

palladium

Other names:	palladium element
Inchi:	InChI=1S/Pd
InchiKey:	KDLHZDBZIXYQEI-UHFFFAOYSA-N
Formula:	Pd
SMILES:	[Pd]
Mol. weight [g/mol]:	106.42
CAS:	7440-05-3

Physical Properties

Property code	Value	Unit	Source
affp	696.00	kJ/mol	NIST Webbook
basg	673.40	kJ/mol	NIST Webbook
ea	0.56 ± 0.00	eV	NIST Webbook
ea	0.56 ± 0.01	eV	NIST Webbook
ea	0.56 ± 0.01	eV	NIST Webbook
ie	8.34 ± 0.00	eV	NIST Webbook
ie	8.34	eV	NIST Webbook
ie	8.34 ± 0.00	eV	NIST Webbook
ie	8.34	eV	NIST Webbook
ie	8.34 ± 0.00	eV	NIST Webbook
ie	8.35 ± 0.05	eV	NIST Webbook
ie	8.00 ± 0.40	eV	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
psub	1.00e-05	kPa	1473.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	2.00e-05	kPa	1498.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	3.00e-05	kPa	1523.00	Vapor Pressure of Palladium from 1473 K to 1973 K

psub	6.00e-05	kPa	1548.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	9.00e-05	kPa	1573.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	9.00e-05	kPa	1576.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	1.41e-04	kPa	1598.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	1.10e-04	kPa	1600.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	2.00e-04	kPa	1623.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	2.00e-04	kPa	1623.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	1.93e-04	kPa	1623.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	2.00e-04	kPa	1626.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	2.80e-04	kPa	1648.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	2.60e-04	kPa	1650.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	5.00e-04	kPa	1660.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	4.00e-04	kPa	1673.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	4.00e-04	kPa	1673.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	4.00e-04	kPa	1673.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	4.40e-04	kPa	1676.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	6.70e-04	kPa	1685.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	5.00e-04	kPa	1698.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	7.60e-04	kPa	1698.00	Vapor Pressure of Palladium from 1473 K to 1973 K

psub	5.80e-04	kPa	1698.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	6.10e-04	kPa	1700.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	9.00e-04	kPa	1706.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	7.00e-04	kPa	1723.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	1.20e-03	kPa	1723.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	1.08e-03	kPa	1723.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	8.30e-04	kPa	1723.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	9.40e-04	kPa	1726.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	1.20e-03	kPa	1740.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	1.60e-03	kPa	1748.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	1.60e-03	kPa	1748.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	1.20e-03	kPa	1748.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	1.31e-03	kPa	1750.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	2.00e-03	kPa	1773.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	2.20e-03	kPa	1773.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	2.00e-03	kPa	1776.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	2.40e-03	kPa	1798.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	2.90e-03	kPa	1798.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	2.70e-03	kPa	1800.00	Vapor Pressure of Palladium from 1473 K to 1973 K

psub	2.40e-03	kPa	1802.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	2.00e-03	kPa	1806.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	4.00e-03	kPa	1823.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	3.70e-03	kPa	1825.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	4.70e-03	kPa	1840.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	4.70e-03	kPa	1840.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1973.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	5.30e-03	kPa	1850.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	6.10e-03	kPa	1860.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	8.00e-03	kPa	1873.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	7.60e-03	kPa	1873.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	6.60e-03	kPa	1883.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	8.20e-03	kPa	1885.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.01	kPa	1898.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	9.40e-03	kPa	1898.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	9.80e-03	kPa	1900.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.01	kPa	1910.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.01	kPa	1912.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.01	kPa	1923.00	Vapor Pressure of Palladium from 1473 K to 1973 K

psub	0.01	kPa	1923.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.01	kPa	1925.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.01	kPa	1940.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1942.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1948.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1948.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1948.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1950.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1950.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1954.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1963.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1963.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1965.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1965.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1970.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1972.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1973.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	4.80e-03	kPa	1848.00	Vapor Pressure of Palladium from 1473 K to 1973 K
psub	0.02	kPa	1973.00	Vapor Pressure of Palladium from 1473 K to 1973 K

rhoI	10670.00	kg/m3	1790.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems
rhoI	10672.00	kg/m3	1795.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems
rhoI	10652.00	kg/m3	1796.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems
rhoI	10465.00	kg/m3	1951.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems
rhoI	10670.00	kg/m3	1809.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems
rhoI	10677.00	kg/m3	1820.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems
rhoI	10627.00	kg/m3	1831.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems

rhoI	10654.00	kg/m3	1843.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems
rhoI	10601.00	kg/m3	1856.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems
rhoI	10558.00	kg/m3	1878.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems
rhoI	10592.00	kg/m3	1889.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems
rhoI	10575.00	kg/m3	1890.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems
rhoI	10529.00	kg/m3	1917.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems
rhoI	10478.00	kg/m3	1935.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems

rho	10686.00	kg/m3	1802.00	Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems
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Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.77128e+01
Coeff. B	-4.23754e+04
Coeff. C	-2.00000e-02
Temperature range (K), min.	1573.15
Temperature range (K), max.	3673.15

Sources

NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C7440053&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
Correlation between excess volume and thermodynamic functions of liquid Pd-X (X = Fe, Cu and Ni) binary systems	https://www.doi.org/10.1016/j.jct.2018.09.037
Thermodynamic excess quantities of ternary Au Co Pd melts by computer-aided mixing effects of liquid components	https://www.doi.org/10.1016/j.tca.2009.05.010
Computer-aided mixing effects of liquid ternary Au-Fe-Pd alloys by computer-aided Knudsen cell mass spectrometry	https://www.doi.org/10.1016/j.tca.2012.02.012
Computer-aided Knudsen cell mass spectrometry	https://www.doi.org/10.1021/jc050464i

Legend

affp:	Proton affinity
basg:	Gas basicity
ea:	Electron affinity
ie:	Ionization energy
psub:	Sublimation pressure
pvap:	Vapor pressure
rho:	Liquid Density

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