

Magnesium fluoride

Other names:	aflun irtran 1 magnesium difluoride magnesium difluoride (MgF2) magnesium fluoride (MgF2)
Inchi:	InChI=1S/2FH.Mg/h2*1H;/q;;;+2/p-2
InchiKey:	ORUIBWPALBXDOA-UHFFFAOYSA-L
Formula:	F2Mg
SMILES:	F[Mg]F
Mol. weight [g/mol]:	62.30
CAS:	7783-40-6

Physical Properties

Property code	Value	Unit	Source
hfs	-1124.20 ± 1.20	kJ/mol	NIST Webbook
hsub	348.20 ± 4.30	kJ/mol	NIST Webbook
ie	13.60 ± 0.30	eV	NIST Webbook
ie	13.30 ± 0.30	eV	NIST Webbook
ie	14.00 ± 0.50	eV	NIST Webbook
ie	13.50 ± 0.40	eV	NIST Webbook
ss	57.20 ± 0.50	J/mol×K	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
dvisc	0.0017630	Paxs	1716.70	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0018950	Paxs	1673.90	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0020360	Paxs	1633.20	Viscosity of Molten Alkaline-Earth Fluorides

dvisc	0.0016800	Paxs	1751.00	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0015880	Paxs	1792.80	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0015520	Paxs	1831.80	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0014480	Paxs	1853.20	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0016020	Paxs	1814.20	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0016320	Paxs	1773.00	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0017580	Paxs	1731.00	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0017840	Paxs	1690.60	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0019800	Paxs	1653.40	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0020810	Paxs	1613.70	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0020900	Paxs	1574.10	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0022570	Paxs	1554.70	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0022500	Paxs	1534.70	Viscosity of Molten Alkaline-Earth Fluorides
dvisc	0.0024160	Paxs	1514.70	Viscosity of Molten Alkaline-Earth Fluorides
hsubt	327.30 ± 4.30	kJ/mol	1393.00	NIST Webbook
hsubt	359.80	kJ/mol	1335.00	NIST Webbook

rho1	2291.00	kg/m3	1821.10	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2305.20	kg/m3	1781.60	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2320.00	kg/m3	1742.80	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2336.80	kg/m3	1702.70	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2355.00	kg/m3	1663.70	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2373.10	kg/m3	1624.80	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2393.20	kg/m3	1585.30	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method

rho1	2413.70	kg/m3	1545.80	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2426.80	kg/m3	1526.20	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2406.20	kg/m3	1568.20	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2386.50	kg/m3	1609.30	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2368.20	kg/m3	1648.70	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2350.10	kg/m3	1688.20	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2332.50	kg/m3	1727.30	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method

rho1	2316.70	kg/m3	1766.10	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2300.30	kg/m3	1804.80	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2284.40	kg/m3	1843.60	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2273.90	kg/m3	1871.80	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method
rho1	2279.50	kg/m3	1861.60	Density Measurement of Molten Alkaline-Earth Fluorides Using Archimedean Dual-Sinker Method

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.61114e+01
Coeff. B	-2.77148e+04
Coeff. C	-1.90480e+02
Temperature range (K), min.	1536.00
Temperature range (K), max.	2400.00

Sources

MgF ₂ Solubility in MgF ₂ + Salt + H ₂ O Systems (Salt = MgSO ₄ , (NH ₄) ₂ SO ₄ , NH ₄ Cl)	https://www.doi.org/10.1021/acs.jced.8b00772
Experimental Measurement of the Systems MF ₂ (M = Ca, Mg, Zn) + ZnSO ₄ + H ₂ O at 298.15 K	https://www.doi.org/10.1021/acs.jced.9b00195
NIST WebBook: Ca, Mg) + ZnF ₂ + H ₂ O at 298.15 K	http://webbook.nist.gov/cgi/cbook.cgi?ID=C7783406&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
Viscosity of Molten Alkaline-Earth Fluorides:	https://www.doi.org/10.1007/s10765-014-1828-5
Density Measurement of Molten Alkaline-Earth Fluorides Using Experimental Measurement Method:	https://www.doi.org/10.1007/s10765-015-1994-0
Solid-Liquid Equilibrium of the Systems MF ₂ + H ₂ O (M = Mg, Ca, Zn) from 298.15 to 353.15 K:	https://www.doi.org/10.1021/acs.jced.8b00047

Legend

dvisc:	Dynamic viscosity
hfs:	Solid phase enthalpy of formation at standard conditions
hsub:	Enthalpy of sublimation at standard conditions
hsubt:	Enthalpy of sublimation at a given temperature
ie:	Ionization energy
pvap:	Vapor pressure
rho:	Liquid Density
ss:	Solid phase molar entropy at standard conditions

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