2-Decene, (E)-

Other names: (E)-2-C10H20
(E)-2-Decene
trans-2-Decene
Inchi: InChI=1S/C10H20/c1-3-5-7-9-10-8-6-4-2/h3,5H,4,6-10H2,1-2H3/b5-3+
InchiKey: YKNMBTZOEVIJCM-HWKANZROSA-N
Formula: C10H20
SMILES: CC=CCCCCCCC
Mol. weight [g/mol]: 140.27
CAS: 20063-97-2

Physical Properties

Property code	Value	Unit	Source
gf	113.54	kJ/mol	Joback Method
hf	-132.51	kJ/mol	Joback Method
hfus	21.86	kJ/mol	Joback Method
hvap	37.81	kJ/mol	Joback Method
ie	8.90 ± 0.01	eV	NIST Webbook
ie	9.06 ± 0.01	eV	NIST Webbook
log10ws	-3.86		Crippen Method
logp	3.923		Crippen Method
mcvol	147.460	ml/mol	McGowan Method
pc	2212.45	kPa	Joback Method
rinpol	1009.00		NIST Webbook
rinpol	997.00		NIST Webbook
rinpol	1003.00		NIST Webbook
rinpol	1002.90		NIST Webbook
rinpol	1003.10		NIST Webbook
rinpol	996.60		NIST Webbook
rinpol	996.70		NIST Webbook
rinpol	991.00		NIST Webbook
rinpol	1005.00		NIST Webbook
rinpol	1002.00		NIST Webbook
rinpol	1003.00		NIST Webbook
rinpol	997.00		NIST Webbook
rinpol	990.00		NIST Webbook
rinpol	1002.00		NIST Webbook
rinpol	997.00		NIST Webbook

rinpol	1002.00		NIST Webbook
rinpol	997.00		NIST Webbook
rinpol	1002.00		NIST Webbook
rinpol	1003.00		NIST Webbook
rinpol	990.00		NIST Webbook
rinpol	1004.00		NIST Webbook
rinpol	997.00		NIST Webbook
rinpol	997.00		NIST Webbook
rinpol	1002.00		NIST Webbook
ripol	1066.00		NIST Webbook
ripol	1065.00		NIST Webbook
ripol	1062.00		NIST Webbook
ripol	1066.00		NIST Webbook
ripol	1062.00		NIST Webbook
ripol	1064.00		NIST Webbook
ripol	1061.00		NIST Webbook
ripol	1061.00		NIST Webbook
ripol	1060.00		NIST Webbook
ripol	1065.30		NIST Webbook
ripol	1066.30		NIST Webbook
ripol	1062.00		NIST Webbook
ripol	1064.10		NIST Webbook
ripol	1065.30		NIST Webbook
ripol	1066.30		NIST Webbook
ripol	1062.00		NIST Webbook
ripol	1064.10		NIST Webbook
ripol	1064.10		NIST Webbook
ripol	1065.00		NIST Webbook
ripol	1061.00		NIST Webbook
ripol	1062.00		NIST Webbook
tb	432.36	K	Joback Method
tc	602.58	K	Joback Method
tf	197.38	K	Joback Method
vc	0.576	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	300.30	J/mol×K	432.36	Joback Method
cpg	315.26	J/mol×K	460.73	Joback Method
cpg	329.59	J/mol×K	489.10	Joback Method

cpg	343.32	J/mol×K	517.47	Joback Method
cpg	356.46	J/mol×K	545.84	Joback Method
cpg	369.04	J/mol×K	574.21	Joback Method
cpg	381.07	J/mol×K	602.58	Joback Method
dvisc	0.0057907	Pa×s	197.38	Joback Method
dvisc	0.0020667	Pa×s	236.54	Joback Method
dvisc	0.0009884	Pa×s	275.71	Joback Method
dvisc	0.0005679	Pa×s	314.87	Joback Method
dvisc	0.0003689	Pa×s	354.03	Joback Method
dvisc	0.0002611	Pa×s	393.20	Joback Method
dvisc	0.0001968	Pa×s	432.36	Joback Method
hvapt	43.70	kJ/mol	424.00	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.74478e+01
Coeff. B	-4.76701e+03
Coeff. C	-6.84040e+01
Temperature range (K), min.	346.20
Temperature range (K), max.	461.20

Sources

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C20063972&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/ci990307l

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

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
ie:	Ionization energy
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
pvap:	Vapor pressure
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