

Sulfur dichloride

Other names:	Chloride of sulfur Chlorine sulfide Chlorine sulfide (Cl ₂ S) Dichloro sulfide Dichlorosulfane Monosulfur dichloride Sulfur (II) chloride Sulfur chloride Sulfur chloride (SCl ₂) Sulfur dichloride (SCl ₂) sulphur dichloride
Inchi:	InChI=1S/Cl ₂ S/c1-3-2
InchiKey:	FWMUJAIKEJWSSY-UHFFFAOYSA-N
Formula:	Cl ₂ S
SMILES:	CISCl
Mol. weight [g/mol]:	102.97
CAS:	10545-99-0

Physical Properties

Property code	Value	Unit	Source
gf	-41.62	kJ/mol	Joback Method
hf	-32.94	kJ/mol	Joback Method
hfus	8.28	kJ/mol	Joback Method
hvap	31.18	kJ/mol	Joback Method
ie	9.67	eV	NIST Webbook
ie	9.45 ± 0.03	eV	NIST Webbook
ie	9.47 ± 0.03	eV	NIST Webbook
ie	9.49	eV	NIST Webbook
log10ws	-1.99		Crippen Method
logp	2.027		Crippen Method
mvol	51.690	ml/mol	McGowan Method
pc	6151.48	kPa	Joback Method
tb	343.04	K	Joback Method
tc	558.09	K	Joback Method
tf	424.00 ± 3.00	K	NIST Webbook
vc	0.188	m ³ /kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	57.79	J/mol×K	522.25	Joback Method
cpg	54.20	J/mol×K	343.04	Joback Method
cpg	54.94	J/mol×K	378.88	Joback Method
cpg	55.67	J/mol×K	414.72	Joback Method
cpg	56.39	J/mol×K	450.57	Joback Method
cpg	57.10	J/mol×K	486.41	Joback Method
cpg	58.46	J/mol×K	558.09	Joback Method
hvapt	43.80	kJ/mol	306.50	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.72494e+01
Coeff. B	-3.58974e+03
Coeff. C	-4.85500e+01
Temperature range (K), min.	197.15
Temperature range (K), max.	332.75

Sources

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=C10545990&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci9903071
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws

Legend

cpg:	Ideal gas heat capacity
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
hvapt:	Enthalpy of vaporization at a given temperature
ie:	Ionization energy
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
pvap:	Vapor pressure
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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