Benzoyl Peroxide

Other names:

Abcure S-40-25
Acne-Aid Cream
Acnegel
Akneroxid 5
Akneroxid L
Akneroxide L
Asidopan
Aztec BPO
BPO
BZF-60
Benzac
Benzac W
Benzagel 10
Benzaknen
Benzaknew
Benzoic acid, peroxide
Benzol peroxide
Benzoyl peroxyde
Benzoylperoxid
Brevoxyl
Cadet
Cadet BPO 78W
Cadox
Cadox 40E
Cadox B
Cadox BS
Clear By Design
Clearasil BP acne treatment
Clearasil benzoyl peroxide lotion
Cuticura acne cream
Debroxide
Dermoxyl
Desanden
Desquam E
Dibenzoylperoxid
Dibenzoylperoxyde
Diphenylglyoxal peroxide
Dry and Clear
Duresthin 5
Eloxyl

Epi-Clear
Fostex
G20
Garox
Incidol
Loroxide
Lucidol
Lucidol (peroxide)
Lucidol 75FP
Lucidol 78
Lucidol B 50
Lucidol G 20
Luperco
Luperco AA
Luperco AST
Luperox FL
Luzidol
Mytolac
NA 2085 (DOT)
NSC 675
Nayper B and BO
Nayper BO
Nericur
Norox bzp-250
Norox bzp-C-35
Novadelox
Nyper B
Nyper BMT
OXY WASH
OXY-10
Oxy 5
Oxy-L
Oxylite
Panoxyl
Perkadox 20S
Perossido di benzoile
Peroxide, dibenzoyl
Peroxyde de benzoyle
Peroxyderm
Peroxydex
Persa-Gel
Persadox
Preoxydex

Quinolor compound
Resdan Akne
Sanoxit
Superox
Theraderm
Topex
Triaz
UN 2085 (DOT)
UN 2086
UN 2088
Vanoxide
W 75
Xerac
Xerac BP 10
Xerac BP 5
acetoxyl
benoxyl
benzoperoxide
benzoyl superoxide
dibenzoyl peroxide

Inchi: InChI=1S/C14H10O4/c15-13(11-7-3-1-4-8-11)17-18-14(16)12-9-5-2-6-10-12/h1-10H
InchiKey: OMPJBNCRMGITSC-UHFFFAOYSA-N
Formula: C14H10O4
SMILES: O=C(OOC(=O)c1ccccc1)c1ccccc1
Mol. weight [g/mol]: 242.23
CAS: 94-36-0

Physical Properties

Property code	Value	Unit	Source
chs	-6568.70 ± 4.60	kJ/mol	NIST Webbook
chs	-6568.90 ± 8.40	kJ/mol	NIST Webbook
chs	-6546.30 ± 6.30	kJ/mol	NIST Webbook
gf	-176.02	kJ/mol	Joback Method
hf	-281.70 ± 6.20	kJ/mol	NIST Webbook
hf	-272.00 ± 5.40	kJ/mol	NIST Webbook
hfs	-392.00 ± 6.30	kJ/mol	NIST Webbook
hfs	-369.40 ± 8.40	kJ/mol	NIST Webbook
hfs	-369.00 ± 4.60	kJ/mol	NIST Webbook
hfus	25.67	kJ/mol	Joback Method
hsub	97.90 ± 2.50	kJ/mol	NIST Webbook

hsub	98.00 ± 3.00	kJ/mol	NIST Webbook
hvap	69.62	kJ/mol	Joback Method
log10ws	-3.76		Crippen Method
logp	2.615		Crippen Method
mcvol	175.480	ml/mol	McGowan Method
pc	3059.17	kPa	Joback Method
tb	725.66	K	Joback Method
tc	970.13	K	Joback Method
tf	444.70	K	Joback Method
tt	377.75	K	Thermal behavior of benzoyl peroxide mixed with NaOH solution
vc	0.651	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	514.89	J/mol×K	970.13	Joback Method
cpg	454.39	J/mol×K	725.66	Joback Method
cpg	467.35	J/mol×K	766.40	Joback Method
cpg	479.12	J/mol×K	807.15	Joback Method
cpg	489.73	J/mol×K	847.89	Joback Method
cpg	499.20	J/mol×K	888.64	Joback Method
cpg	507.58	J/mol×K	929.38	Joback Method
dvisc	0.0001199	Pa×s	725.66	Joback Method
dvisc	0.0009967	Pa×s	444.70	Joback Method
dvisc	0.0005919	Pa×s	491.53	Joback Method
dvisc	0.0003849	Pa×s	538.35	Joback Method
dvisc	0.0002681	Pa×s	585.18	Joback Method
dvisc	0.0001971	Pa×s	632.01	Joback Method
dvisc	0.0001511	Pa×s	678.83	Joback Method
hfust	22.59	kJ/mol	378.00	NIST Webbook
hsubt	89.70 ± 4.20	kJ/mol	303.00	NIST Webbook

Sources

Thermal behavior of benzoyl peroxide mixed with NaOH solution: https://www.doi.org/10.1016/j.tca.2018.10.003

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=C94360&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws

Legend

chs:	Standard solid enthalpy of combustion
cpg:	Ideal gas heat capacity
dvisc:	Dynamic viscosity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfs:	Solid phase enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hfust:	Enthalpy of fusion at a given temperature
hsub:	Enthalpy of sublimation at standard conditions
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
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature
vc:	Critical Volume