trans-4,5-Epoxy-(E)-2-decenal

Other names:	4,5-epoxy-(E)-2-decenal
	(E)-4,5-Epoxy-(E)-2-decenal
	trans-4,5-Epoxy-2(E)-decenal
	(E)-2-Decenal, 4,5-epoxy
	tr-4,5-Epoxy-(E)-dec-2-enal
	trans-4,5-epoxy-(E)-dec-2-enal
	(E)-4,5-epoxydec-2-enal
	trans-4,5-epoxy-(E)-2-decanal
	trans-(E)-2-Decenal, 4,5-epoxy
	tr-4,5-Epoxy-(E)-2-decenal
	trans-4,5-epoxy-(E)-2-decenale
	4,5-epoxy-(E)-dec-2-enal
	2-Decenal, (E)-, 4,5-(E)-epoxy-
Inchi:	InChI=1S/C10H16O2/c1-2-3-4-6-9-10(12-9)7-5-8-11/h5,7-10H,2-4,6H2,1H3/b7-5+/t9-,10-
InchiKey:	HIOMEXREAUSUBP-IUUOVRRDSA-N
Formula:	C10H16O2
SMILES:	CCCCCC1OC1C=CC=O
Mol. weight [g/mol]:	168.23
CAS:	134454-31-2

Physical Properties

Property code	Value	Unit	Source
gf	-19.06	kJ/mol	Joback Method
hf	-297.63	kJ/mol	Joback Method
hfus	31.33	kJ/mol	Joback Method
hvap	48.65	kJ/mol	Joback Method
log10ws	-2.35		Crippen Method
logp	2.089		Crippen Method
mcvol	144.040	ml/mol	McGowan Method
pc	2592.49	kPa	Joback Method
rinpol	1390.00		NIST Webbook
rinpol	1385.00		NIST Webbook
rinpol	1385.00		NIST Webbook
rinpol	1382.00		NIST Webbook
rinpol	1378.00		NIST Webbook
rinpol	1375.00		NIST Webbook
rinpol	1383.00		NIST Webbook

rinpol	1379.00	NIST Webbook
rinpol	1380.00	NIST Webbook
rinpol	1392.00	NIST Webbook
rinpol	1374.00	NIST Webbook
rinpol	1389.00	NIST Webbook
rinpol	1379.00	NIST Webbook
rinpol	1380.00	NIST Webbook
rinpol	1381.00	NIST Webbook
rinpol	1381.00	NIST Webbook
rinpol	1378.00	NIST Webbook
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ripol	2006.00	NIST Webbook
ripol	2017.00	NIST Webbook
ripol	2021.00	NIST Webbook
ripol	2010.00	NIST Webbook
ripol	1989.00	NIST Webbook
ripol	2009.00	NIST Webbook
ripol	2010.00	NIST Webbook
ripol	2017.00	NIST Webbook
ripol	1997.00	NIST Webbook
ripol	2012.00	NIST Webbook
ripol	2000.00	NIST Webbook
ripol	2015.00	NIST Webbook
ripol	1986.00	NIST Webbook
ripol	2006.00	NIST Webbook
ripol	2006.00	NIST Webbook
ripol	2000.00	NIST Webbook
ripol	2006.00	NIST Webbook
ripol	2006.00	NIST Webbook
ripol	2020.00	NIST Webbook
ripol	2006.00	NIST Webbook
ripol	2018.00	NIST Webbook
ripol	1979.00	NIST Webbook
ripol	1978.00	NIST Webbook
ripol	2007.00	NIST Webbook

ripol	2025.00	NIST Webbook
ripol	2000.00	NIST Webbook
ripol	1995.00	NIST Webbook
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ripol	2000.00	NIST Webbook
ripol	1989.00	NIST Webbook
ripol	1988.00	NIST Webbook
ripol	2000.00	NIST Webbook
ripol	1971.00	NIST Webbook
ripol	2006.00	NIST Webbook
ripol	1986.00	NIST Webbook
ripol	1990.00	NIST Webbook
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ripol	1988.00	NIST Webbook
ripol	2020.00	NIST Webbook
ripol	2017.00	NIST Webbook
ripol	1994.00	NIST Webbook
ripol	1986.00	NIST Webbook
ripol	2006.00	NIST Webbook
ripol	1978.00	NIST Webbook
ripol	1995.00	NIST Webbook
ripol	2000.00	NIST Webbook
ripol	1987.00	NIST Webbook
ripol	2015.00	NIST Webbook

ripol	2021.00		NIST Webbook
tb	510.04	K	Joback Method
tc	698.84	K	Joback Method
tf	279.65	K	Joback Method
vc	0.570	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	343.67	J/mol×K	510.04	Joback Method
cpg	358.21	J/mol×K	541.51	Joback Method
cpg	371.96	J/mol×K	572.97	Joback Method
cpg	384.96	J/mol×K	604.44	Joback Method
cpg	397.26	J/mol×K	635.91	Joback Method
cpg	408.89	J/mol×K	667.37	Joback Method
cpg	419.89	J/mol×K	698.84	Joback Method
dvisc	0.0022936	Pa×s	279.65	Joback Method
dvisc	0.0015657	Pa×s	318.05	Joback Method
dvisc	0.0011605	Pa×s	356.45	Joback Method
dvisc	0.0009117	Pa×s	394.84	Joback Method
dvisc	0.0007476	Pa×s	433.24	Joback Method
dvisc	0.0006332	Pa×s	471.64	Joback Method
dvisc	0.0005498	Pa×s	510.04	Joback Method

Sources

McGowan Method: http://link.springer.com/article/10.1007/BF02311772
NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C134454312&Units=SI
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

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
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