

zirconium oxide

Other names:	Zirconium monoxide
Inchi:	InChI=1S/O.Zr
InchiKey:	GEIAQOFPUVMAGM-UHFFFAOYSA-N
Formula:	OZr
SMILES:	O=[Zr]
Mol. weight [g/mol]:	107.22
CAS:	12036-01-0

Physical Properties

Property code	Value	Unit	Source
ie	5.80 ± 0.20	eV	NIST Webbook
ie	6.20 ± 0.10	eV	NIST Webbook
ie	6.60 ± 0.30	eV	NIST Webbook
ie	5.50	eV	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cps	56.90	J/mol×K	313.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	57.70	J/mol×K	323.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	58.60	J/mol×K	333.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution

cps	59.30	J/mol×K	343.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	60.00	J/mol×K	353.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	60.70	J/mol×K	363.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	61.40	J/mol×K	373.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	61.90	J/mol×K	383.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	62.50	J/mol×K	393.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	63.00	J/mol×K	403.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	63.60	J/mol×K	413.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	64.00	J/mol×K	423.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	

cps	64.50	J/mol×K	433.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	64.90	J/mol×K	443.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	65.40	J/mol×K	453.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	65.80	J/mol×K	463.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	66.20	J/mol×K	473.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	66.60	J/mol×K	483.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	66.90	J/mol×K	493.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	67.30	J/mol×K	503.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution

cps	67.60	J/mol×K	513.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	68.00	J/mol×K	523.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	68.30	J/mol×K	533.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	68.60	J/mol×K	543.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	68.90	J/mol×K	553.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	69.20	J/mol×K	563.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	69.50	J/mol×K	573.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	69.80	J/mol×K	583.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	70.10	J/mol×K	593.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution

cps	70.40	J/mol×K	603.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	70.60	J/mol×K	613.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	70.90	J/mol×K	623.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	71.20	J/mol×K	633.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	71.40	J/mol×K	643.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	71.70	J/mol×K	653.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	71.90	J/mol×K	663.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	72.20	J/mol×K	673.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution

cps	72.40	J/mol×K	683.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	72.70	J/mol×K	693.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	72.90	J/mol×K	703.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	73.10	J/mol×K	713.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	73.40	J/mol×K	723.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	73.60	J/mol×K	733.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	73.80	J/mol×K	743.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	74.10	J/mol×K	753.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	
cps	74.30	J/mol×K	763.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution	

cps	74.50	J/mol×K	773.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	74.70	J/mol×K	783.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	74.90	J/mol×K	793.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution
cps	75.10	J/mol×K	800.00	Thermodynamic investigation of thorium and strontium substituted monazite solid-solution

Sources

High-temperature calorimetry of zirconia: Heat capacity and thermodynamics of the monazite and fluorite solid solutions: Thermodynamic investigation of thorium and strontium substituted monazite solid-solution: NIST Webbook

<https://www.doi.org/10.1016/j.jct.2005.05.002>

<https://www.doi.org/10.1016/j.jct.2017.05.026>

<https://www.doi.org/10.1016/j.tca.2019.01.031>

<http://webbook.nist.gov/cgi/cbook.cgi?ID=C12036010&Units=SI>

Legend

cps: Solid phase heat capacity

ie: Ionization energy

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