

SULFUR TRIOXIDE

Other names:	SULFURIC ANHYDRIDE SULFAN SULFURIC OXIDE
Inchi:	InChI=1S/O3S/c1-4(2)3
InchiKey:	AKEJUJNQAAGONA-UHFFFAOYSA-N
Formula:	O3S
SMILES:	O=S(=O)=O
Mol. weight [g/mol]:	80.06

Physical Properties

Property code	Value	Unit	Source
af	0.4810		KDB
dm	0.00	debye	KDB
gf	-371.30	kJ/mol	KDB
hf	-396.00	kJ/mol	KDB
hfus	14.12	kJ/mol	Joback Method
hvap	39.84	kJ/mol	Joback Method
log10ws	0.26		Crippen Method
logp	-1.004		Crippen Method
mcvol	40.520	ml/mol	McGowan Method
pc	8200.00	kPa	KDB
pt	21.13	kPa	KDB
tb	318.00	K	KDB
tc	491.00	K	KDB
tf	289.90	K	KDB
tt	289.94	K	KDB
vc	0.127	m3/kmol	KDB
zc	0.2550940		KDB
zra	0.25		KDB

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	48.37	J/molxK	235.28	Joback Method

cpg	51.36	J/mol×K	257.93	Joback Method
cpg	54.12	J/mol×K	280.58	Joback Method
cpg	56.67	J/mol×K	303.23	Joback Method
cpg	59.02	J/mol×K	325.88	Joback Method
cpg	61.17	J/mol×K	348.53	Joback Method
cpg	63.13	J/mol×K	371.17	Joback Method
rho1	1780.00	kg/m3	318.00	KDB

Sources

KDB:	https://www.cheric.org/files/research/kdb/mol/mol1938.mol
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
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

af:	Acentric Factor
cpg:	Ideal gas heat capacity
dm:	Dipole Moment
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
pt:	Triple Point Pressure
rho1:	Liquid Density
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature
vc:	Critical Volume
zc:	Critical Compressibility
zra:	Rackett Parameter

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