Sulfur monoxide

Inchi: InChI=1S/OS/c1-2
InchiKey: XTQHKBHJIVJGKJ-UHFFFAOYSA-N
Formula: OS
SMILES: O=S
Mol. weight [g/mol]: 48.06
CAS: 13827-32-2

Physical Properties

Property code	Value	Unit	Source
ea	1.16	eV	NIST Webbook
ea	1.12	eV	NIST Webbook
ea	1.20 ± 0.10	eV	NIST Webbook
ea	1.10	eV	NIST Webbook
ea	1.09 ± 0.05	eV	NIST Webbook
ea	1.20	eV	NIST Webbook
ea	1.12 ± 0.01	eV	NIST Webbook
ea	1.10	eV	NIST Webbook
gf	-163.83	kJ/mol	Joback Method
hf	-137.45	kJ/mol	Joback Method
hfus	6.87	kJ/mol	Joback Method
hvap	28.03	kJ/mol	Joback Method
ie	10.34 ± 0.02	eV	NIST Webbook
ie	10.20 ± 0.03	eV	NIST Webbook
ie	10.00 ± 0.10	eV	NIST Webbook
ie	11.30	eV	NIST Webbook
ie	10.28 ± 0.02	eV	NIST Webbook
ie	10.31	eV	NIST Webbook
ie	10.29 ± 0.01	eV	NIST Webbook
ie	10.29 ± 0.00	eV	NIST Webbook
ie	10.29 ± 0.00	eV	NIST Webbook
ie	10.33 ± 0.01	eV	NIST Webbook
log10ws	0.66		Crippen Method
logp	-0.336		Crippen Method
mcvol	28.780	ml/mol	McGowan Method
pc	9174.85	kPa	Joback Method
tb	256.28	K	Joback Method
tc	421.10	K	Joback Method

tf	158.98	K	Joback Method
vc	0.107	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	26.39	J/mol×K	256.28	Joback Method
cpg	28.49	J/mol×K	283.75	Joback Method
cpg	30.29	J/mol×K	311.22	Joback Method
cpg	31.81	J/mol×K	338.69	Joback Method
cpg	33.06	J/mol×K	366.16	Joback Method
cpg	34.07	J/mol×K	393.63	Joback Method
cpg	34.85	J/mol×K	421.10	Joback Method

Sources

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
McGowan Method: http://link.springer.com/article/10.1007/BF02311772
NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C13827322&Units=SI

Legend

cpg: Ideal gas heat capacity
ea: Electron affinity
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
ie: Ionization energy
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
vc:	Critical Volume