Substance	Ag_2MoO_4(cr)
Third Law Entropy of Silver Molybdate, M.Morishita, H. Houshiyama, Y. Kinoshita, Ai. Nozaki and H. Yamamoto, Mater. Trans., **58**, (2017), pp. 868-872.	
S°_m(Ag_2MoO_4(cr), 298.15 K) / J K^{-1} mol^{-1} = 219.87 ± 2.20 $\Delta_f G^\circ_m$(Ag_2MoO_4(cr), 298.15 K) / kJ mol^{-1} = − 747.49 ± 2.11	

Substance	$AlNd_3$(cr)
Standard Gibbs Energies of Formation of the Ferro- and Paramagnetic Phases of $AlNd_3$, M. Morishita, K. Ikeda, N. Nishimura, S. Miura and Y. Yamada, J. Phys. Chem., C., Vol.116, (2012), pp. 20489-20495.	
S°_m(Para-$Al_{0.25}Nd_{0.75}$(cr), 298.15 K) / J K^{-1} (mol of atoms)$^{-1}$ = 60.590 ± 0.605 $\Delta_f H^\circ_m$(Para-$Al_{0.25}Nd_{0.75}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 30.21 ± 5.07 $\Delta_f G^\circ_m$(Para-$Al_{0.25}Nd_{0.75}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 29.87 ± 5.07 $\Delta_f G^\circ_m$(Ferro-$Al_{0.25}Nd_{0.75}$(cr), 65 - 73.47 K) / kJ (mol of atoms)$^{-1}$ = − 30.2674 + 0.002416 T $\Delta_f G^\circ_m$(Para-$Al_{0.25}Nd_{0.75}$(cr), 73.47 - 85 K) / kJ (mol of atoms)$^{-1}$ = − 30.2157 + 0.001711 T	

Substance	$AlNd_2$(cr)
Calorimetric Study of $AlNd_2$: Heat capacity; Standard Gibbs Energy of Formation, M. Morishita, H. Yamamoto, M. Kodera, K. Ikeda, S. Miura and Y. Yamada, Thermochimca Acta, Vol. 526, 90-98 (2011), pp.90-98.	
S°_m(Para-$AlNd_2$(cr), 298.15 K) / J K^{-1} mol^{-1} = 170.00 ± 1.700 $\Delta_f H^\circ_m$(Para-$AlNd_2$(cr), 298.15 K) / kJ mol^{-1} = − 103.56 ± 23.49 $\Delta_f G^\circ_m$(Para-$AlNd_2$(cr), 298.15 K) / kJ mol^{-1} =− 102.18 ± 23.51 $\Delta_f G^\circ_m$(Ferro-$AlNd_2$(cr), 35 - 39.59 K) / kJ (mol of atoms)$^{-1}$ = − 104.25344 + 8.1586×10^{-3} T $\Delta_f G^\circ_m$(Para-$AlNd_2$(cr), 39.59 - 50 K) / kJ (mol of atoms)$^{-1}$ = − 104.21283 + 7.1328×10^{-3} T	

Substance	AlNd(cr)
Thermodynamic Properties of AlNd Determined by Low Temperature Heat Capacity Measurement, M.Morishita, H.Yamamoto, S.Kojima and T. Horike, Materials Transactions, Vol. 48, (2007), pp.1961-1964.	
S°_m(AlNd(cr), 298.15 K) / J K^{-1} mol^{-1} = 93.72 ± 0.47	

Substance	$Al_{11}Nd_3$(cr)
Determination of Standard Entropy of Formation of $Al_{11}Nd_3$ by Heat Capacity Measurement from Near Absolute Zero Kelvin, H.Yamamoto, M.Morishita and M.Kusumoto, Journal of Alloys and Compounds, Vol.433, (2007) pp.1-5.	
S°_{m}($Al_{0.786}Nd_{0.214}$(cr), 298.15 K) / J K^{-1} (mol of atoms)$^{-1}$ = 35.12 ± 0.35	

Substance	BCo_3(cr)
Studies on Thermodynamic Properties of Co_3B and Co_2B by e.m.f Measurements by the Cell, S. Omori and Y.Hashimoto, J. Japan Inst. Met., Vol.40 (1976), pp.601-605.	
$\Delta_{\mathrm{f}}G^{\circ}_{\mathrm{m}}$($BCo_3$(cr), 1090 - 1200 K) / cal mol^{-1} = − 25229 + 4.775 T ±100	

Substance	BCo_3(cr)
Determination of Standard Gibbs Free Energies of Fomation of Co_3B, Co_2B and CoB by EMF Measurement, K. Koyama and Y.Hashimoto, J. Japan Inst. Met., Vol.53 (1989), pp.1129-1133.	
$\Delta_{\mathrm{f}}G^{\circ}_{\mathrm{m}}$($BCo_3$(cr), 1151 - 1331 K) / J mol^{-1} = − 66900 + 7.51 T ±170	

Substance	BCo_2(cr)
Studies on Thermodynamic Properties of Co_3B and Co_2B by e.m.f Measurements by the Cell, S. Omori and K.Koyama, J. Japan Inst. Met., Vol.40 (1976), pp.601-605.	
$\Delta_{\mathrm{f}}G^{\circ}_{\mathrm{m}}$($BCo_2$(cr), 970 - 1150 K) / cal mol^{-1} = − 41322 + 19.172 T ±100	

Substance	BCo_2(cr)
Determination of Standard Gibbs Free Energies of Fomation of Co_3B, Co_2B and CoB by EMF Measurement, K. Koyama and Y.Hashimoto, J. Japan Inst. Met., Vol.53 (1989), pp.1129-1133.	
$\Delta_{\mathrm{f}}G^{\circ}_{\mathrm{m}}$($BCo_2$(cr), 1126 - 1360 K) / J mol^{-1} = − 70700 + 4.08 T ±400	

Substance	BCo(cr)
Determination of Standard Gibbs Free Energies of Fomation of Co_3B, Co_2B and CoB by EMF Measurement, K. Koyama and Y.Hashimoto, J. Japan Inst. Met., Vol.53 (1989), pp.1129-1133.	
$\Delta_{\mathrm{f}}G^{\circ}_{\mathrm{m}}$(BCo(cr), 1151 - 1274 K) / J mol^{-1} = − 77900 + 10.51 T ±230	

Substance	B_2Cr(cr)
Determination of Gibbs Energies of Formation of Cr_3B_4, CrB_2, and CrB_4 by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, Y. Wada, K. Nishiyama, Y. Taniguchi, A. Nozaki, and M. Morishita, Mater. Trans., Vo.61 (2020), 2357-2362.	
$\Delta_f G^\circ_m$(B_2Cr(cr), 1256 - 1322 K) / J mol^{-1} = − 84572 – 32.442 T ±790	

Substance	B_4Cr(cr)
Determination of Gibbs Energies of Formation of Cr_3B_4, CrB_2, and CrB_4 by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, Y. Wada, K. Nishiyama, Y. Taniguchi, A. Nozaki, and M. Morishita, Mater. Trans., Vo.61 (2020), 2357-2362.	
$\Delta_f G^\circ_m$(B_4Cr(cr), 1280 - 1352 K) / J mol^{-1} = − 105120 – 57.921 T ±2200	

Substance	B_4Cr_3(cr)
Determination of Gibbs Energies of Formation of Cr_3B_4, CrB_2, and CrB_4 by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, Y. Wada, K. Nishiyama, Y. Taniguchi, A. Nozaki, and M. Morishita, Mater. Trans., Vo.61 (2020), 2357-2362.	
$\Delta_f G^\circ_m$(B_4Cr_3(cr), 1256 - 1322 K) / J mol^{-1} = − 264540 – 26.697 T ±970	

Substance	BFe(cr)
Thermodynamic Properties of Fe_2B and FeB by E.M.F Measurements of Cells with Solid Oxide Electrolytes, S. Omori and J.Moriyama, Trans. JIM, Vo.21 (1980), pp.790-96.	
$\Delta_f G^\circ_m$(BFe(cr), 1000 - 1300 K) / J mol^{-1} = − 93010 + 24.04 T ±1250	

Substance	BFe_2(cr)
Thermodynamic Properties of Fe_2B and FeB by E.M.F Measurements of Cells with Solid Oxide Electrolytes, S. Omori and J.Moriyama, Transactions JIM, Vol.21 (1980), pp.790-96.	
$\Delta_f G^\circ_m$(BFe_2(cr), 1000 - 1350 K) / J mol^{-1} = − 101340 + 20.04 T ±1250	

Substance $BFe_{14}Dy(cr)$
Thermodynamic and magnetic properties for Dy2Fe14B determined by heat capacity measurement from very low to high temperatures and solution calorimetry M. Morishita, T. Abe, H. Yamamoto, A. Nozaki, S. Kimura, Thermochimica Acta, Vol.721 (2022), pp.179410-1 – 179410-13.
$\Delta_0^T S_m^\circ(Dy_2Fe_{14}B(cr), 298.15\ K) / (J\ K^{-1}\ (mol\ of\ compd)^{-1}) = 538.27 \pm 3.68$ $\Delta_f H_m^\circ(Dy_2Fe_{14}B(cr), 298.15\ K) / (kJ\ (mol\ of\ compd)^{-1}) = -111.48 \pm 30.17$ $\Delta_f G_m^\circ(Dy_2Fe_{14}B(cr), 298.15\ K) / (kJ\ (mol\ of\ compd)^{-1}) = -112.01 \pm 30.20$ $\Delta_f G_m^\circ(Dy_2Fe_{14}B(cr), T) / (kJ\ (mol\ of\ compd)^{-1})$ $= -1.43469 \times 10^3 + 21.1345\ T - 3.27037\ T \ln T + 3.17703 \times 10^{-3}\ T^2$ $- 5.17559 \times 10^{-7}\ T^3 + 9.19243 \times 10^4\ T^{-1}$ $(\pm 27.38 + 0.0069\ T)$ at 300 – 1158.69 K $\Delta_f G_m^\circ(Dy_2Fe_{14}B(cr), T) / (kJ\ (mol\ of\ compd)^{-1})$ $= -1.75080 \times 10^2 + 2.96000 \times 10^{-2}\ T$ $(\pm 17.39 + 0.0165\ T)$ at 1158.69 – 1500 K $\Delta S^{order \to dis}$ / $(J\ K^{-1}\ (mol\ of\ compd)^{-1}) = 136.78 \pm 22.46$ Θ_D / K = 482 ± 19 $\beta / (\mu_B\ (compd)^{-1}) = 11.34 \pm 2.98$

Substance $BFe_{14}Nd(cr)$
Calorimetric Study of Nd2Fe14B: Heat Capacity, Standard Giggs Energy of Formation and Magnetic Entropy, M. Morishita, T. Abe, A. Nozaki, I. Ohnuma and K. Kamon, Thermochimica Acta, Vol.690 (2020), pp.178672-1 – 178672-18.
$\Delta_0^T S_m^\circ(Nd_2Fe_{14}B(cr), 298.15\ K) / (J\ K^{-1}\ (mol\ of\ compd)^{-1}) = 547.46 \pm 5.48$ $\Delta_f H_m^\circ(Nd_2Fe_{14}B(cr), 298.15\ K) / (kJ\ (mol\ of\ compd)^{-1}) = -93.39 \pm 3.10$ $\Delta_f G_m^\circ(Nd_2Fe_{14}B(cr), 298.15\ K) / (kJ\ (mol\ of\ compd)^{-1}) = -97.23 \pm 3.71$ $\Delta_f G_m^\circ(Nd_2Fe_{14}B(cr), T) / (kJ\ (mol\ of\ compd)^{-1})$ $= -6.81400 \times 10^2 + 9.62890\ T - 1.48782\ T \ln T + 1.33036 \times 10^{-3}\ T^2$ $- 1.69909 \times 10^{-7}\ T^3 + 3.78809 \times 10^4\ T^{-1} (\pm 4.38)$ at 300 – 1205.7 K $\Delta_f G_m^\circ(Nd_2Fe_{14}B(cr), T) / (kJ\ (mol\ of\ compd)^{-1})$ $= -1.81920 \times 10^2 + 4.19000 \times 10^{-2}\ T (\pm 8.45)$ at 1205.7 – 1800 K γ / mJ K^{-2} (mol of atoms)$^{-1}$ = 4.13 ± 0.12 Θ_D / K = 418 ± 12 $\beta / (\mu_B\ (compd)^{-1}) = 34.72 \pm 2.98$

Substance BMo2(cr)
Standard Free Energies of Formation of Mo_2B and Mo_3Si by EMF Measurement, S.Omori, Y. Hashimoto and K.Koyama, J. Japan Inst. Met., Vol.45 (1981), pp.1107-1111.
$\Delta_f G^\circ_m$(BMo_2(cr), 1050 – 1400 K) / J mol^{-1} = − 112730 + 6.213 T ±1070

Substance BMo2(cr)
Determination of Gibbs Energy of Formation of Molybdenum-Boron Binary System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, T. Yamamoto and K. Furukawa, *Metallurgical and Materials Transactions B*, Vol. 42B(2011), pp. 114-120.
$\Delta_f G^\circ_m$(BMo_2(cr), 1198 – 1323 K) / J mol^{-1} = − 193100 + 44.10 T ±700

Substance BMo(cr)
Standard Free Energy of Formation of MoB by EMF Measurement, S.Omori, Y. Hashimoto and K.Koyama, Kouon Gakkaishi, Vol.7 (1981), pp.204-208.
$\Delta_f G^\circ_m$(BMo(cr), 1050 – 1400 K T K) / J mol^{-1} = − 111280 + 8.297 T

Substance αBMo(cr)
Determination of Gibbs Energy of Formation of Molybdenum-Boron Binary System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, T. Yamamoto and K. Furukawa, *Metallurgical and Materials Transactions B*, Vol. 42B(2011), pp. 114-120.
$\Delta_f G^\circ_m$(αBMo_2(cr), 1213 – 1328 K) / J mol^{-1} = − 164000 + 26.45 T ±700

Substance B5Mo2 (cr)
Standard Entropy of Formation of Mo_2B_5 at 298 K, M.Morishita, K.Koyama and S.Yagi, Journal of Alloys and Compounds, Vol.375, (2004), pp.111-114.
S°_m(B_5Mo_2(cr), 298.15 K) / J K^{-1} mol^{-1} = 82.84±0.83 Θ_D(B_5Mo_2(cr)) / K = 540

Substance B5Mo2 (cr)
Determination of Gibbs Energy of Formation of Molybdenum-Boron Binary System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, T. Yamamoto and K. Furukawa, *Metallurgical and Materials Transactions B*, Vol. 42B(2011), pp. 114-120.
$\Delta_f G^\circ_m$(B_5Mo_2(cr), 1205 – 1294 K) / J mol^{-1} = − 622500 + 117.0 T ±3000

Substance B$_4$Mo (cr)
Determination of Gibbs Energy of Formation of Molybdenum-Boron Binary System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, T. Yamamoto and K. Furukawa, *Metallurgical and Materials Transactions B*, Vol. 42B(2011), pp. 114-120.
$\Delta_f G^\circ_m$(B$_4$Mo(cr), 959 – 1153 K) / J mol^{-1} = − 387300 + 93.53 T ±3000

Substance B$_2$NiMo$_2$(cr)
Determination of the Standard Gibbs Free Energy of Formation of NiMo$_2$B$_2$ and the Activity of the Ni−Mo Binary System by EMF Measurement, K.Koyama, Y. Hashimoto, K.Suzuki and K.Kameyama, J. Japan Inst. Met., Vol.53 (1989), pp.183-188.
$\Delta_f G^\circ_m$(B$_2$NiMo$_2$(cr), 1183 – 1423 K) / J mol^{-1} = − 250000 + 19.7 T ±1000 $\Delta_f G^\circ_m$(MoO$_2$(cr), 1183 – 1423 K) / J mol^{-1} = − 567700 + 160.0 T ±200 $\Delta_f G^\circ_m$(Ni$_{0.92}$Mo$_{1.08}$(cr), 1183 – 1423 K) / J mol^{-1} = 8160 − 10.80 T ±20

Substance BNi$_3$(cr)
Thermodynamic Properties of Ni$_3$B and Ni$_2$B by E.M.F Measurements, S. Omori and Y.Hashimoto, J. Japan Soc. Powder Powder Metallurgy, Vo.20 (1973), pp.80-86.
$\Delta_f G^\circ_m$(BNi$_3$(cr), 975 – 1225 K) / cal mol^{-1} = − 31720 + 10.56 T ±200

Substance BNi$_3$(cr)
Determination of Gibbs Energy of Formation of Ni-B-O System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, A. Miyata and K. Koyama, Metallurgical and Materials Transactions B, Vol. 37B(2006), pp. 607-613.
$\Delta_f G^\circ_m$(BNi$_3$(cr), 1198 – 1298 K) / J mol^{-1} = − 124800 + 23.1 T ±300

Substance BNi$_2$(cr)
Thermodynamic Properties of Ni$_3$B and Ni$_2$B by E.M.F Measurements, S. Omori and Y.Hashimoto, J. Japan Soc. Powder Powder Metallurgy, Vo.20 (1973), pp.80-86.
$\Delta_f G^\circ_m$(BNi$_2$(cr), 1050 – 1200 K) / cal mol^{-1} = − 25604 + 7.24 T ±200

Substance BNi_2(cr)
Determination of Gibbs Energy of Formation of Ni-B-O System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, A. Miyata and K. Koyama, Metallurgical and Materials Transactions B, Vol. 37B(2006), pp. 607-613.
$\Delta_f G^\circ_m$(BNi_2(cr), 1182 – 1285 K) / J mol^{-1} = $-$ 124400 + 26.3 T ± 300

Substance $B_{0.414}Ni_{0.586}$(cr)
Determination of Gibbs Energy of Formation of Ni-B-O System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, A. Miyata and K. Koyama, Metallurgical and Materials Transactions B, Vol. 37B(2006), pp. 607-613.
$\Delta_f G^\circ_m$($B_{0.414}Ni_{0.586}$(cr), 1193 – 1273 K) / J mol^{-1} = $-$ 47300 + 9.70 T ± 100

Substance $B_{0.436}Ni_{0.564}$ (cr)
Determination of Gibbs Energy of Formation of Ni-B-O System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, A. Miyata and K. Koyama, Metallurgical and Materials Transactions B, Vol. 37B(2006), pp. 607-613.
$\Delta_f G^\circ_m$($B_{0.434}Ni_{0.564}$(cr), 1193 – 1273 K) / J mol^{-1} = $-$ 49100 + 10.2 T ± 300

Substance BNi (cr)
Determination of Gibbs Energy of Formation of Ni-B-O System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, A. Miyata and K. Koyama, Metallurgical and Materials Transactions B, Vol. 37B(2006), pp. 607-613.
$\Delta_f G^\circ_m$(BNi(cr), 1203 – 1253 K) / J mol^{-1} = $-$ 113800 + 29.1 T ± 300

Substance $B_2Ni_3O_6$ (cr)
Determination of Gibbs Energy of Formation of Ni-B-O System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, A. Miyata and K. Koyama, Metallurgical and Materials Transactions B, Vol. 37B(2006), pp. 607-613.
$\Delta_f G^\circ_m$($B_2Ni_3O_6$(cr), 1182 – 1393 K) / J mol^{-1} = $-$ 1934000 + 455.5 T ± 1000

Substance B_2NiW_2(cr)
Determination of the Standard Gibbs Free Energy of Formation of NiW_2B_2 and the Activity of Ni－W Binary System by EMF Measurement, K.Koyama, Y. Hashimoto, K.Suzuki and H.Matsuo, J. Japan Soc. Powder Powder Metallurgy, Vo.36 (1989), pp.50-56.
$\Delta_f G^\circ_m$(B_2NiW_2(cr), 1273 – 1423 K) / J mol^{-1} = － 1990000 + 3.08 T ±1000 $\Delta_f G^\circ_m$(WO_2(cr), 1223 – 1473 K) / J mol^{-1} = － 573100 + 167.0 T ±200 $\Delta_f G^\circ_m$($WO_{49/18}$(cr), 1223 – 1423 K) / J mol^{-1} = － 755400 + 213.2 T ±200 $\Delta_{mix} G^\circ_m$(Ni – 16.4molW(cr), 1273 – 1423 K) / J mol^{-1} = －4040 － 0.280 T ±3

Substance BW_2(cr)
Standard Free Energies of Formation of W_2B and WB by the EMF Measurement, S.Omori, Y. Hashimoto and K.Koyama, J. Japan Inst. Met., Vol.46 (1982), pp.760-763.
$\Delta_f G^\circ_m$(BW_2(cr), 1100 – 1400 K) / J mol^{-1} = － 97250 + 1.787 T ±900

Substance BW(cr)
Standard Free Energies of Formation of W_2B and WB by the EMF Measurement, S.Omori, Y. Hashimoto and K.Koyama, J. Japan Inst. Met., Vol.46 (1982), pp.760-763.
$\Delta_f G^\circ_m$(BW(cr), 1100 – 1400 K) / kJ mol^{-1} = － 87840 + 1.657 T ±700

Substance $B_{0.333}W_{0.667}$(cr)
Determination of Gibbs Energy of Mixing of Tungsten-Boron Binary System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, Y. Miyake, and S. Hiramatsu, Metallurgical and Materials Transactions B, Vol. 48(2017), pp.1703-1714.
$\Delta_{mix}G$ ($B_{0.333}W_{0.667}$ (cr), 1305 – 1422 K) / J mol^{-1} = － 78070 + 26.01 T ±70

Substance $\alpha B_{0.50}W_{0.50}$(cr)
Determination of Gibbs Energy of Mixing of Tungsten-Boron Binary System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, Y. Miyake, and S. Hiramatsu, Metallurgical and Materials Transactions B, Vol. 48(2017), pp.1703-1714.
$\Delta_{mix}G$ ($\alpha B_{0.50}W_{0.50}$(cr), 1310 – 1399 K) / J mol^{-1} = － 86140 + 20.19 T ±200

Substance	$B_{0.670}W_{0.330}$(cr)
Determination of Gibbs Energy of Mixing of Tungsten-Boron Binary System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, Y. Miyake, and S. Hiramatsu, Metallurgical and Materials Transactions B, Vol. 48(2017), pp.1703-1714.	
$\Delta_{mix}G$ ($B_{0.670}W_{0.330}$(cr), 1228 - 1410 K) / J mol^{-1} = − 78910 + 18.11 T ±200	

Substance	$B_{0.690}W_{0.310}$(cr)
Determination of Gibbs Energy of Mixing of Tungsten-Boron Binary System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, Y. Miyake, and S. Hiramatsu, Metallurgical and Materials Transactions B, Vol. 48(2017), pp.1703-1714.	
$\Delta_{mix}G$ ($B_{0.690}W_{0.310}$(cr), 1228 - 1410 K) / J mol^{-1} = − 77350 + 17.52 T ±500	

Substance	$B_{0.805}W_{0.195}$(cr)
Determination of Gibbs Energy of Mixing of Tungsten-Boron Binary System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, Y. Miyake, and S. Hiramatsu, Metallurgical and Materials Transactions B, Vol. 48(2017), pp.1703-1714.	
$\Delta_{mix}G$ ($B_{0.805}W_{0.195}$(cr), 1170 - 1340 K) / J mol^{-1} = − 63920 + 12.08 T ±500	

Substance	$B_{0.822}W_{0.178}$(cr)
Determination of Gibbs Energy of Mixing of Tungsten-Boron Binary System by Electromotive Force Measurement Using Solid Electrolyte, H. Yamamoto, M. Morishita, Y. Miyake, and S. Hiramatsu, Metallurgical and Materials Transactions B, Vol. 48(2017), pp.1703-1714.	
$\Delta_{mix}G$ ($B_{0.822}W_{0.178}$(cr), 1170 - 1340 K) / J mol^{-1} = − 60090 + 11.15 T ±200	

Substance	$BaMoO_4$(cr)
Thermodynamic Properties of Molybdate ion: Reaction Cycles and Experiments, H. Gamjäger and M.Morishita, Pure and Applied Chemistry, **87**, (2015), pp. 461-476.	
$\Delta_{sln}G^{\circ}_{m}$($BaMoO_4$(cr), 298.15 K) / (kJ (mol of MoO_4^{2-}(aq)$^{-1}$) = 48.51 ± 0.22	

Substance $BaMoO_4$(cr)
Third Law Entropy of Barium Molybdate, M.Morishita, M. Fukushima and H. Houshiyama, Mater. Trans., **57** (2016) , pp.46-51.
S°_{m}($BaMoO_4$(cr), 298.15 K) / J K^{-1} mol^{-1} = 152.69 ± 1.53 Θ_D($BaMoO_4$(cr)) / K = 295 ± 3 $\Delta_f G^{\circ}_{m}$($BaMoO_4$, 298.15 K) / kJ mol^{-1} = −1443.29 ± 1.33

Substance $BaMoO_4$(cr)
Thermodynamic Properties for $MMoO_4$ (M = Mg, Sr and Ba) as the End-members of the Yellow Phases Formed in the Nuclear Fuel Waste Glasses, M. Morishita, Y. Kinoshita, A. Nozaki and H. Yamamoto Appl. Geo-chem., **98**, (2018),pp.310-320.
S°_{m}($BaMoO_4$(cr), 298.15 K) / J K^{-1} mol^{-1} = 152.61 ± 1.53 $\Delta_f G^{\circ}_{m}$($BaMoO_4$, 298.15 K) / kJ mol^{-1} = −1443.27 ± 1.33

Substance $CaMoO_4$(cr)
Thermodynamic Properties of Molybdate ion: Reaction Cycles and Experiments, H. Gamjäger and M.Morishita, Pure and Applied Chemistry, **87**, (2015), pp. 461-476.
$\Delta_{sln} G^{\circ}_{m}$($CaMoO_4$(cr), 298.15 K) / (kJ (mol of MoO_4^{2-}(aq)$^{-1}$) = 45.69 ± 0.32

Substance $CaMoO_4$(cr)
Thermodynamic Properties for Calcium Molybdate, Molybdenum Tri-Oxide and Aqueous Molybdate Ion, M. Morishita, Y. Kinoshita, H. Houshiyama, A. Nozaki and H. Yamamoto J. Chemical Thermodynamics, **114**, (2017), pp.30-43.
S°_{m}($CaMoO_4$(cr), 298.15 K) / J K^{-1} mol^{-1} = 122.23 ± 1.22 $\Delta_f G^{\circ}_{m}$($CaMoO_4$(cr), 298.15 K) / kJ mol^{-1} = −1437.78 ± 1.11

Substance $CaMoO_4$(cr)
Thermodynamic Properties of Molybdate ion: Reaction Cycles and Experiments, H. Gamjäger and M.Morishita, Pure and Applied Chemistry, **87**, (2015), pp. 461-476.
$\Delta_{sln} G^{\circ}_{m}$($CaMoO_4$(cr), 298.15 K) / (kJ (mol of MoO_4^{2-}(aq)$^{-1}$) = 45.69 ± 0.32

Substance	$Ce_2(MoO_4)_3$(cr)
Thermodynamic Properties of Cerium Molybdate, A. Nozaki, M. Morishita, Y. Kinoshita and H. Yamamoto, Z. Metallkd. /Mater. Res. Adv. Tech., **110**, (2019), pp. 715-725.	
S°_m($Ce_2(MoO_4)_3$(cr), 298.15 K) / J K^{-1} mol^{-1} = 408.89 ± 4.09 $\Delta_f G^\circ_m$($Ce_2(MoO_4)_3$(cr), 298.15 K) / kJ mol^{-1} = − 4076.64 ± 4.00 T_N ($Ce_2(MoO_4)_3$(cr)) / K = 1.15 ± 0.30 $\Delta_{sln} G^\circ_m$($Sm_2(MoO_4)_3$(cr), 298.15 K) / (kJ (mol of MoO_4^{2-}(aq)$^{-1}$) = 74.25 ± 1.65	

Substance	$CoMoO_4$(cr)
Redetermination of Standard Gibbs Energiers of Formation of $CoMoO_4$ and $Co_2Mo_3O_8$ by Electromotive Force Measurement, K.Koyama and N.Maekawa, J. Japan Inst. Met., Vol.61 (1997), pp.135-139.	
$\Delta_f G^\circ_m$($CoMoO_4$(cr), 1119 - 1273 K) / kJ mol^{-1} = − 1011 + 0.3044 T ±2	

Substance	$Co_2Mo_3O_8$(cr)
Redetermination of Standard Gibbs Energiers of Formation of $CoMoO_4$ and $Co_2Mo_3O_8$ by Electromotive Force Measurement, K.Koyama and N.Maekawa, J. Japan Inst. Met., Vol.61 (1997), pp.135-139.	
$\Delta_f G^\circ_m$($Co_2Mo_3O_8$(cr), 1119 - 1273 K) / kJ mol^{-1} = − 2285 + 0.7000 T ±5	

Substance	$C_{0.82}Ti$(cr)
Activities of Ti in Ti−C Solid Solutions, K.Koyama and Y.Hashimoto, J. Japan Inst. Met., Vol.37 (1973), pp.120-125.	
$\Delta_f G^\circ_m$(CTi(cr), 853 K) / kcal mol^{-1} = − 45.3 $\Delta_{mix} G^\circ_m$($C_{0.82}Ti$(cr), 853 K) / kcal mol^{-1} = − 22.4	

Substance	Cu(cr)
Thermodynamic Properties for Calcium Molybdate, Molybdenum Tri-Oxide and Aqueous Molybdate Ion, M. Morishita, Y. Kinoshita, H. Houshiyama, A. Nozaki and H. Yamamoto J. Chemical Thermodynamics, **114**, (2017), pp.30-43.	
$\Delta_0^T S^\circ_m$(Cu (cr), 298.15 K) / (J K^{-1} (mol of compd)$^{-1}$) = 33.24 ± 3.32	

Substance Fe(cr)
Calorimetric Study of Nd2Fe14B: Heat Capacity, Standard Giggs Energy of Formation and Magnetic Entropy, M. Morishita, T. Abe, A. Nozaki, I. Ohnuma and K. Kamon, Thermochimica Acta, Vol.690 (2020), pp.178672-1 – 178672-18.
$\Delta_0^T S_m^\circ$(Fe (cr), 298.15 K) / (J K^{-1} (mol of compd)$^{-1}$) = 27.22 ± 2.72

Substance $FeMoO_4$(cr)
Determination of Standard Gibbs Energies of Formation of $Fe_2Mo_3O_{12}$, $Fe_2Mo_3O_8$, Fe_2MoO_4, and $FeMoO_4$ of the Fe－Mo－O Ternary System an μ Phase of the Fe－Mo Binary System by Electromotive Force Measurte Using a Y_2O_3-Stabilized ZrO_2 Solid Electrlyte K.Koyama, M.Morishita, T.Harada and N.Maekawa, Metallurgical and Materials Transactions, Vol. B34, (2003), pp. 653-659.
$\Delta_f G_m^\circ$($FeMoO_4$(cr), 1112 ‐ 1339 K) / kJ mol^{-1} = － 1053.5 + 0.2983 T ± 0.4

Substance $FeMoO_4$(cr)
Thermodynamic Properties for Calcium Molybdate, Molybdenum Tri-Oxide and Aqueous Molybdate Ion, M. Morishita, Y. Kinoshita, H. Houshiyama, A. Nozaki and H. Yamamoto J. Chemical Thermodynamics, **114**, (2017), pp.30-43.
$\Delta_{sln} G_m^\circ$($FeMoO_4$(cr), 298.15 K) / (kJ (mol of MoO_4^{2-}(aq)$^{-1}$) = 46.73 ± 9.56

Substance $Fe_2Mo_3O_{12}$(cr)
Determination of Standard Gibbs Energies of Formation of $Fe_2Mo_3O_{12}$, $Fe_2Mo_3O_8$, Fe_2MoO_4, and $FeMoO_4$ of the Fe－Mo－O Ternary System an μ Phase of the Fe－Mo Binary System by Electromotive Force Measurte Using a Y_2O_3-Stabilized ZrO_2 Solid Electrlyte K.Koyama, M.Morishita, T.Harada and N.Maekawa, Metallurgical and Materials Transactions, Vol. B34, (2003), pp. 653-659.
$\Delta_f G_m^\circ$($Fe_2Mo_3O_{12}$(cr), 1112 ‐ 1339 K) / kJ mol^{-1} = － 2347 + 0.6814 T ± 1

Substance $Fe_2Mo_3O_8$(cr)
Determination of Standard Gibbs Energies of Formation of $Fe_2Mo_3O_{12}$, $Fe_2Mo_3O_8$, Fe_2MoO_4, and $FeMoO_4$ of the Fe－Mo－O Ternary System an μ Phase of the Fe－Mo Binary System by Electromotive Force Measurte Using a Y_2O_3-Stabilized ZrO_2 Solid Electrlyte K.Koyama, M.Morishita, T.Harada and N.Maekawa, Metallurgical and Materials Transactions, Vol.B34, (2003), pp.653-659.
$\Delta_f G_m^\circ$($Fe_2Mo_3O_8$(cr), 1040 ‐ 1145 K) / kJ mol^{-1} = － 2993 + 0.9105 T ± 2

Substance Fe_2MoO_4(cr)
Determination of Standard Gibbs Energies of Formation of $Fe_2Mo_3O_{12}$, $Fe_2Mo_3O_8$, Fe_2MoO_4, and $FeMoO_4$ of the Fe－Mo－O Ternary System an μ Phase of the Fe－Mo Binary System by Electromotive Force Measurte Using a Y_2O_3-Stabilized ZrO_2 Solid Electrlyte K.Koyama, M.Morishita, T.Harada and N.Maekawa, Metallurgical and Materials Transactions, B34, 653-659 (2003).
$\Delta_f G^\circ_m$(Fe_2MoO_4(cr), 1243 ‐ 1466 K) / kJ mol^{-1} = － 1174 + 0.342 T ± 1

Substance $Fe_{0.58}Mo_{0.42}$(cr)
Determination of Standard Gibbs Energies of Formation of $Fe_2Mo_3O_{12}$, $Fe_2Mo_3O_8$, Fe_2MoO_4, and $FeMoO_4$ of the Fe－Mo－O Ternary System an μ Phase of the Fe－Mo Binary System by Electromotive Force Measurte Using a Y_2O_3-Stabilized ZrO_2 Solid Electrlyte K.Koyama, M.Morishita, T.Harada and N.Maekawa, Metallurgical and Materials Transactions, Vol. B34, (2003), pp.653-659.
$\Delta_f G^\circ_m$($Fe_{0.58}Mo_{0.42}$(cr), 1040 ‐ 1145 K) / kJ (mol of atoms)$^{-1}$ = － 18.7 + 0.0117 T ± 0.1

Substance $FeWO_4$(cr)
Determination of Standard Gibbs Energiers of Formation of $FeWO_4$ and Fe_2WO_8 by Electromotive Force Measurement, K.Koyama and T.Harada, J. Japan Soc. Powder Powder Metallurgy, Vo.40 (1993), pp.401-405.
$\Delta_f G^\circ_m$($FeWO_4$(cr), T K) / J mol^{-1} = － 118530 + 357.6 T ±200

Substance Fe_2WO_6(cr)
Determination of Standard Gibbs Energiers of Formation of $FeWO_4$ and Fe_2WO_8 by Electromotive Force Measurement, K.Koyama and T.Harada, J. Japan Soc. Powder Powder Metallurgy, Vo.40 (1993), pp.401-405.
$\Delta_f G^\circ_m$(Fe_2WO_6(cr), T K) / J mol^{-1} = － 1651900 + 516.1 T ±300

Substance La(cr)
Calorimetric Study of Nd2Fe14B: Heat Capacity, Standard Giggs Energy of Formation and Magnetic Entropy, M. Morishita, T. Abe, A. Nozaki, I. Ohnuma and K. Kamon, Thermochimica Acta, Vol.690 (2020), pp.178672-1 – 178672-18.
$\Delta_0^T S^\circ_m$(La (cr), 298.15 K) / (J K^{-1} (mol of compd)$^{-1}$) = 56.89 ± 5.69

Substance LaMg(cr)
Standard Gibbbs Energy of Formation of MgLa Determined by Solution Calorimetry Calorimetry and Heat Capacity Measurement Near Absolute Zero Kelvin, M.Morishita, H.Yamamoto, Y.Matsumoto and A. Onoue, Journal of Alloys and Compounds, Vol.458, (2008), pp. 41-46.
S°_m($La_{0.5}Mg_{0.5}$(cr), 298.15 K) / J K^{-1} (mol of atoms)$^{-1}$ = 40.516 ± 0.405 $\Delta_f H^\circ_m$($La_{0.5}Mg_{0.5}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 20.36 ± 23.70 $\Delta_f G^\circ_m$($La_{0.5}Mg_{0.5}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 19.04 ± 23.70 $\Delta_f G^\circ_m$($La_{0.5}Mg_{0.5}$(cr), 300 - 525 K) / kJ (mol of atoms)$^{-1}$ = − 41.100 + 9.9974×10^{-3} T ± 7.40

Substance $LaMg_3$(cr)
Standard Gibbbs Energy of Formation of Mg_3La Determined by Solution Calorimetry Calorimetry and Heat Capacity Measurement Near Absolute Zero Kelvin, M.Morishita, H.Yamamoto, Y.Matsumoto and A. Onoue, Materials Transactions, Vol.48, (2007), pp. 2159-2164.
S°_m($La_{0.25}Mg_{0.75}$(cr), 298.15 K) / J K^{-1} (mol of atoms)$^{-1}$ = 34.744 ± 0.347 $\Delta_f H^\circ_m$($La_{0.25}Mg_{0.75}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 19.678 ± 4.26 $\Delta_f G^\circ_m$($La_{0.25}Mg_{0.75}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 18.425 ± 4.26 $\Delta_f G^\circ_m$($La_{0.25}Mg_{0.75}$(cr), 350 - 525 K) / kJ (mol of atoms)$^{-1}$ = − 19.913 + 4.8917×10^{-3} T ± 4.26

Substance $LaZn_8$(cr)
Standard Gibbs Energy of Formation of Zn_8La Determined by Solution Calorimetry and Measurement of Heat Capacity from Near Absolute Zero Kelvin, M.Morishita, H.Yamamoto, K.Tsuboki and Y.Matsumoto, Materials Transactions of the the Japan Institute of Metals, Vol.47, (2006),pp.1555-1559.
S°_m($La_{0.111}Zn_{0.889}$(cr), 298.15 K) / J K^{-1} (mol of atoms)$^{-1}$ = 40.62 ± 0.40 $\Delta_f H^\circ_m$($La_{0.111}Zn_{0.889}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 33.02 ± 2 $\Delta_f G^\circ_m$($La_{0.111}Zn_{0.889}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 32.19 ± 2 γ($La_{0.111}Zn_{0.889}$(cr)) / mJ K^{-2} (mol of atoms)$^{-1}$ = 0.854 ± 0.047

Substance $LaZn_{13}$(cr)
Calorimetric Study of $Zn_{13}La$, M.Morishita, K.Koyama and K.Tsuboki, Zeitschrift für Metallkunde, Vol.95, (2004), pp.708-712.
S°_m($La_{0.071}Zn_{0.929}$(cr), 298.15 K) / J K^{-1} (mol of atoms)$^{-1}$ = 40.62 ± 0.41 $\Delta_f H^\circ_m$($La_{0.071}Zn_{0.929}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 24.02 ± 2.0 $\Delta_f G^\circ_m$($La_{0.071}Zn_{0.929}$(cr)(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 23.48 ± 2 γ($La_{0.071}Zn_{0.929}$(cr)) / mJ K^{-2} (mol of atoms)$^{-1}$ = 1.272

Substance	$La_{1-x}Sr_xFeO_{3-\delta}$ (cr)
Heat Capacity of $La_{1-x}Sr_xFeO_{3-\delta}$ from 2 K to 1340 K, M.Morishita and H.Yamamoto, Materials Transactions, Vol. **48**, (2007), pp.3109-3117.	
$\Theta_D(La_{0.2}Sr_{0.2}FeO_{0.6}(cr))$ / K = 479 $*\Delta_f S_{T_V}^{vib.}(V_O^{\cdot\cdot}$, 298 K) / J K^{-1} mol^{-1} = 58.65 $*\ \Delta_f S_{T_V}^{vib.}(V_O^{\cdot\cdot}$, 800 K) / J K^{-1} mol^{-1} = 64.59 *Vibration term of entropy of formation of oxygen vacancy	

Substance	$MgMoO_4$(cr)
Thermodynamic Properties for $MMoO_4$ (M = Mg, Sr and Ba) as the End-members of the Yellow Phases Formed in the Nuclear Fuel Waste Glasses, M. Morishita, Y. Kinoshita, A. Nozaki and H. Yamamoto Appl. Geo-chem., **98**, (2018),pp.310-320.	
$S_m^\circ(MgMoO_4$(cr), 298.15 K) / J K^{-1} mol^{-1} = 119.11 ± 1.19 $\Delta_f G_m^\circ(MgMoO_4$(cr), 298.15 K) / kJ mol^{-1} = − 1295.73 ± 0.91 $\Delta_{sln} G_m^\circ(MgMoO_4$(cr), 298.15 K) / (kJ (mol of MoO_4^{2-}(aq)$^{-1}$) = 3.72 ± 1.88	

Substance	Mg_2Zn_{11}(cr)
Calorimetric Study of $MgZn_2$ and Mg_2Zn_{11}, M.Morishita and K.Koyama, Zeitschrift für Metallkunde, Vol.94, (2003), pp.967-971.	
$S_m^\circ(Mg_{0.154}Zn_{0.846}$(cr), 298.15 K) / J K^{-1} (mol of atoms)$^{-1}$ = 38.60 ± 0.39 $\Delta_f H_m^\circ(Mg_2Zn_{11}$(cr), 298.15 K) / kJ mol^{-1} = − 116.48 ± 39.0 $\Delta_f G_m^\circ(Mg_2Zn_{11}$(cr), 298.15 K) / kJ mol^{-1} = − 109.72 ± 39.0 $\gamma(Mg_{0.154}Zn_{0.846}$(cr)) / mJ K^{-2} (mol of atoms)$^{-1}$ = 0.644	

Substance	Mg_2Zn_{11}(cr)
Thermodynamics of the Formation of Magnesium — Zinc Intermetallic Compounds in the Temperature Range From Absolute Zero to High Temperature, M.Morishita, H.Yamamoto, S.Shikada, M.Kusumoto and Y.Matsumoto Acta Materilalia, 54, 3151-3159 (2006).	
$\Delta_f G_m^\circ(Mg_{0.154}Zn_{0.846}$(cr), 300 - 530 K) / kJ (mol of atoms)$^{-1}$ = − 9.09 + 2.05×10^{-3} T (± 3)	

Substance	Mg_2Zn_{11}(cr)
Formation Energies of the Intermetallic Compounds at the Ground and Thermally Excited States Determined by the ab initio Energetic Calculation and Calorimetric Measurement, M.Morishita, H.Yamamoto, S.Shikada, M.Kusumoto, Y.Matsumoto, A.Onoue, N.Nishimura and H.Ohtani, International J. Quantum Chemistry, Vol.109, (2009), pp.3151-3159.	
$\Delta_f U_m^\circ$($Mg_{0.154}Zn_{0.846}$(cr), 0 K) / kJ (mol of atoms)$^{-1}$ = − 8.74	

Substance	$MgZn_2$(cr)
Calorimetric Study of $MgZn_2$ and Mg_2Zn_{11}, M.Morishita and K.Koyama, Zeitschrift für Metallkunde, Vol.94, (2003), pp.967-971.	
S_m°($Mg_{0.333}Zn_{0.667}$(cr), 298.15 K) / J K^{-1} (mol of atoms)$^{-1}$ = 34.70 ± 0.35 $\Delta_f H_m^\circ$($MgZn_2$(cr), 298.15 K) / kJ mol^{-1} = − 41.40 ± 9.0 $\Delta_f G_m^\circ$(MgZ_2(cr), 298.15 K) / kJ mol^{-1} = − 37.83 ± 9.0 γ($Mg_{0.154}Zn_{0.846}$(cr)) / mJ K^{-2} (mol of atoms)$^{-1}$ = 0.684	

Substance	$MgZn_2$(cr)
Thermodynamics of the Formation of Magnesium − Zinc Intermetallic Compounds in the Temperature Range From Absolute Zero to High Temperature, M.Morishita, H.Yamamoto, S.Shikada, M.Kusumoto and Y.Matsumoto Acta Materilalia, Vol. 54, (2006), pp.3151-3159.	
S_m°($Mg_{0.333}Zn_{0.667}$(cr), 298.15 K) / J K^{-1} (mol of atoms)$^{-1}$ = 36.69 ± 0.37 γ($Mg_{0.333}Zn_{0.667}$(cr)) / mJ K^{-2} (mol of atoms)$^{-1}$ = 0.871±0.049 $\Delta_f G_m^\circ$($Mg_{0.333}Zn_{0.667}$(cr), 300 - 680 K) / kJ (mol of atoms)$^{-1}$ = − 13.87 + 2.22×10^{-3} T (± 3)	

Substance	$MgZn_2$(cr)
Formation Energies of the Intermetallic Compounds at the Ground and Thermally Excited States Determined by the ab initio Energetic Calculation and Calorimetric Measurement, M.Morishita, H.Yamamoto, S.Shikada, M.Kusumoto, Y.Matsumoto, A.Onoue, N.Nishimura and H.Ohtani, International J. Quantum Chemistry, Vol.109, (2009), pp.3151-3159.	
$\Delta_f U_m^\circ$($Mg_{0.333}Zn_{0.667}$(cr), 0 K) / kJ (mol of atoms)$^{-1}$ = − 13.63	

Substance $Mg_{48}Zn_{52}$(cr)
Standard Gibbbs Energy of Formation of $Mg_{48}Zn_{52}$ Determined by Solution Calorimetry and Measurement of Heat Capacity from Near Absolute Zero Kelvin, M.Morishita, K.Koyama, S.Shikata and M. Kusumoto, Metallurgical and Materials Transactions, Vol.B35, (2004), pp.891-895.
S°_m($Mg_{0.48}Zn_{0.52}$(cr), 298.15 K) / J K^{-1} (mol of atoms)$^{-1}$ = 36.14 ± 0.36 $\Delta_f H^\circ_m$($Mg_{48}Zn_{52}$(cr), 298.15 K) / kJ mol^{-1} = − 1214 ± 300 $\Delta_f G^\circ_m$($Mg_{48}Zn_{52}$(cr), 298.15 K) / kJ mol^{-1} = − 1177 ± 300 γ($Mg_{0.48}Zn_{0.52}$(cr)) / mJ K^{-2} (mol of atoms)$^{-1}$ = 1.233

Substance $Mg_{48}Zn_{52}$(cr)
Thermodynamics of the Formation of Magnesium − Zinc Intermetallic Compounds in the Temperature Range From Absolute Zero to High Temperature, M.Morishita, H.Yamamoto, S.Shikada, M.Kusumoto and Y.Matsumoto Acta Materilalia, Vol.54, (2006), pp.3151-3159.
$\Delta_f G^\circ_m$($Mg_{0.48}Zn_{0.52}$(cr), 300 - 530 K) / kJ (mol of atoms)$^{-1}$ = − 9.09 + 2.05 × 10^{-3} T (± 3)

Substance $Mg_{48}Zn_{52}$(cr)
Formation Energies of the Intermetallic Compounds at the Ground and Thermally Excited States Determined by the ab initio Energetic Calculation and Calorimetric Measurement, M.Morishita, H.Yamamoto, S.Shikada, M.Kusumoto, Y.Matsumoto, A.Onoue, N.Nishimura and H.Ohtani, International J. Quantum Chemistry, Vol.109, (2009), pp.3151-3159.
$\Delta_f U^\circ_m$($Mg_{0.48}Zn_{0.52}$(cr), 0 K) / kJ (mol of atoms)$^{-1}$ = − 12.02

Substance $Mg_{48}Zn_{52}$(cr)
Relative Partial Molar Gibbs Energy of Magnesium Component Substituted into Zinc Site in the Mg-Zn Binary Compounds, M.Morishita, H.Yamamoto, S.Shikada, M.Kusumoto, Y.Matsumoto Materials Transactions, Vol.51, (2010), pp.1705-1708.
*$\Delta \bar{G}_{Mg}$(Mg on Zn site in $Mg_{0.48}Zn_{0.52}$(cr), 298.15 K) / MJ (mol of atoms)$^{-1}$ = 0.163 * Anti-site substitution by Mg atoms into Zn sites

Substance Mg$_2$Zn$_3$(cr)
Calorimetric Study of Mg$_2$Zn$_3$, M.Morishita, K.Koyama, S. Shikata and M. Kusumoto, Zeitschrift für Metallkunde, Vol.96, (2005), pp.32-37.
S°_m(Mg$_{0.4}$Zn$_{0.6}$(cr), 298.15 K) / J K^{-1} (mol of atoms)$^{-1}$ = 35.91 ± 0.36 $\Delta_f H^\circ_m$(Mg$_{0.4}$Zn$_{0.6}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 13.96 ± 4 $\Delta_f G^\circ_m$(Mg$_{0.4}$Zn$_{0.6}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 13.31 ± 4 γ(Mg$_{0.4}$Zn$_{0.6}$(cr)) / mJ K^{-2} (mol of atoms)$^{-1}$ = 1.201±0.067

Substance Mg$_2$Zn$_3$(cr)
Thermodynamics of the Formation of Magnesium − Zinc Intermetallic Compounds in the Temperature Range From Absolute Zero to High Temperature, M.Morishita, H.Yamamoto, S.Shikada, M.Kusumoto and Y.Matsumoto Acta Materilalia, Vol.54, (2006), pp.3151-3159.
$\Delta_f G^\circ_m$(α-Mg$_{0.4}$Zn$_{0.6}$(cr), 300 - 557.14 K) / kJ (mol of atoms)$^{-1}$ = − 13.99 + 2.30×10^{-3} T (± 4) $\Delta_f G^\circ_m$(β-Mg$_{0.4}$Zn$_{0.6}$(cr), 557.14 - 640 K) / kJ (mol of atoms)$^{-1}$ = − 13.60 + 1.60×10^{-3} T (± 4)

Substance Mg$_2$Zn$_3$(cr)
Formation Energies of the Intermetallic Compounds at the Ground and Thermally Excited States Determined by the ab initio Energetic Calculation and Calorimetric Measurement, M.Morishita, H.Yamamoto, S.Shikada, M.Kusumoto, Y.Matsumoto, A.Onoue, N.Nishimura and H.Ohtani, International J. Quantum Chemistry, Vol.109, (2009), pp.3151-3159.
$\Delta_f U^\circ_m$(Mg$_{0.4}$Zn$_{0.6}$(cr), 0 K) / kJ (mol of atoms)$^{-1}$ = − 13.74

Substance Mg$_2$Zn$_3$(cr)
Relative Partial Molar Gibbs Energy of Magnesium Component Substituted into Zinc Site in the Mg-Zn Binary Compounds, M.Morishita, H.Yamamoto, S.Shikada, M.Kusumoto, Y.Matsumoto Materials Transactions, Vol.51, (2010), pp.1705-1708.
*$\Delta\bar{G}_{Mg}$(Mg on Zn site in Mg$_{0.4}$Zn$_{0.6}$(cr), 298.15 K) / MJ (mol of atoms)$^{-1}$ = 1.254 * Anti-site substitution by Mg atoms into Zn sites

Substance	Mg_2Sn(cr)
Standard Entropy of Formation of Mg_2Sn at 298 K, M.Morishita and K.Koyama Journal of Alloys and Compounds, Vol.376, (2005), pp.12-15.	
$S^\circ_m(Mg_{0.667}Sn_{0.333}$(cr), 298.15 K) / J K^{-1} (mol of atoms)$^{-1}$ = 34.09 ± 0.34 $\gamma(Mg_{0.667}Sn_{0.333}$(cr)) / mJ K^{-2} (mol of atoms)$^{-1}$ = 0.076±0.004	

Substance	Mo(cr)
Thermodynamic Properties for $Sm_2(MoO_4)_3$: Standard Entropy; Neel Temperature; Solubility Product, M. Morishita, Y. Kinoshita, H. Tanaka, A. Nozaki and H. Yamamoto Monatshefte für Chemie - Chemical Monthly, **149**, (2018), pp.341-356.	
$C^\circ_{p,m}$(Mo(cr), 298.15 K) / J K^{-1} mol^{-1} = 23.911 ± 0.057 S°_m(Mo(cr), 298.15 K) / J K^{-1} mol^{-1} = 28.573 ± 0.086	

Substance	MoO_3(cr)
Thermodynamic Properties for Calcium Molybdate, Molybdenum Tri-Oxide and Aqueous Molybdate Ion, M. Morishita, Y. Kinoshita, H. Houshiyama, A. Nozaki and H. Yamamoto J. Chemical Thermodynamics, **114**, (2017), pp.30-43.	
$S^\circ_m(MoO_3$(cr), 298.15 K) / J K^{-1} mol^{-1} = 75.43 ± 0.75 $\Delta_f G^\circ_m(MoO_3$(cr), 298.15 K) / kJ mol^{-1} = −667.20 ± 0.63	

Substance	MoO_4^{2-}(aq)
Thermodynamic Properties of Molybdate Ion: Reaction Cycles and Experiments, H. Gamsjäger and M.Morishita, Pure and Applied Chemistry, **87** (2015) 461-476.	
$S^\circ_m(MoO_4^{2-}$(aq), 298.15 K) / J K^{-1} mol^{-1} = 32.03 ± 4.05 $\Delta_f H^\circ_m(MoO_4^{2-}$(aq), 298.15 K) / kJ mol^{-1} = − 996.807 ± 0.826 $\Delta_f G^\circ_m(MoO_4^{2-}$(aq), 298.15 K) / kJ mol^{-1} = − 836.542 ± 0.881	

Substance MoO_4^{2-}(aq)
Thermodynamic Properties for Calcium Molybdate, Molybdenum Tri-Oxide and Aqueous Molybdate Ion, M. Morishita, Y. Kinoshita, H. Houshiyama, A. Nozaki and H. Yamamoto J. Chemical Thermodynamics, **114**, (2017), pp.30-43.
S°_{m}(MoO_4^{2-}(aq), 298.15 K) / J K^{-1} mol^{-1} = 32.25 ± 4.41 $\Delta_{\mathrm{f}}H^\circ_{\mathrm{m}}$($MoO_4^{2-}$(aq), 298.15 K) / kJ mol^{-1} = − 996.81 ± 0.83 $\Delta_{\mathrm{f}}G^\circ_{\mathrm{m}}$($MoO_4^{2-}$(aq), 298.15 K) / kJ mol^{-1} = − 836.61 ± 1.02 E°(MoO_4^{2-}(aq), 298.15 K) / V = 4.34 ± 0.01

Substance MoO_4^{2-}(aq)
Thermodynamic Properties for $MMoO_4$ (M = Mg, Sr and Ba) as the End-members of the Yellow Phases Formed in the Nuclear Fuel Waste Glasses, M. Morishita, Y. Kinoshita, A. Nozaki and H. Yamamoto Appl. Geo-chem., **98**, (2018),pp.310-320.
S°_{m}(MoO_4^{2-}(aq), 298.15 K) / J K^{-1} mol^{-1} = 32.30 ± 4.28 $\Delta_{\mathrm{f}}H^\circ_{\mathrm{m}}$($MoO_4^{2-}$(aq), 298.15 K) / kJ mol^{-1} = − 996.81 ± 0.83 $\Delta_{\mathrm{f}}G^\circ_{\mathrm{m}}$($MoO_4^{2-}$(aq), 298.15 K) / kJ mol^{-1} = − 836.63 ± 0.97 E°(MoO_4^{2-}(aq), 298.15 K) / V = 4.34 ± 0.01

Substance Mo_3Si(cr)
Standard Free Energies of Formation of Mo_2B and Mo_3Si by EMF Measurement, S.Omori, Y. Hashimoto and K.Koyama, J. Japan Inst. Met., Vol.45 (1981), pp.1107-1111.
$\Delta_{\mathrm{f}}G^\circ_{\mathrm{m}}$($Mo_3Si$(cr), 1300 - 1400 K) / J mol^{-1} = − 87700 ±1700

Substance Mo_3Si(cr)
Standard Free Energies of Formation of Mo_3Si and Mo_3Si by EMF Measurement, S.Omori, Y. Hashimoto and K.Koyama, Kouon Gakkaishi, Vol.8 (1982), pp.113-118.
$\Delta_{\mathrm{f}}G^\circ_{\mathrm{m}}$($Mo_3Si$(cr), 1150 - 1450 K T K) / J mol^{-1} = − 99220 − 2.10 T ±800

Substance Mo_5Si_3(cr)
Standard Free Energies of Formation of Mo_3Si and Mo_3Si by EMF Measurement, S.Omori, Y. Hashimoto and K.Koyama, Kouon Gakkaishi, Vol.8 (1982), pp.113-118.
$\Delta_{\mathrm{f}}G^\circ_{\mathrm{m}}$($Mo_5Si_3$(cr), 1150 - 1450 K T K) / J mol^{-1} = − 297960 − 3.71 T ±600

Substance Nd(cr)
Calorimetric Study of Nd2Fe14B: Heat Capacity, Standard Giggs Energy of Formation and Magnetic Entropy, M. Morishita, T. Abe, A. Nozaki, I. Ohnuma and K. Kamon, Thermochimica Acta, Vol.690 (2020), pp.178672-1 – 178672-18.
$\Delta_0^T S_m^\circ$(Nd (cr), 298.15 K) / (J K^{-1} (mol of compd)$^{-1}$) = 73.96 ± 7.40

Substance $Nd_2(MoO_4)_3$(cr)
Thermodynamic Properties for Neodymium Molybdate, Y. Kinoshita, M. Morishita, A. Nozaki and H.Yamamoto, J. Jpn. Inst. Met., **60**, (2019), pp.111-120.
S_m°($Nd_2(MoO_4)_3$(cr), 298.15 K) / J K^{-1} mol^{-1} = 409.38 ± 4.39 $\Delta_f G_m^\circ$($Nd_2(MoO_4)_3$(cr), 298.15 K) / kJ mol^{-1} = − 4072.1 ± 2.7 T_N ($Nd_2(MoO_4)_3$(cr)) / K = 1.43 ± 0.14 $\Delta_{sln} G_m^\circ$($Nd_2(MoO_4)_3$(cr), 298.15 K) / (kJ (mol of compd.)$^{-1}$) = 219.1 ± 13.7

Substance $Nd_2(MoO_4)_3$(cr)
Thermodynamic Properties for Neodymium Molybdate, Y. Kinoshita, M. Morishita, A. Nozaki and H.Yamamoto, Mater. Trans., **60**, (2019), pp.111-120.
S_m°($Nd_2(MoO_4)_3$(cr), 298.15 K) / J K^{-1} mol^{-1} = 439.29 ± 4.39 $\Delta_f G_m^\circ$($Nd_2(MoO_4)_3$(cr), 298.15 K) / kJ mol^{-1} = − 4072.13 ± 6.14 T_N ($Nd_2(MoO_4)_3$(cr)) / K = 1.55 ± 0.16 $\Delta_{sln} G_m^\circ$($Nd_2(MoO_4)_3$(cr), 298.15 K) / (kJ (mol of MoO_4^{2-}(aq)$^{-1}$) = 73.12 ± 2.33

Substance $NiMoO_4$(cr)
Calorimetric Study of Nickel Molybdate: Heat Capacity, Enthalpy and Gibbs Energy of Formation, M.Morishita and A.Navrotsky, Journal of the American Ceramic Society, Vol.86, (2003), Vol.1927-1932.
S_m°(α-$NiMoO_4$(cr), 298.15 K) / J K^{-1} mol^{-1} = 118.0 ± 1.18 $\Delta_f H_m^\circ$(α-$NiMoO_4$(cr), 298.15 K) / kJ mol^{-1} = − 1026.0 ± 1.20 $\Delta_f G_m^\circ$(α-$NiMoO_4$(cr), 298.15 K) / kJ mol^{-1} = − 921.2 ± 1.25 $\Delta_f G_m^\circ$(α-$NiMoO_4$(cr), 800 – 1000 K) / kJ (mol of atoms)$^{-1}$ = − 1052.0 + 0.3712 T (± 7) $\Delta_f G_m^\circ$(β-$NiMoO_4$(cr), 1000 – 1380 K) / kJ (mol of atoms)$^{-1}$ = − 993.0 +0.3113 T (± 7)

Substance $NiMoO_4$(cr)
Thermodynamic Properties for Calcium Molybdate, Molybdenum Tri-Oxide and Aqueous Molybdate Ion, M. Morishita, Y. Kinoshita, H. Houshiyama, A. Nozaki and H. Yamamoto J. Chemical Thermodynamics, **114**, (2017), pp.30-43.
$\Delta_{sln}G^{\circ}_{m}$($NiMoO_4$(cr), 298.15 K) / (kJ (mol of MoO_4^{2-}(aq)$^{-1}$) = 38.82 ± 1.79

Substance SiO_2-M_2O (M=Li, Na, K and Cs) (l) and $SiO_2-CaO-Al_2O_3$ (l)
Direct Measurement of Relative Partial Molar Enthalpy of SiO_2 in SiO_2-M_2O (M=Li, Na, K and Cs) Binary and $SiO_2-CaO-Al_2O_3$ Ternary Melts, M.Morishita, A.Navrotsky and M.C. Wilding, Journal of the American Ceramic Society, 87, 1550-1555 (2004).
$\Delta\bar{H}$(SiO_2(l) in 32.7mol%Na_2O-67.3mol%SiO_2(l), 1465 K)/ KJ mol^{-1} = −17.06±5 $\Delta\bar{H}$(SiO_2(l) in 24.8mol%Na_2O-75.2mol%SiO_2(l), 1663 K)/ KJ mol^{-1} = 2.61±5 $\Delta\bar{H}$(SiO_2(l) in 42.5mol%CaO-12.2mol%Al_2O_3-45.3mol%SiO_2(l), 1663 K)/ KJ mol^{-1} = −25.38±5 $\Delta\bar{H}$(SiO_2(l) in 41.4mol%CaO-11.0mol%Al_2O_3-47.6mol%SiO_2(l), 1663 K)/ KJ mol^{-1} = −4.76±5

Substance $Sm_2(MoO_4)_3$(cr)
Thermodynamic Properties for $Sm_2(MoO_4)_3$: Standard Entropy; Néel Temperature; Solubility Product, M. Morishita, Y. Kinoshita, H. Tanaka, A. Nozaki and H. Yamamoto Monatshefte für Chemie - Chemical Monthly, **149**, (2018), pp.341-356.
S°_{m}($Sm_2(MoO_4)_3$(cr), 298.15 K) / J K^{-1} mol^{-1} = 400.14 ± 4.00 $\Delta_{f}G^{\circ}_{m}$($Sm_2(MoO_4)_3$(cr), 298.15 K) / kJ mol^{-1} = − 4048.71 ± 4.45 T_N ($Sm_2(MoO_4)_3$(cr)) / K = 1.30 ± 0.30 $\Delta_{sln}G^{\circ}_{m}$($Sm_2(MoO_4)_3$(cr), 298.15 K) / (kJ (mol of MoO_4^{2-}(aq)$^{-1}$) = 68.56 ± 1.88

Substance $SrMoO_4$(cr)
Thermodynamic Properties of Molybdate ion: Reaction Cycles and Experiments, H. Gamjäger and M.Morishita, Pure and Applied Chemistry, **87**, (2015), pp. 461-476.
$\Delta_{sln}G^{\circ}_{m}$($SrMoO_4$(cr), 298.15 K) / (kJ (mol of MoO_4^{2-}(aq)$^{-1}$) = 45.00 ± 1.40

Substance SrMoO$_4$(cr)
The Third Law Entropy of Strontium Molybdates, M. Morishita and H. Houshiyama, Materials Transactions, Vol.56 (2015), pp.545-549.
S°_m(SrMoO$_4$(cr), 298.15 K) / J K^{-1} mol^{-1} = 136.56 ± 1.37 Θ_D(SrMoO$_4$(cr)) / K = 373 ± 6 $\Delta_f G^\circ_m$(SrMoO$_4$(cr), 298.15 K) / kJ mol^{-1} = − 1437.05 ± 3.60

Substance SrMoO$_4$(cr)
Thermodynamic Properties for MMoO$_4$ (M = Mg, Sr and Ba) as the End-members of the Yellow Phases Formed in the Nuclear Fuel Waste Glasses, M. Morishita, Y. Kinoshita, A. Nozaki and H. Yamamoto Appl. Geo-chem., **98**, (2018),pp.310-320.
S°_m(SrMoO$_4$(cr), 298.15 K) / J K^{-1} mol^{-1} = 136.44 ± 1.36 $\Delta_f G^\circ_m$(SrMoO$_4$(cr), 298.15 K) / kJ mol^{-1} = − 1441.32 ± 1.36

Substance ThMo$_2$O$_8$(cr)
Thermodynamic Properties for Calcium Molybdate, Molybdenum Tri-Oxide and Aqueous Molybdate Ion, M. Morishita, Y. Kinoshita, H. Houshiyama, A. Nozaki and H. Yamamoto J. Chemical Thermodynamics, **114**, (2017), pp.30-43.
$\Delta_{sln} G^\circ_m$(ThMo$_2$O$_8$(cr), 298.15 K) / (kJ (mol of MoO$_4^{2-}$(aq)$^{-1}$) = 92.42 ± 21.24

Substance UMoO$_6$(cr)
Thermodynamic Properties for Calcium Molybdate, Molybdenum Tri-Oxide and Aqueous Molybdate Ion, M. Morishita, Y. Kinoshita, H. Houshiyama, A. Nozaki and H. Yamamoto J. Chemical Thermodynamics, **114**, (2017), pp.30-43.
$\Delta_{sln} G^\circ_m$(UMoO$_6$(cr), 298.15 K) / (kJ (mol of MoO$_4^{2-}$(aq)$^{-1}$) = 68.33 ± 34.47

Substance Y_2Zn_{17}(cr)
Standard Gibbbs Energy of Formation of $Zn_{17}Y_2$ and $Zn_{12}Y$ Determined by Solution Calorimetry Calorimetry and Measurement of Hear Capacity from Near Absolute Zero Kelvin, M.Morishita, H.Yamamoto, K.Tsuboki and T. Horike, International Journal of Materials Research (former Zeitschrift für Metallkunde), Vol.98, (2007) pp.10-15.
$S^\circ_m(Y_{0.105}Zn_{0.895}$(cr), 298.15 K) / J K^{-1} (mol of atoms)$^{-1}$ = 38.95 ± 0.39 $\Delta_f H^\circ_m(Y_{0.105}Zn_{0.895}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 23.53 ± 1.4 $\Delta_f G^\circ_m(Y_{0.105}Zn_{0.895}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 22.62 ± 1.4 γ($Y_{0.105}Zn_{0.895}$(cr)) / mJ K^{-2} (mol of atoms)$^{-1}$ = 0.718

Substance YZn_{12}(cr)
Standard Gibbbs Energy of Formation of $Zn_{17}Y_2$ and $Zn_{12}Y$ Determined by Solution Calorimetry Calorimetry and Measurement of Hear Capacity from Near Absolute Zero Kelvin, M.Morishita, H.Yamamoto, K.Tsuboki and T. Horike, International Journal of Materials Research (former Zeitschrift für Metallkunde), Vol.98, (2007), pp.10-15.
$S^\circ_m(Y_{0.077}Zn_{0.923}$(cr), 298.15 K) / J K^{-1} (mol of atoms)$^{-1}$ = 41.15 ± 0.41 $\Delta_f H^\circ_m(Y_{0.077}Zn_{0.923}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 23.89 ± 1.8 $\Delta_f G^\circ_m(Y_{0.077}Zn_{0.923}$(cr), 298.15 K) / kJ (mol of atoms)$^{-1}$ = − 23.66 ± 1.8 γ($Y_{0.077}Zn_{0.923}$(cr)) / mJ K^{-2} (mol of atoms)$^{-1}$ = 0.598