

tantalum

Inchi:	InChI=1S/Ta
InchiKey:	GUVRBAGPIYLISA-UHFFFAOYSA-N
Formula:	Ta
SMILES:	[Ta]
Mol. weight [g/mol]:	180.95
CAS:	7440-25-7

Physical Properties

Property code	Value	Unit	Source
ea	0.32 ± 0.01	eV	NIST Webbook
ie	7.89	eV	NIST Webbook
ie	7.89	eV	NIST Webbook
ie	7.31 ± 0.09	eV	NIST Webbook
ie	7.89	eV	NIST Webbook
ie	7.89	eV	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
dvisc	0.0134000	Paxs	2880.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0131000	Paxs	2900.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0124000	Paxs	2950.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation

dvisc	0.0117000	Paxs	3000.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0111000	Paxs	3050.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0106000	Paxs	3100.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0101000	Paxs	3150.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0096000	Paxs	3200.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0092000	Paxs	3250.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0089000	Paxs	3293.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0088000	Paxs	3300.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0084000	Paxs	3350.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0081000	Paxs	3400.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation

dvisc	0.0078000	Paxs	3450.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0075000	Paxs	3500.00	Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation
dvisc	0.0074000	Paxs	3514.00	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	1.80936e+01
Coeff. B	-7.19872e+04
Coeff. C	-3.88960e+02
Temperature range (K), min.	3297.15
Temperature range (K), max.	5731.15

Sources

Viscosity of molten Mo, Ta, Os, Re, and W measured by electrostatic levitation: NIST Webbook:

<https://www.doi.org/10.1016/j.jct.2013.05.036>

<http://webbook.nist.gov/cgi/cbook.cgi?ID=C7440257&Units=SI>

The Yaws Handbook of Vapor Pressure:

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

Legend

dvisc: Dynamic viscosity
ea: Electron affinity
ie: Ionization energy

pvap: Vapor pressure

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