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	Pa×s	3155.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0157000	Pa×s	3200.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation

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

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = 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

NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C7440337&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
A calorimetric and thermodynamic investigation of potassium uranyl tungstate K2[(UO2)(W2O8)]:	https://www.doi.org/10.1016/j.jct.2012.09.014
Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation:	https://www.doi.org/10.1016/j.jct.2013.05.036
A calorimetric investigation of A2[(UO2)2(WO5)O] compounds with A = K, Rb and Cs and calculated phase relations in the K2WO4-UO3-H2O and Rb2MoO4-Rb2U2O7-UO3-H2O systems.:	https://www.doi.org/10.1016/j.jct.2017.03.039
A calorimetric and thermodynamic investigation of cesium uranyl tungstate Cs2[(UO2)(W2O8)]:	https://www.doi.org/10.1016/j.jct.2019.05.012
An experimental/computational and DFT + U study of the thermodynamic properties of Cs4[(UO2)4(WO5)(W2O8)O2] and Cs4[(UO2)7(WO5)3O3]:	https://www.doi.org/10.1016/j.jct.2019.07.015
Thermal conductivity of the tungsten-copper composites:	https://www.doi.org/10.1016/j.tca.2012.03.022

Legend

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