Sources

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=72
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=72
McGowan Method: http://link.springer.com/article/10.1007/BF02311772
NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C2216300&Units=SI

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
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume
zc:	Critical Compressibility