

Nickel tetracarbonyl

Other names:	Ni(CO) ₄ Nichel tetracarbonile Nickel carbonyl Nickel carbonyl (Ni(CO) ₄) Nickel carbonyl (Ni(CO) ₄), (T-4)- Nickel carbonyle Nickel tetracarbonyle Nikkeltetracarbonyl Rcra waste number P073 Tetracarbonyl nickel UN 1259
Inchi:	InChI=1S/4CO.Ni/c4*1-2;
InchiKey:	AWDHUGLHGCVIEG-UHFFFAOYSA-N
Formula:	C ₄ NiO ₄
SMILES:	[C-]#[O+].[C-]#[O+].[C-]#[O+].[C-]#[O+].[Ni]
Mol. weight [g/mol]:	170.73
CAS:	13463-39-3

Physical Properties

Property code	Value	Unit	Source
affp	742.30	kJ/mol	NIST Webbook
basg	716.00	kJ/mol	NIST Webbook
chl	-1180.30 ± 4.20	kJ/mol	NIST Webbook
hf	-602.50 ± 2.60	kJ/mol	NIST Webbook
hf	-605.80 ± 4.50	kJ/mol	NIST Webbook
hf	-594.80 ± 4.30	kJ/mol	NIST Webbook
hfl	-630.10 ± 2.90	kJ/mol	NIST Webbook
hfl	-633.40 ± 4.30	kJ/mol	NIST Webbook
hvap	27.20	kJ/mol	NIST Webbook
hvap	27.60 ± 1.30	kJ/mol	NIST Webbook
ie	8.35 ± 0.15	eV	NIST Webbook
ie	8.75 ± 0.07	eV	NIST Webbook
ie	8.64 ± 0.15	eV	NIST Webbook
ie	8.28 ± 0.03	eV	NIST Webbook
ie	8.72 ± 0.01	eV	NIST Webbook
ie	8.24 ± 0.14	eV	NIST Webbook
ie	8.28 ± 0.01	eV	NIST Webbook

ie	8.32 ± 0.01	eV	NIST Webbook
ie	8.21 ± 0.03	eV	NIST Webbook
ie	8.80 ± 0.20	eV	NIST Webbook
ie	8.00	eV	NIST Webbook
ie	8.27 ± 0.04	eV	NIST Webbook
ie	8.57 ± 0.10	eV	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
hvapt	29.80	kJ/mol	344.50	NIST Webbook
hvapt	29.50	kJ/mol	282.50	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.45275e+01
Coeff. B	-2.83786e+03
Coeff. C	-2.87620e+01
Temperature range (K), min.	228.05
Temperature range (K), max.	336.69

Sources

NIST Webbook:

<http://webbook.nist.gov/cgi/cbook.cgi?ID=C13463393&Units=SI>

The Yaws Handbook of Vapor Pressure:

<https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure>

Legend

affp: Proton affinity

basg: Gas basicity

chl:	Standard liquid enthalpy of combustion
hf:	Enthalpy of formation at standard conditions
hfl:	Liquid phase enthalpy of formation at standard conditions
hvap:	Enthalpy of vaporization at standard conditions
hvapt:	Enthalpy of vaporization at a given temperature
ie:	Ionization energy
pvap:	Vapor pressure

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