Naproxen

Other names:

(+)-2-(6-Methoxy-2-naphthyl)propionic acid
(+)-2-(Methoxy-2-naphthyl)-propionic acid
(+)-2-(Methoxy-2-naphthyl)-propionsaeure
(+)-6-Methoxy-«alpha»-methyl-2-naphthaleneacetic acid
(+)-6-Methoxy-«alpha»-methyl-2-napthaleneacetic acid
(+)-6-Methoxy-Â«alphaÂ»-methyl-2-naphthaleneacetic acid
(+)-6-Methoxy-Â«alphaÂ»-methyl-2-napthaleneacetic acid
(+)-6-methoxy-.alpha.-methyl-2-naphthaleneacetic acid
(+)-Naproxen
(S)-(+)-Naproxen
(S)-2-(6-Methoxy-2-naphthyl)propionic acid
(S)-6-Methoxy-«alpha»-methyl-2-naphthalene acetic acid
(S)-6-Methoxy-Â«alphaÂ»-methyl-2-naphthalene acetic acid
(S)-6-methoxy-.alpha.-methyl-2-naphthaleneacetic acid
(S)-Naproxen
2-(6-Methoxy-2-naphthyl)propanoic acid , (+)-
2-Naphthaleneacetic acid, 6-methoxy-«alpha»-methyl-, (+)-
2-Naphthaleneacetic acid, 6-methoxy-«alpha»-methyl-, (S)-
2-Naphthaleneacetic acid, 6-methoxy-Â«alphaÂ»-methyl-, (+)-
2-Naphthaleneacetic acid, 6-methoxy-Â«alphaÂ»-methyl-, (S)-
6-Methoxy-«alpha»-methyl-2-naphthaleneacetic acid (naproxen)
6-Methoxy-Â«alphaÂ»-methyl-2-naphthaleneacetic acid (naproxen)
Apo-Naproxen
Bonyl
CG 3117
Diocodal
Dysmenalgit
Equiproxen
Floginax
Laraflex
Laser
MNPA
Naixan
Napren
Naprium
Naprius
Naprosine
Naprosyn
Naprosyne
Naprux

	Naxen
	Naxyn
	Nycopren
	Panoxen
	Prexan
	Propionic acid, 2-(6-methoxy-2-naphthyl)-, (+)-
	Proxen
	Proxine
	RS-3540
	Reuxen
	Veradol
	Xenar
	d-2-(6'-Methoxy-2'-naphthyl)-propionsaeure
	d-2-(6-Methoxy-2-naphthyl)propionic acid
	d-Naproxen
Inchi:	InChI=1S/C14H14O3/c1-9(14(15)16)10-3-4-12-8-13(17-2)6-5-11(12)7-10/h3-9H,1-2H3,(H
InchiKey:	CMWTZPSULFXXJA-SECBINFHSA-N
Formula:	C14H14O3
SMILES:	COc1ccc2cc(C(C)C(=O)O)ccc2c1
Mol. weight [g/mol]:	230.26
CAS:	22204-53-1

Physical Properties

Property code	Value	Unit	Source
gf	-106.38	kJ/mol	Joback Method
hf	-329.94	kJ/mol	Joback Method
hfus	29.00	kJ/mol	Study of Glass Transition Phenomena in the Supercooled Liquid Phase of Methocarbamol, Acetaminophen and Mephensin
hfus	31.40	kJ/mol	Experimental and Theoretical Investigation of the Phase Behavior of Naproxen in Supercritical CO2
hvap	77.44	kJ/mol	Joback Method
log10ws	-4.50		Aqueous Solubility Prediction Method
logp	3.036		Crippen Method
mcvol	178.210	ml/mol	McGowan Method
pc	2859.68	kPa	Joback Method

rinpol	2032.00		NIST Webbook
rinpol	2032.00		NIST Webbook
rinpol	2053.00		NIST Webbook
tb	743.37	K	Joback Method
tc	958.25	K	Joback Method
tf	430.65	K	Solubility of Anti-Inflammatory, Anti-Cancer, and Anti-HIV Drugs in Supercritical Carbon Dioxide
tf	428.00	K	Solubility of (+)-(S)-2-(6-Methoxynaphthalen-2-yl) Propanoic Acid in Acetone, Methanol, Ethanol, Propan-2-ol, and Ethyl Ethanoate at Temperatures between (278 and 320) K
vc	0.670	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	507.48	J/mol×K	815.00	Joback Method
cpg	544.11	J/mol×K	958.25	Joback Method
cpg	535.91	J/mol×K	922.44	Joback Method
cpg	527.11	J/mol×K	886.62	Joback Method
cpg	517.65	J/mol×K	850.81	Joback Method
cpg	484.88	J/mol×K	743.37	Joback Method
cpg	496.58	J/mol×K	779.18	Joback Method
dvisc	0.0005122	Pa×s	498.63	Joback Method
dvisc	0.0002791	Pa×s	547.58	Joback Method
dvisc	0.0001680	Pa×s	596.52	Joback Method
dvisc	0.0001092	Pa×s	645.47	Joback Method
dvisc	0.0000754	Pa×s	694.42	Joback Method
dvisc	0.0010731	Pa×s	449.68	Joback Method
dvisc	0.0000547	Pa×s	743.37	Joback Method
hfust	29.41	kJ/mol	439.20	NIST Webbook
hfust	31.50	kJ/mol	428.50	NIST Webbook
hfust	31.50	kJ/mol	428.50	NIST Webbook
hfust	34.20	kJ/mol	428.80	NIST Webbook
hsubt	128.30 ± 0.50	kJ/mol	369.00	NIST Webbook

Sources

Solubility of (+)-(S)-2-(6-Methoxynaphthalen-2-yl) Propanoic Acid in Acetone, Methanol, Ethanol, Propan-2-ol, and Ethyl Acetate at Temperatures between 283.15 and 320.15 K:	https://www.doi.org/10.1021/je8008039
Solubilities of the Drugs Benzocaine, Metronidazole Benzoate, and Naproxen in Propan-2-ol and Ethyl Acetate at Temperatures between 283.15 and 320.15 K:	https://www.doi.org/10.1021/je020218w
Solubility of naproxen in ethyl acetate + ethanol mixtures at several temperatures and correlation with the Jouyban-Acree model:	https://www.doi.org/10.1016/j.fluid.2012.02.009
Joback Method:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C22204531&Units=SI
Thermodynamic study of the solubility of ibuprofen and naproxen in some ethanol + propylene glycol mixtures:	https://en.wikipedia.org/wiki/Joback_method
Solubilities of Organic Semiconductors and Nonsteroidal Anti-inflammatory Drugs in Pure and Mixed Organic Solvents: Measurement and Modeling with Hansen Solubility Parameter:	https://www.doi.org/10.1016/j.fluid.2007.07.076
Study of Glass Transition Phenomena in the Supercooled Liquid Phase of Naproxen Using Several Models:	https://www.doi.org/10.1021/acs.jced.8b00536
Solubility of naproxen in several organic solvents at different temperatures:	https://www.doi.org/10.1016/j.tca.2013.10.035
McGowan Method:	https://www.doi.org/10.1016/j.fluid.2007.03.029
Solubility of Anti-Inflammatory, Anti-Cancer, and Anti-HIV Drugs in Supercritical Carbon Dioxide:	http://link.springer.com/article/10.1007/BF02311772
High-pressure solubility of naproxen, nicotinamide and their mixture in acetone with supercritical CO2 as an anti-solvent:	https://www.doi.org/10.1021/je049551l
Crippen Method:	https://www.doi.org/10.1016/j.fluid.2014.03.029
The determination and correlation of the solubility of naproxen in acetone and water mixtures:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Aqueous Solubility Prediction Method:	https://www.doi.org/10.1016/j.fluid.2014.02.034
Experimental and Theoretical Investigation of the Phase Behavior of Naproxen in Supercritical CO2:	http://onschallenge.wikispaces.com/file/view/AqueousDataset002.xlsx/351826032/AqueousDa
	https://www.doi.org/10.1021/je800920d

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
hfust:	Enthalpy of fusion at a given temperature
hsubt:	Enthalpy of sublimation at a given temperature
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
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume