

heavy water

Inchi: InChI=1S/H2O/h1H2
InchiKey: XLYOFNOQVPJJNP-ZSJDYOACSA-N
Formula: D2O
SMILES: O
Mol. weight [g/mol]: 18.02

Physical Properties

Property code	Value	Unit	Source
log10ws	0.73		Crippen Method
logp	-0.825		Crippen Method
mcvol	16.730	ml/mol	McGowan Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
speedsl	1353.71	m/s	20152.40	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1353.64	m/s	20109.00	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1346.45	m/s	15116.60	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa

speedsl	1346.43	m/s	15113.10	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1339.29	m/s	9986.00	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1339.27	m/s	9983.38	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1332.48	m/s	5021.92	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1332.50	m/s	5025.06	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1329.13	m/s	2465.60	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1329.11	m/s	2465.23	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa

speedsl	1326.03	m/s	150.19	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1326.00	m/s	152.01	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1376.42	m/s	20197.50	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1376.44	m/s	20195.20	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1369.03	m/s	15142.30	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1369.06	m/s	15143.30	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1361.56	m/s	9943.65	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa

speedsl	1361.56	m/s	9942.38	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1354.64	m/s	5043.05	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1354.64	m/s	5043.65	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1351.09	m/s	2497.99	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1351.09	m/s	2494.78	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1347.85	m/s	154.90	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1347.85	m/s	156.96	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa

speedsl	1414.18	m/s	20360.80	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1414.18	m/s	20333.30	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1406.21	m/s	15052.30	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1406.21	m/s	15047.20	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1398.80	m/s	10085.80	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1398.80	m/s	10078.00	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1391.39	m/s	5125.59	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa

speedsl	1391.37	m/s	5119.79	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1387.45	m/s	2473.12	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1387.45	m/s	2473.17	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1384.09	m/s	179.82	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1384.12	m/s	181.19	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1464.59	m/s	20276.20	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1464.53	m/s	20266.80	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa

speedsl	1456.31	m/s	15060.20	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1456.34	m/s	15060.40	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1448.32	m/s	9993.36	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1448.26	m/s	9985.03	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1440.51	m/s	5110.80	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1440.49	m/s	5110.46	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1436.26	m/s	2468.49	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa

speedsl	1436.26	m/s	2458.23	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1432.53	m/s	109.88	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1432.53	m/s	109.61	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1489.95	m/s	20125.50	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1489.98	m/s	20121.50	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1481.58	m/s	15109.40	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1481.61	m/s	15107.40	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa

speedsl	1473.11	m/s	10071.30	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1473.03	m/s	10043.50	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1464.53	m/s	5054.69	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1464.55	m/s	5055.00	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1460.14	m/s	2499.25	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1460.11	m/s	2499.56	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1456.17	m/s	195.58	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa

speedsl	1456.20	m/s	211.29	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1497.05	m/s	20068.50	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1496.99	m/s	20056.30	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1488.07	m/s	15061.70	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1488.04	m/s	15059.70	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1479.06	m/s	10094.40	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1479.03	m/s	10090.90	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa

speedsl	1469.72	m/s	5032.08	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1469.70	m/s	5034.08	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1465.03	m/s	2527.97	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1465.06	m/s	2522.28	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1460.58	m/s	144.59	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa
speedsl	1460.58	m/s	142.15	Speed of sound measurements in deuterium oxide (D2O) over the temperature range from (278.2 to 353.2) K at pressures up to 20 MPa

Sources

Crippen Method:

https://www.chemeo.com/doc/models/crippen_log10ws

Speed of sound measurements in
deuterium oxide (D2O) over the
temperature range from (278.2 to 353.2)
K at pressures up to 20 MPa:
Crippen Method:

<https://www.doi.org/10.1016/j.fluid.2015.10.034>

<http://link.springer.com/article/10.1007/BF02311772>

<http://pubs.acs.org/doi/abs/10.1021/ci990307l>

Legend

log10ws: Log10 of Water solubility in mol/l
logp: Octanol/Water partition coefficient
mcvol: McGowan's characteristic volume
speedsl: Speed of sound in fluid

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