2,5-Norbornadiene

Other names:	3,6-Methano-1,4-cyclohexadiene
	8,9,10-trinorborna-2,5-diene
	Bicyclo[2.2.1]-2,5-heptadiene
	Bicyclo[2.2.1]hepta-2,5-diene
	Bicyclo[2.2.1]heptadiene
	Dicycloheptadiene
	NSC 13672
	Norbornadiene
Inchi:	InChI=1S/C7H8/c1-2-7-4-3-6(1)5-7/h1-4,6-7H,5H2
InchiKey:	SJYNFBVQFBRSIB-UHFFFAOYSA-N
Formula:	C7H8
SMILES:	C1=CC2C=CC1C2
Mol. weight [g/mol]:	92.14
CAS:	121-46-0

Physical Properties

Property code	Value	Unit	Source
affp	849.30	kJ/mol	NIST Webbook
basg	820.30	kJ/mol	NIST Webbook
chl	-4076.70 ± 1.00	kJ/mol	NIST Webbook
chl	-4099.00	kJ/mol	NIST Webbook
chl	-4111.70 ± 3.00	kJ/mol	NIST Webbook
gf	177.38	kJ/mol	Joback Method
hf	67.19	kJ/mol	Joback Method
hfl	178.70 ± 1.00	kJ/mol	NIST Webbook
hfl	213.80 ± 3.00	kJ/mol	NIST Webbook
hfus	10.50	kJ/mol	Joback Method
hvap	31.76	kJ/mol	Joback Method
ie	8.69	eV	NIST Webbook
ie	8.73	eV	NIST Webbook
ie	8.73	eV	NIST Webbook
ie	8.70	eV	NIST Webbook
ie	8.69	eV	NIST Webbook
ie	8.60	eV	NIST Webbook
ie	8.69	eV	NIST Webbook
ie	8.70	eV	NIST Webbook
ie	8.69	eV	NIST Webbook

ie	8.42 ± 0.02	eV	NIST Webbook
ie	8.42	eV	NIST Webbook
ie	8.35	eV	NIST Webbook
ie	8.35	eV	NIST Webbook
ie	8.40	eV	NIST Webbook
ie	8.38 ± 0.04	eV	NIST Webbook
log10ws	-1.77		Crippen Method
logp	1.748		Crippen Method
mcvol	79.170	ml/mol	McGowan Method
pc	4255.16	kPa	Joback Method
rinpol	722.80		NIST Webbook
rinpol	711.00		NIST Webbook
rinpol	707.00		NIST Webbook
rinpol	681.20		NIST Webbook
rinpol	678.00		NIST Webbook
rinpol	683.00		NIST Webbook
rinpol	687.00		NIST Webbook
rinpol	691.00		NIST Webbook
rinpol	698.00		NIST Webbook
rinpol	706.00		NIST Webbook
rinpol	708.00		NIST Webbook
rinpol	686.00		NIST Webbook
rinpol	686.00		NIST Webbook
rinpol	708.00		NIST Webbook
rinpol	711.00		NIST Webbook
rinpol	712.00		NIST Webbook
rinpol	707.00		NIST Webbook
rinpol	691.10		NIST Webbook
rinpol	686.30		NIST Webbook
rinpol	718.30		NIST Webbook
tb	355.40 ± 0.80	K	NIST Webbook
tb	363.40	K	NIST Webbook
tb	362.70	K	NIST Webbook
tc	582.98	K	Joback Method
tf	254.00	K	NIST Webbook
tf	205.15 ± 1.00	K	NIST Webbook
vc	0.305	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source

cpg	136.22	J/mol×K	375.63	Joback Method
cpg	149.85	J/mol×K	410.19	Joback Method
cpg	162.48	J/mol×K	444.75	Joback Method
cpg	174.16	J/mol×K	479.30	Joback Method
cpg	184.97	J/mol×K	513.86	Joback Method
cpg	194.97	J/mol×K	548.42	Joback Method
cpg	204.21	J/mol×K	582.98	Joback Method
cpl	116.10	J/mol×K	297.00	NIST Webbook
cpl	161.20	J/mol×K	298.15	NIST Webbook
dvisc	0.0003417	Pa×s	202.53	Joback Method
dvisc	0.0003503	Pa×s	231.38	Joback Method
dvisc	0.0003571	Pa×s	260.23	Joback Method
dvisc	0.0003627	Pa×s	289.08	Joback Method
dvisc	0.0003673	Pa×s	317.93	Joback Method
dvisc	0.0003712	Pa×s	346.78	Joback Method
dvisc	0.0003745	Pa×s	375.63	Joback Method
hfust	1.91	kJ/mol	255.60	NIST Webbook
hvapt	33.60	kJ/mol	332.00	NIST Webbook
tcondl	0.13	W/m×K	331.91	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons
tcondl	0.13	W/m×K	313.46	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons
tcondl	0.13	W/m×K	313.38	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons

tcondl	0.13	W/m×K	313.27	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons	
tcondl	0.14	W/m×K	296.43	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons	
tcondl	0.14	W/m×K	296.35	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons	
tcondl	0.14	W/m×K	296.23	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons	
tcondl	0.14	W/m×K	276.97	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons	

tcondl	0.14	W/m×K	276.89	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons
tcondl	0.14	W/m×K	276.78	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons
tcondl	0.15	W/m×K	258.80	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons
tcondl	0.15	W/m×K	258.70	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons
tcondl	0.15	W/m×K	258.57	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons

tcondl	0.13	W/m×K	331.81	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons
tcondl	0.13	W/m×K	331.98	Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.47410e+01
Coeff. B	-3.37634e+03
Coeff. C	-2.91070e+01
Temperature range (K), min.	258.15
Temperature range (K), max.	387.17

Sources

McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C121460&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
Thermal Conductivity and Thermal Diffusivity of Twenty-Nine Liquids: Alkenes, Cyclic (Alkanes, Alkenes, Alkadienes, Aromatics), and Deuterated Hydrocarbons:	https://www.doi.org/10.1021/je034162x
Joback Method:	https://en.wikipedia.org/wiki/Joback_method

Legend

affp:	Proton affinity
basg:	Gas basicity
chl:	Standard liquid enthalpy of combustion
cpg:	Ideal gas heat capacity
cpl:	Liquid phase heat capacity
dvisc:	Dynamic viscosity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfl:	Liquid phase enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hfust:	Enthalpy of fusion at a given temperature
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
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tcondl:	Liquid thermal conductivity
tf:	Normal melting (fusion) point
vc:	Critical Volume