trans-4-Decene

Other names:	4-Decene, (E)-
	(4E)-4-Decene
	(E)-4-C10H20
	t-4-Decene
	(E)-4-Decene
	(E)-dec-4-ene
Inchi:	InChI=1S/C10H20/c1-3-5-7-9-10-8-6-4-2/h7,9H,3-6,8,10H2,1-2H3/b9-7+
InchiKey:	SOVOPSCRHKEUNJ-VQHVLOKHSA-N
Formula:	C10H20
SMILES:	CCCC=CCCCCC
Mol. weight [g/mol]:	140.27
CAS:	19398-89-1

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	8.78 ± 0.00	eV	NIST Webbook
ie	8.97 ± 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	982.00		NIST Webbook
rinpol	982.00		NIST Webbook
rinpol	992.00		NIST Webbook
rinpol	982.70		NIST Webbook
rinpol	985.70		NIST Webbook
rinpol	985.00		NIST Webbook
rinpol	992.00		NIST Webbook
rinpol	982.00		NIST Webbook
rinpol	982.00		NIST Webbook
rinpol	982.00		NIST Webbook
rinpol	992.00		NIST Webbook
rinpol	991.00		NIST Webbook

rinpol	990.00		NIST Webbook
rinpol	991.00		NIST Webbook
rinpol	993.90		NIST Webbook
rinpol	992.00		NIST Webbook
rinpol	991.00		NIST Webbook
rinpol	982.20		NIST Webbook
rinpol	991.00		NIST Webbook
rinpol	983.00		NIST Webbook
ripol	1037.30		NIST Webbook
ripol	1038.80		NIST Webbook
ripol	1035.00		NIST Webbook
ripol	1038.80		NIST Webbook
ripol	1039.00		NIST Webbook
ripol	1037.30		NIST Webbook
ripol	1040.30		NIST Webbook
ripol	1038.80		NIST Webbook
ripol	1037.30		NIST Webbook
ripol	1039.20		NIST Webbook
ripol	1035.00		NIST Webbook
ripol	1036.00		NIST Webbook
ripol	1035.00		NIST Webbook
ripol	1039.00		NIST Webbook
ripol	1037.00		NIST Webbook
ripol	1040.00		NIST Webbook
ripol	1040.00		NIST Webbook
ripol	1039.20		NIST Webbook
ripol	1040.30		NIST Webbook
ripol	1039.00		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	381.07	J/mol×K	602.58	Joback Method
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
dvisc	0.0001968	Pa×s	432.36	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
hvapt	43.20	kJ/mol	421.00	NIST Webbook

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=C19398891&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l

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
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

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