

tungsten

Other names:	wolfram
Inchi:	InChI=1S/W
InchiKey:	WFKWXMTUELFFGS-UHFFFAOYSA-N
Formula:	W
SMILES:	[W]
Mol. weight [g/mol]:	183.84
CAS:	7440-33-7

Physical Properties

Property code	Value	Unit	Source
ea	0.82 ± 0.00	eV	NIST Webbook
ea	0.82 ± 0.00	eV	NIST Webbook
ea	0.82 ± 0.01	eV	NIST Webbook
ie	7.98	eV	NIST Webbook
ie	7.98	eV	NIST Webbook
ie	7.49 ± 0.08	eV	NIST Webbook
ie	7.98	eV	NIST Webbook
ie	7.98	eV	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
dvisc	0.0167000	Paxs	3155.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0157000	Paxs	3200.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation

dvisc	0.0146000	Paxs	3250.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0137000	Paxs	3300.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0128000	Paxs	3350.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0120000	Paxs	3400.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0113000	Paxs	3450.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0106000	Paxs	3500.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0100000	Paxs	3550.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0094000	Paxs	3600.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0091000	Paxs	3634.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0085000	Paxs	3695.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	2.09719e+01
Coeff. B	-9.29967e+04
Coeff. C	-1.41510e+02
Temperature range (K), min.	3477.15
Temperature range (K), max.	5828.15

Sources

Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation: A calorimetric investigation of A2[(UO2)2(WO5)O] compounds with A	https://www.doi.org/10.1016/j.jct.2013.05.036
A calorimetric and thermodynamic investigation of the liquid phase transition of UO2 and UO2-x	https://www.doi.org/10.1016/j.jct.2017.03.039
A calorimetric and thermodynamic investigation of the liquid phase transition of UO2 and UO2-x	https://www.doi.org/10.1016/j.jct.2019.05.012
A calorimetric and thermodynamic investigation of the liquid phase transition of UO2 and UO2-x	https://www.doi.org/10.1016/j.jct.2019.07.015
Study of the thermodynamic properties of tungsten (W) and tungsten dioxide (WO2)	https://www.doi.org/10.1016/j.tca.2012.03.022
Thermal conductivity of the tungsten (W) and tungsten dioxide (WO2)	http://webbook.nist.gov/cgi/cbook.cgi?ID=C7440337&Units=SI
The Yaws Handbook of Vapor Pressure: A calorimetric and thermodynamic investigation of potassium uranyl tungstate K2[(UO2)(W2O8)]:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
	https://www.doi.org/10.1016/j.jct.2012.09.014

Legend

dvisc:	Dynamic viscosity
ea:	Electron affinity
ie:	Ionization energy
pvap:	Vapor pressure

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