Spectral Data for Molybdenum Ions, Mo VI–Mo XLII

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Wavelengths, intensities, and classifications for the molybdenum ions Mo VI to Mo XLII are compiled. A short review of the work on each stage of ionization is included. The data are critically evaluated and the best results, in our judgement, are quoted.

Key words: atomic data; energy levels; molybdenum; spectra.

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1. Introduction

From a critical evaluation of the analyses of the spectra Mo VI through Mo XLII, we prepared the present tables of

spectroscopic data. Similar tables were published by Mori *et al.*[1,2] for the iron ions, Fe VIII–Fe XXVI, and the titanium ions, Ti V–Ti XXII, respectively.

This work was motivated by the needs of the tokamak community for spectral data of selected elements. These elements are present in the interior walls and structures of tokamaks and enter the hot plasmas in small quantities. Their spectra are useful in determining ion temperatures, impurity transport, and other diagnostic data.

After publishing the previous compilation[3] of the molybdenum ions, we found that some corrections needed to be made and some references needed to be added. In the present compilation we have made these revisions and adopted energy level values compiled by Sugar, which are in preparation for publication.

We also include values for the ionization energies of each ion. In most cases, experimentally deduced values are lacking, and for these we have quoted the most reliable theoretical value available. Figure 1 shows the calculated ionization potentials of Mo ions by Carlson *et al.*[4] It suggests the ionization stages to be expected at a given plasma temperature.

The present tables were prepared as follows: The available spectral data for the molybdenum spectra Mo VI and higher were collected from published articles. Section 2 lists references for each ion. These works were critically reviewed and the most reliable in our judgment were selected. The values for the energy levels have been either taken from the original article or recalculated from the most reliable wavelength data.

As is evident from the many corrections to early classifications of Mo spectra, these data may still be subject to significant change as more complete spectra are observed.

Prior to the present compilation, Chaghtai and Ahmad,[5] have compiled the energy level tables of Mo I–Mo XLII. Our results contain extensive revisions and additions to this work.

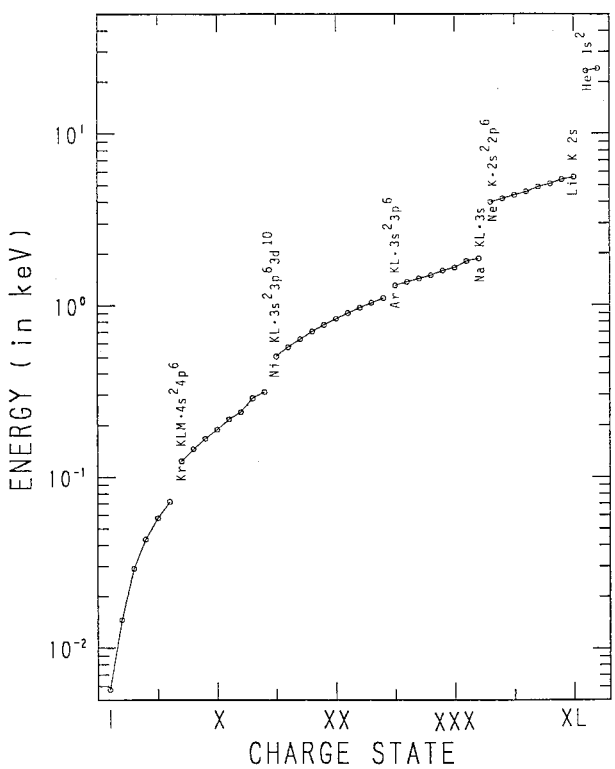

FIG. 1. Ionization potential vs charge state of Mo ions ($Z = 42$).

1.1. Acknowledgments

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1.2. References for Introduction

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[4]T. A. Carlson, C. W. Nestor Jr., N. Wasserman, and J. D. McDowell, At. Data and Nucl. Data Tables **2**, 63 (1970).

[5]M. S. Z. Chaghtai and T. Ahmad, *The Molybdenum Spectra of Mo I–XLII*, IAEA Report INDC(IND)-31/GA (1982).

2. Index Correlation References to Mo Ions

Those ions not found in Sec. 3 are included here for completeness, but did not contribute to the compiled data. References are given in Sec. 5.

Ion	References
Mo VI	27,29,42,47,75, 102,104
Mo VII	21,22,27,29,47,79, 103
Mo VIII	21,24,25,27,29,43, 47,60
Mo IX	21,23,26,29,47,62, 78,80
Mo X	8,29,47,77,78,85
Mo XI	29,77,78
Mo XII	4,34,47,116
Mo XIII	1,4,9,11,19,20,39,47, 50,51,53,54,72,81, 97,98,107,113,114
Mo XIV	4,19,31,32,35,44, 47,49,54,56,58,67,71, 81,82,83,107,111,113
Mo XV	4,19,66,68,74,94, 95,96,107,111
Mo XVI	4,5,6,19,40,68,74, 87,92,95,96,100,108,115
Mo XVII	12,19,39,40,46,57, 68,69,74,84,89,95,115
Mo XVIII	19,70,96,110,115
Mo XIX	96,115
Mo XX	96,115

Ion	References
Mo XXI	96,115
Mo XXII	68,95,96,115
Mo XXIII	20,68,95,96,100,112
Mo XXIV	20,65,91,95,96,99,100
Mo XXV	20,91,95,96
Mo XXVI	20,36,101
Mo XXVII	20,31,36,55,101
Mo XXVIII	20,36,37,101
Mo XXIX	20,29,36,61,100,101
Mo XXX	17,20,30,36,61,65,74, 99,101,117
Mo XXXI	9,15,17,18,20,28,30, 33,36,48,54,59,61, 66,74,88,91,95,96,101, 114
Mo XXXII	15,17,18,30,41,52, 54,61,64,65,74,90, 91,95,96
Mo XXXIII	2,3,13,16,18,20,52, 61,65,73,91,95,96
Mo XXXIV	14,18,20,38,86
Mo XL	10,63,106
Mo XLI	10,76,93,106
Mo XLII	45,105

3. Brief Comments on Each Molybdenum Ion

Mo VI (Rb Sequence)

Ground state: $1s^22s^22p^63s^23p^63d\,^{10}4s^24p^64d\,^2D_{3/2}$

The $4d$–$4f$, $4d$–$5p$, $5s$–$5p$, $5p$–$6s$, and $5p$–$5d$ doublets were first identified by Trawick.[104] Later Charles[27] corrected the $4d$–$4f$ identifications and added the $4d$–$6p$ doublet. A comprehensive analysis of the spectrum in the range of 232–6337 Å was reported by Edlén *et al.*[42] who determined 44 levels of the one-electron configurations: ns ($n = 5$ to 8), np (n = 5 to 8), nd ($n = 4$ to 8), nf ($n = 4$ to 6), ng ($n = 5$ to 8), nh ($n = 6$ to 8), ni ($n = 7$ to 9), and nk ($n = 8$ and 9). Wavelengths are taken from Edlén *et al.*[42]

Tauheed *et al.*[102] observed 60 lines due to transitions from the $4p^54d\,^2$ levels to the $4p^64d$ ground levels in the wavelength range of 238–347 Å and established 38 levels of the $4p^54d\,^2$ configuration. They also reported classifications of the $4p^65s$–$4p^54d\,^2$, $4p^65d$–$4p^54d\,^2$, $4p^54d\,^2$–$4p^66d$, and $4p^54d\,^2$–$4p^6ng$ ($n = 6$ and 7) transitions in the range of 447–2521 Å. The uncertainty of the wavelengths is ± 0.015 and for very faint lines ± 0.03 Å.

The ionization energy was determined by Edlén *et al.*[42] to be 555 132 $\pm$ 2 cm^{-1}.

Mo VII (Kr Sequence)

Ground state: $1s^22s^22p^63s^23p^63d\,^{10}4s^24p^6\,^1S_0$

Chaghtai[22] identified nine transitions to the $4p^6\,^1S_0$ ground state from levels with $J = 1$ in the $4p^5n\ell$($4d$, $5s$, $5d$, and $6s$) configurations. The spectrum in the range of 107–328 Å was reobserved and the classifications were extended to the transitions from the $4p^56d$, $4p^5ns$($n = 7$–10), and $4s4p^65p$ levels by Reader *et al.*[79] The uncertainty of the wavelengths is ± 0.003 Å and for weak lines ± 0.006 Å. The data of Reader *et al.* were adopted in the present compilation.

Tauheed and Chaghtai[103] measured wavelengths of 318 lines in the range of 282–2326 Å with an uncertainty of ± 0.015 Å. These lines were classified among 80 levels of the configurations $4s^24p^6$, $4s^24p^5nd$ ($n = 4$ to 6), $4s^24p^5ns$ ($n = 5$ to 10), $4s^24p^5np$ ($n = 5$ and 6), $4s4p^64d$, and $4s4p^65p$.

The ionization energy was determined by Reader *et al.*[79] to be 1 013 550 $\pm$ 150 cm^{-1}.

Mo VIII (Br Sequence)

Ground state: $1s^22s^22p^63s^23p^63d\,^{10}4s^24p^5\,^2P^\circ_{3/2}$

Wavelengths of the $4s^24p^5\,^2P^\circ_{1/2,3/2}$–$4s4p^6\,^2S_{1/2}$ transitions were measured by Charles.[27] The $4p^5\,^2P^\circ_{1/2,3/2}$–$4p^44d$ and $5s$ transition arrays were first classified by Chagtai.[24] An improved measurement of the arrays and new energy levels were reported by Ekberg *et al.*[43] whose wavelength values are quoted in the present compilation. The uncertainty of the wavelengths is ± 0.003 Å.

Classifications were extended to the transitions between the ground levels and the $4p^45d$, $6d$, $6s$, and $7s$ levels by Chaghtai *et al.*[25] It should be noted that misprints in upper level designation (the J of the parent state) of the lines at 123.973, 126.296, and 126.747–130.111 Å occur in this article. The wavelengths of the $4p^5\,^2P^\circ_{1/2}$–$4p^4(^1D_2)6s\,(2,1/2)_{3/2}$ and $4p^5\,^2P^\circ_{3/2}$–$4p^4(^1D_2)6s\,(2,1/2)_{5/2}$ lines at 124.620 and 121.111 Å, were revised as 124.561 and 121.080 Å by Khan *et al.*[60] The first is apparently a misprint and should be 125.561 Å.

The ionization energy was calculated as 1 162 000 $\pm$ 8000 cm^{-1} by Ekberg *et al.*[43] and as 1 157 900 $\pm$ 8000 cm^{-1} by Chaghtai *et al.*[25]

Mo IX (Se Sequence)

Ground state: $1s^22s^22p^63s^23p^63d\,^{10}4s^24p^4\,^3P_2$

An analysis of the $4s^24p^4$–$4s^24p^35s$ array in the range of 155–178 Å was published by Chaghtai *et al.*[26] Level values for the ground configuration were obtained more accurately by Reader and Acquista[80] in their interpretation of the $4s^24p^4$–$4s4p^5$ array at 538–577 Å.

The $4s^24p^4$–$4s^24p^34d$ array was analyzed by Rahimullah *et al.*[78] A considerable extension of the work was reported by Khatoon *et al.*[62] who interpreted the transitions from the $4p^35d$, $6d$, $6s$, and $7s$ configurations. They derived the value for the ionization energy from the ns series of 1 323 700 $\pm$ 8000 cm^{-1}.

The uncertainty of the wavelengths is ± 0.005 Å.

Mo X (As Sequence)

Ground state: $1s^22s^22p^63s^23p^63d\,^{10}4s^24p^3\,^4S^\circ_{3/2}$

The $4s^24p^3$–$4s^24p^25s$ transition array was first identified by Rahimullah *et al.*[77] and confirmed by Reader and Ac-

quista,[85] whose wavelengths are adopted in the present compilation. The uncertainty of the wavelengths is ± 0.005 Å.

The $4s^24p^3$–$4s4p^4$ array was also analyzed by Reader and Acquista[85] and all the eight levels of $4s4p^4$ configuration were established.

The $4s^24p^3$–$4s^24p^24d$ array was identified and the 19 levels of $4s^24p^24d$ were determined by Rahimullah *et al.*[78] An additional measurement was reported by Ateqad *et al.*[8] who determined the other seven levels of the $4s^24p^24d$ configuration (leaving $^4F_{9/2}$ which cannot combine with the ground configuration). The uncertainty of the wavelengths is ± 0.01 Å.

The ionization energy was calculated as 1 503 000 $\pm$ 10 000 cm^{-1} by Reader and Acquista.[85]

Mo XI (Ge Sequence)

Ground state: $1s^22s^22p^63s^23p^63d\ ^{10}4s^24p^2\ ^3P_0$

An analysis of the $4s^24p^2$–$4s^24p5s$ array was first reported by Rahimullah *et al.*[77] Rahimullah *et al.*[78] added analyses of the arrays $4s^24p^2$–$4s^24p4d$ and $4s^24p^2$–$4s4p^3$.

In the latter article, the values of the levels $4s^24p^2$ $^3P_{0,1,2}$, $^1D_2$, and $^1S_0$ of the ground configuration and the excited levels $4s^24p5s\ ^3P^\circ_{0,1,2}$ and $^1P^\circ_1$ were improved, and all the $4s^24p4d$ levels (except $^3F^\circ_4$ which does not combine with levels of the ground configuration) plus the two $4s4p^3\ ^1P^\circ_1$ and $^3S^\circ_1$ levels, were established. The uncertainty of the wavelengths is less than ± 0.005 Å. The ionization energy was calculated by Cowan[29] to be 1 688 000 $\pm$ 10 000 cm^{-1}.

Mo XII (Ga Sequence)

Ground state: $1s^22s^22p^63s^23p^63d\ ^{10}4s^24p\ ^2P^\circ_{1/2}$

There are few measurements for this ionic species. Alexander *et al.*[4] classified the two transitions $4s^24p\ ^2P^\circ_{3/2}$–$4s^25d\ ^2D_{5/2}$ and $4s^24p\ ^2P^\circ_{1/2}$–$4s^25d\ ^2D_{3/2}$. Curtis *et al.*[34] measured the ground state $4s^24p\ ^2P^\circ$ splitting as 28 463(2) cm^{-1} from an M1 transition in a tokamak plasma. Comparing the $^2P^\circ$ interval with that by Alexander *et al.*[4] they concluded that the line classifications in Ref. 4 were incorrect.

The transitions $4s^24p\ ^2P^\circ$–$4s^25s\ ^2S$ and $4s^24p\ ^2P^\circ$–$4s4p^2\ ^2P$ were identified by Reader, Acquista, and Goldsmith.[116] Their measurement uncertainty is ± 0.005 Å, and the $4s^24p$ ground state interval is given as 28 467(4) cm^{-1}. We have averaged this with the tokamak value. They also gave a value for the ionization energy of 1 857 300 $\pm$ 500 cm^{-1}, derived with an empirically adjusted Dirac-Fock calculation.

Mo XIII (Zn Sequence)

Ground state: $1s^22s^22p^63s^23p^63d\ ^{10}4s^2\ ^1S_0$

Observation of the lines due to the $4s^2\ ^1S_0$–$4s5p\ ^{1,3}P^\circ_1$ and $4s4p\ ^3P_{2,1,0}$–$4s5s\ ^3S_1$ transitions was reported by Alexander *et al.*[4] The uncertainty of the wavelengths is ± 0.005 Å.

The resonance line $4s^2\ ^1S_0$–$4s4p\ ^1P^\circ_1$ was observed in tokamak plasmas by Hinnov *et al.*[53] and Hinnov.[54] This line was identified in a laser-produced plasma by Reader and Acquista.[81] Finkenthal *et al.*[47] also observed this line as well as the intercombination line $^1S_0$–$^3P^\circ_1$ at 481.02 Å and the magnetic quadrupole line $4s^2\ ^1S_0$–$4s4p\ ^3P^\circ_2$ at 460.9 Å in addition to three lines belonging to $4s4p$–$4p^2$ transitions. Wavelengths of the $4s^2$–$4s4p$ and $4s4p$–$4p^2$ transition arrays were remeasured with an uncertainty of ± 0.01 Å in a laser-produced plasma by Litzén and Ando,[72] who reported energy levels of the configurations $4s4p$ and $4p^2$. They show that identification of the multiplet $4s4p\ ^3P^\circ$–$4s5s\ ^3S$ in Ref. 4 is incorrect. They confirmed the identification by Finkenthal *et al.*[47] of the $4s4p\ ^3P^\circ_2$–$4p^2\ ^3P_2$ and $4s^2\ ^1S_0$–$4s4p\ ^3P^\circ_1$ lines, but found that the other identifications are incorrect.

Burkhalter *et al.*[19] reported the $3d^{10}4s^2\ ^1S_0$–$3d^94s^24p\ ^3D^\circ_1$ and –$3d^94s^24p\ ^1P^\circ_1$ transitions, and Wyart *et al.*[107] confirmed them with an uncertainty of ± 0.010 Å. Wavelengths are quoted from the latter article.

The ionization energy was calculated by Cowan[20] as 2 240 000 $\pm$ 22 000 cm^{-1}.

Mo XIV (Cu Sequence)

Ground state: $1s^22s^22p^63s^23p^63d\ ^{10}4s\ ^2S_{1/2}$

Alexander *et al.*[4] observed the one-electron spectrum comprising the $4s$–$5p$, $4s$–$6p$, $4p$–$5s$, $4p$–$5d$, and $4d$–$5f$ lines in the region from 45 to 350 Å.

The $4s$–$4p$ resonance doublet was measured by Hinnov *et al.*[53,54] in tokamak discharges. An improved measurement was reported by Reader and Acquista.[81]

Curtis *et al.*[31] classified the $4s$–$7p$, $4p$–$6s$, $4p$–$7s$, $4p$–$8s$, $4f$–$5g$, $4f$–$6g$, and $4d$–$5p$ transitions in the range of 35–184 Å with wavelength accuracy ranging from ± 0.05 to ± 0.2 Å.

Reader *et al.*[82] observed the spectrum in the range of 70–630 Å. From 35 line identifications, a system of 22 energy levels was determined. The level system ($3d^{10}n\ell$) includes the series ns ($n = 4$–6), np ($n = 4$–6), nd ($n = 4$ and 5), nf ($n = 4$–6), and ng ($n = 5$–7). The uncertainty of wavelengths is ± 0.005 Å. The value of the $6p\ ^2P^\circ_{1/2}$ level was revised by Reader *et al.*[83] In the present compilation their results are adopted. They found that the identifications by Curtis *et al.* of the $4f$–$5g$, $4f$–$6g$, and $4d$–$5p$ transitions are incorrect.

The spectra in the range of 50–54 Å were analyzed by Burkhalter *et al.*,[19] Klapisch *et al.*,[67] Wyart *et al.*,[107] and Wyart *et al.*[111] Lines involved in the spectra have been identified as the $3d^{10}4s$–$3d^94s4p$, $3d^{10}4p$–$3d^94p^2$, and $3d^{10}4s$–$3d^{10}7p$ transitions. Wavelengths in Ref. 111 are adopted in this compilation. The uncertainty is given as ± 0.005 Å.

The ionization energy was determined as 2 441 000 $\pm$ 2000 cm^{-1} by Curtis *et al.*[31] from ns and np series, and as 2 440 600 $\pm$ 300 cm^{-1} by Reader *et al.*[81] from their ng series ($n = 5$–7).

Mo XV (Ni Sequence)

Ground state: $1s^22s^22p^63s^23p^63d^{10}\ ^1S_0$

The three resonance lines $3d^{10}\ ^1S_0$–$3d^94p\ ^3P^\circ_1$, $^1P^\circ_1$, and $^3D^\circ_1$ were first measured with an uncertainty of ± 0.02 Å by Alexander *et al.*[4] The $^1S_0$–$^1P^\circ_1$ and $^3D^\circ_1$ lines were observed in tokamak discharges together with new lines: the resonance line $3d^{10}\ ^1S_0$–$3d^94f\ ^1P^\circ_1$ at 35.362 $\pm$ 0.005 Å by Schwob *et*

al.[96] and two electric quadrupole lines $3d^{10}\,{}^1S_0$–$3d^9 4s\,{}^{1,3}D_2$ at 57.927 ± 0.005 Å and 58.832 ± 0.005 Å by Klapisch *et al.*[66] These lines were also observed by Mansfield *et al.*[74]

Burkhalter *et al.*[19] remeasured the resonance lines $3d^{10}$–$3d^9 4p$ and $3d^9 4f$ with an uncertainty of ± 0.010 Å. Improved measurements with an uncertainty of ± 0.005 Å were given by Schweitzer *et al.*[94] for the $3d^{10}$–$3d^9 4f$ and $5f$ transitions, Wyart *et al.*[107] for the $3d^{10}\,{}^1S_0$–$3d^9 4p\,{}^1P_1^\circ$ and ${}^3D_1^\circ$ transitions, and Wyart *et al.*[111] for the $3d^{10}\,{}^1S_0$–$3d^9 4p\,{}^3P_1^\circ$ transition. These wavelength data are adopted in this compilation.

We derived the value for the ionization energy of 4 391 000(5000) cm^{-1} from the nf terms, with the assumption of a quantum defect difference obtained from Mo XIV.

Mo XVI (Co Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^9\,{}^2D_{5/2}$

The magnetic dipole line $3p^6 3d^9\,{}^2D_{5/2}$–${}^2D_{3/2}$ was measured in a tokamak discharge by Suckewer *et al.*[100] with an uncertainty of ± 0.2 Å.

The transition arrays $3p^6 3d^9$–$3p^5 3d^{10}$ and $3p^6 3d^8 4p$ in the range of 43–78 Å were first observed by Edlén.[40] Identification of the arrays was followed by Alexander *et al.*,[4] Mansfield *et al.*,[74] and Burkhalter *et al.*[19] Revision of identifications in the previous works and addition of new lines are given by Ryabtsev and Reader[92] who measured and identified 46 lines belonging to these transition arrays, which were adopted in the present compilation. The uncertainty of the wavelengths is ± 0.005 Å. Measurements of the $3d^9$–$3d^8 4p$ array were also reported by Ando[5] and Wyart *et al.*[108]

The electric quadrupole lines $3d^9$–$3d^8 4s$ were observed in a tokamak discharge by Mansfield *et al.*[74] These lines were measured in the range of 51–55 Å with an uncertainty of ± 0.01 Å.

The $3d^9$–$3d^8 4f$ lines in the region from 32 to 34 Å were first classified in a tokamak spectrum by Schwob *et al.*[96] Mansfield *et al.*[74] identified six lines. The identifications were extended to a total of 17 lines by Burkhalter *et al.*[19] Ando and Ishii[6] revised the previous identifications and extended the number to 29. Wavelength data are taken from Ref. 6.

The ionization energy was calculated by Carlson *et al.*[115] as 571 ± 22 eV.

Mo XVII (Fe Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^8\,{}^3F_4$

The $3p^6 3d^8$–$3p^5 3d^9$ transitions were investigated by Bogdanovichene *et al.*[12] and Burkhalter *et al.*[19] An extended investigation was reported by Reader and Ryabtsev,[84] who measured wavelengths of 43 lines and established all of the $3p^6 3d^8$ and $3p^5 3d^9$ levels. The uncertainty of the wavelengths is ± 0.005 Å. Additional measurement of the $3p^6 3d^8\,{}^1S_0$–$3d^5 3d^9\,{}^3D_1^\circ$ transition and revision of the $3d^6 3d^8\,{}^1S_0$ level were made by Reader and Ryabtsev.[89]

The $3d^8$–$3d^7 4p$ transitions were observed as a band of lines in the region from 42.1 to 43.2 Å in a tokamak plasma by Schwob *et al.*[96] Mansfield *et al.*[74] reobserved a spectrum in almost the same wavelength range and identified 18 lines and a band of lines extending from 42.08 to 42.12 Å. A comprehensive investigation for the transitions was reported by Wyart *et al.*[109] who measured and identified 47 lines. According to their designations, the upper levels in the table are represented by the symbol $(N)_J$, the index N increasing with energy from the lowest level ($N = 1$) for each J.

The wavelength of the intra-shell transition $3d^8\,{}^3F_4$–${}^3F_3$ was measured in a tokamak discharge by Suckewer *et al.*[100] The wavelength is in good agreement with that derived from the shorter wavelength measurements of Reader and Ryabtsev.[84]

The ionization energy was calculated by Carlson *et al.*[115] as 636 ± 25 eV.

Mo XVIII (Mn Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^7\,{}^4F_{9/2}$

A group of unresolved lines in the range 38.7–40.0 Å was attributed to the $3d^7$–$3d^6 4p$ transitions by Schwob *et al.*[96]

Four lines, lying at about 67 Å, were measured and identified as the $3p^6 3d^7$–$3p^5 3d^8$ lines by Burkhalter *et al.*[19] Wyart *et al.*[110] extended the wavelength range of measurement to 66–83.5 Å and identified about 50 lines due to the $3p$–$3d$ transitions. In the table, the upper levels established by Wyart *et al.*[110] are designated by the symbol $(N)_J$ for each J, the index N increasing with energy from the lowest level ($N = 1$) for each J. Designations of the $3d^7$ levels are taken from Kubo *et al.*[70] who reported the result of a calculation carried out by means of the Cowan's program package with use of scaling factors in Table XI of Ref. 110.

The ionization energy was calculated by Carlson *et al.*[115] as 702 ± 28 eV.

Mo XIX (Cr Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^6\,{}^5D_4$

No resolved lines are reported for this ion. Schwob *et al.*[96] observed the $3d^6$–$3d^5 4p$ array in the range of 36.0–36.9 Å.

The ionization energy was calculated by Carlson *et al.*[115] as 767 ± 30 eV.

Mo XX (V Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5\,{}^6S_{5/2}$

No resolved lines are reported for this ion. Schwob *et al.*[96] observed the $3d^5$–$3d^4 4f$ array in the range of 25.8–26.6 Å.

The ionization energy was calculated by Carlson *et al.*[115] as 833 ± 33 eV.

Mo XXI (Ti Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^4\,{}^5D_0$

No resolved lines are reported for this ion. Schwob *et al.*[96] observed the $3d^4$–$3d^3 4f$ array in the range of 24.5–25.2 Å.

The ionization energy was calculated by Carlson *et al.*[115] as 902 ± 36 eV.

Mo XXII (Sc Sequence)

Ground state: $1s^22s^22p^63s^23p^63d^3\ ^4F_{3/2}$

No resolved lines are reported for this ion. Schwob *et al.*[96] observed the $3d^3$–$3d^24f$ array in the range of 23.5–24.1 Å.

The ionization energy was calculated by Carlson *et al.*[115] as 968 ± 39 eV.

Mo XXIII (Ca Sequence)

Ground state: $1s^22s^22p^63s^23p^63d^2\ ^3F_2$

The magnetic dipole transition $3d^2\ ^3F_2$–$^3F_3$ was observed in a tokamak discharge at 3553.3 ± 0.3 Å (in air) by Suckewer *et al.*[100] They also tentatively identified a weak line at 3319.8 ± 0.3 Å (in air) as $3d^2\ ^3F_3$–$^3F_4$. The latter identification was rejected by Wyart *et al.*[112]

Schwob *et al.*[96] observed the $3d^2$–$3d4f$ array in the range of 22.4–22.9 Å.

The ionization energy was calculated by Cowan[20] as 1020 ± 10 eV.

Mo XXIV (K Sequence)

Ground state: $1s^22s^22p^63s^23p^63d\ ^2D_{3/2}$

Schwob *et al.*[96] reported the $3d\ ^2D$–$4f\ ^2F$ doublet with an accuracy of ± 0.005 Å.

The ground state ^2D splitting was observed by means of an M1 line at 2686.5 ± 0.3 Å (in air) in a tokamak discharge by Suckewer *et al.*[100]

The ionization energy was calculated by Cowan[20] as 1083 ± 11 eV.

Mo XXV (Ar Sequence)

Ground state: $1s^22s^22p^63s^23p^6\ ^1S_0$

Two resonance lines $3p^6\ ^1S_0$–$3p^54d\ ^3D_1$ and $^1P_1$ were observed by Schwob *et al.*[96] in a tokamak discharge. They report a wavelength uncertainty of ± 0.005 Å.

The ionization energy was calculated by Cowan[20] as 1264 ± 13 eV.

Mo XXVI (Cl Sequence)

Ground state: $1s^22s^22p^63s^23p^5\ ^2P^\circ_{3/2}$

The ground term $^2P^\circ$ splitting was observed by means of a magnetic dipole transition observed in a tokamak discharge at 534.9 ± 0.3 Å by Denne *et al.*[36]

The ionization energy was calculated by Cowan[20] as 1323 ± 13 eV.

Mo XXVII (S Sequence)

Ground state: $1s^22s^22p^63s^23p^4\ ^3P_2$

Four magnetic dipole lines were observed in tokamak discharges arising within the $3p^4$ ground configuration by Denne *et al.*[36] and Hinnov.[55] They established all levels but $^3P_0$ of this group.

The ionization energy was calculated by Cowan[20] as 1387 ± 14 eV.

Mo XXVIII (P Sequence)

Ground state: $1s^22s^22p^63s^23p^3\ ^4S^\circ_{3/2}$

Seven magnetic dipole lines were observed in tokamak discharges arising within the $3p^3$ ground configuration by Denne *et al.*[36,37] They established all the levels of this group.

The ionization energy was calculated by Cowan[20] as 1449 ± 14 eV.

Mo XXIX (Si Sequence)

Ground state: $1s^22s^22p^63s^23p^2\ ^3P_0$

Five magnetic dipole lines were observed in tokamak discharges arising within the $3p^2$ ground configuration by Denne *et al.*[36] and Hinnov.[55] They established all the levels of this group.

The ionization energy was calculated by Cowan[20] as 1535 ± 15 eV.

Mo XXX (Al Sequence)

Ground state: $1s^22s^22p^63s^23p\ ^2P^\circ_{1/2}$

Denne *et al.*[36] identified the magnetic dipole line $3s^23p\ ^2P^\circ_{1/2}$–$^2P^\circ_{3/2}$ at 490.1 Å. Burkhalter *et al.*[17] tentatively identified the $3p$–$3d$ doublet at 92.511 and 108.2 Å and classified the $3p$–$4d$, $3p$–$4s$, and $3d$–$4f$ lines in the wavelength region from 15.627 to 18.056 Å. The uncertainty of the wavelengths is ± 0.010 Å. Hinnov *et al.*[117] replaced the $3p$–$3d$ by the lines 104.33 Å for $^2P_{3/2}$–$^2D_{5/2}$ and 105.59 Å for $^2P_{3/2}$–$^2D_{3/2}$. This paper was published too late for these wavelengths to be included in the table. The $3p$–$4d$ lines are not included in this compilation because they do not give the correct $3p$ splitting.

The ionization energy was calculated by Cowan[20] as 1601 ± 16 eV.

Mo XXXI (Mg Sequence)

Ground state: $1s^22s^22p^63s^2\ ^1S_0$

The resonance line $3s^2\ ^1S_0$–$3s3p\ ^1P^\circ_1$ at 115.991 Å was first reported at 117.0 ± 0.5 Å in a tokamak discharge by Hinnov.[54] Burkhalter *et al.*[17] observed two other lines within a few angstroms of Hinnov's wavelength and identified as the $3s3p\ ^1P^\circ_1$–$3s3d\ ^1D_2$ and $3s3p\ ^3P^\circ_2$–$3s3d\ ^3D_3$ lines by means of isoelectronic extrapolation and comparisons with theoretical calculations. Similar observations were also made by Mansfield *et al.*[74] and Reader.[88] Wavelength values of Reader were adopted in the present compilation. The uncertainty of the wavelengths is ± 0.015 Å.

The $3s^2\ ^1S_0$–$3s4p\ ^3P^\circ_1$ and $^1P^\circ_1$ lines at 14.928 and 14.745 Å were identified by Burkhalter *et al.*[17] The latter was observed by Schwob *et al.*[96] and Mansfield *et al.*[74] Identification of the $3s3d$–$3s4f$ array was also given by Burkhalter *et al.*[17]

The intercombination line $3s^2\ ^1S_0$–$3s3p\ ^3P^\circ_1$ at 190.5 ± 0.2 Å and the two magnetic dipole lines $3s3p\ ^3P^\circ_1$–$^3P^\circ_2$ and $^3P^\circ_2$–$^1P^\circ_1$ at 577.5 ± 0.3 Å and 609.8 ± 0.3 Å were identified in tokamak discharges by Finkenthal *et al.*[48] and Denne *et al.*[36] The latter is classified tentatively by Kaufman and Sugar.[101]

The ionization energy was calculated by Cowan[20] as 1726 ± 17 eV.

Mo XXXII (Na Sequence)

Ground state: $1s^22s^22p^63s\ ^2S_{1/2}$

The first measurement was reported by Hinnov,[54] who identified the two resonance lines $3s\ ^2S_{1/2}$–$3p\ ^2P^\circ_{1/2,3/2}$ at 177 and 129 Å. Schwob *et al.*[96] observed the $3d\ ^2D_{5/2}$–$4f\ ^2F^\circ_{7/2}$, $3p\ ^2P^\circ_{3/2}$–$4s\ ^2S_{1/2}$, and $3s\ ^2S_{1/2}$–$4p\ ^2P^\circ_{3/2}$ transitions.

Burkhalter *et al.*[17] remeasured wavelengths of the 3*s*–4*p*,3*p*–4*s*,4*d* and 5*d*,3*d*–4*p*,4*f* and 5*f*,3*s*–3*p*, and 3*p*–3*d* transitions in the 10–19 Å and 100–177 Å ranges, and established 17 levels on the basis of 22 transitions at about the same time Mansfield *et al.*[74] reported similar results with the addition of 3*d*–6*f* and 3*s*–5*p*. We give their measurements, except for the 3–3 transitions which are from Burkhalter *et al.* The uncertainty of the wavelengths is ± 0.010 Å.

Edlén[41] derived a value for the ionization energy of 1791.0 ± 0.5 eV from a polarization analysis of the *nf* levels.

Mo XXXIII (Ne Sequence)

Ground state: $1s^22s^22p^6\ ^1S_0$

Aglitskii *et al.*[2] measured wavelengths in the range of 4–5.5 Å and identified six lines due to the $2s^22p^6$–$2s^22p^53s$, $2s^22p^53d$, and $2s2p^63p$ transitions. In a tokamak spectrum the $2p^6\ ^1S_0$–$2p^53d\ ^3D^\circ_1$ and $2p^53s\ ^{1,3}P^\circ_1$ lines were classified by Schwob *et al.*[96]

Improved wavelength measurements were reported for the $2p^6$–$2p^53s$ transitions by Gordon *et al.*[52] and for the $2s^22p^6$–$2s^22p^53d$ and $2s2p^63p$ transitions by Aglitskii *et al.*[3] These wavelength data are adopted in this compilation.

Wavelengths of the 2*p*–4*s* and 4*d* and 2*p*–*nd* ($n = 5$ to 7) transitions were reported by Burkhalter *et al.*[16,18]

The ionization energy was calculated by Cowan[20] as 4257 ± 42 eV.

Mo XXXIV (F Sequence)

Ground state: $1s^22s^22p^5\ ^2P^\circ_{3/2}$

Boiko *et al.*[14] identified the $2p^5$–$2p^43d$ array in the wavelength range of 4.472–4.536 Å with an uncertainty of ± 0.002 Å.

Reader *et al.*[86] predicted the wavelength of the magnetic dipole transition $2s^22p^5\ ^2P^\circ_{3/2}$–$^2P^\circ_{1/2}$ (denoted by "P" in the wavelength table) with the observation of the $2s^22p^5\ ^2P^\circ$–$2s2p^6$ lines. Their wavelength uncertainty is ± 0.015 Å.

The ionization energy was calculated by Cowan[20] as 4430 ± 44 eV.

Mo XL (Li Sequence)

Ground state: $1s^22s\ ^2S_{1/2}$

Observations of four x-ray lines by Beier and Kunze[10] at 0.6859, 0.6885, 0.6893, and 0.6912 Å are attributed to transitions from doubly excited configurations. Three of these are multiply classified.

Calculated energy levels for the $1s^2\ n\ell$ configurations, $n = 2$–5 and $\ell = s, p$, and d, were performed by Vainshstein and Safronova.[106] The ionization energy was derived from the calculated *ns* levels.

Mo XLI (He Sequence)

Ground state: $1s^2\ ^1S$

Beier and Kunze[10] observed three lines of the $1s^2$–$1s2p$ multiplet with an uncertainty of ± 0.0002 Å. They differ at most by 0.005 Å from the calculated values of Vainshstein and Safronova (1985),[106] estimate their own relative uncertainty to be one part in 10^4.

The ionization energy was calculated by Safronova.[93]

M XLII (H Sequence)

Ground state: $1s\ ^2S_{1/2}$

Turechek and Kunze[105] measured the $1s\ ^2S$–$2p$, $3p$ transitions with an accuracy of ± 0.0005 and ± 0.001 Å, respectively. Binding energies were calculated by Erickson.[45] We adopted his value for the ionization energy.

4. Explanation of Tables of Spectroscopic Data

IP	Ionization potential of the tabulated ions in cm^{-1} and eV.
Wavelength	Wavelengths in vacuum of observed spectral lines in Angstroms. Published wavelengths in air are converted to vacuum.
Classification	Customary spectroscopic designation for lower (first) and upper levels generating the spectral lines; electronic configuration followed by the term in *LS*-, *jj*-, or *j*ℓ-coupling notation. The superscript ° on the term indicates odd parity. Terms enclosed in parentheses refer to the parent state.
Energy levels	Energy levels (in cm^{-1}) for lower (first) and upper levels of spectral lines.
Int	Approximate intensity of the spectral line, generally estimated from the blackness (or density) of the line on photographic plate.
References	The numbers are given in the bibliographic listing following the tables. When more than one reference for a line is given, that reference from which the values of wavelength and intensity values are adopted is identified with a superscript ° on the number.

5. Spectroscopic Data for Mo VI–Mo XLII

Mo VI (Rb-Sequence) IP = 555132 ± 2 cm^{-1} (68.8284 ± 0.0002 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
6337.79	$4f\ ^2F^\circ_{5/2}$	$5d\ ^2D_{3/2}$	267048.8	282827.1	5	42
6190.38	7/2	5/2	267458.4	283612.5	11	42
6037.29	5/2	5/2	267048.8	283612.5	0.75	42
5450.33	$5f\ ^2F^\circ_{7/2}$	$6d\ ^2D_{5/2}$	368206.3	386553.8	7.5	42
5278.32	$7i\ ^2I$	$8k\ ^2K^\circ$	474436.4	493381.8	45	42
5248.91	$7h\ ^2H^\circ$	$8i\ ^2I$	474299.7	493351.3	35	42
5044.96	$7g\ ^2G_{9/2}$	$8h\ ^2H^\circ_{11/2}$	473427.7	493249.5	10	42
5044.18	7/2	9/2	473424.6	493249.5	8.5	42
4274.15	$7p\ ^2P^\circ_{3/2}$	$7d\ ^2D_{3/2}$	416070.2	439466.6	8	42
4233.23	3/2	5/2	416070.2	439692.8	100	42
4063.19	1/2	3/2	414855.4	439466.6	60	42
3736.38	$6s\ ^2S_{1/2}$	$6p\ ^2P^\circ_{1/2}$	313809.1	340572.9	90	42
3477.60	1/2	3/2	313809.1	342564.6	200	42
3485.77	$6d\ ^2D_{3/2}$	$7p\ ^2P^\circ_{1/2}$	386167.3	414855.4	13	42
3387.95	5/2	3/2	386553.8	416070.2	20	42
3344.16	3/2	3/2	386167.3	416070.2	1.5	42
3409.58	$6h\ ^2H^\circ$	$7i\ ^2I$	445107.3	474436.4	200	42
3324.70	$5f\ ^2F^\circ_{5/2}$	$5g\ ^2G_{7/2}$	365106.6	395184.6	22	42
3294.24	$6g\ ^2G_{9/2}$	$7h\ ^2H^\circ_{11/2}$	443943.7	474299.7	50	42
3293.95	7/2	9/2	443941.0	474299.7	50	42
3134.23	$7i\ ^2I$	$9k\ ^2K^\circ$	474436.4	506342.2	10	42
3123.34	$7h\ ^2H^\circ$	$9i\ ^2I$	474299.7	506316.7	10	42
2520.90	$4p^54d^2(^1G)\ ^2G^\circ_{7/2}$	$4p^66d\ ^2D_{5/2}$	346887	386553.8	16	102
2352.55	$6f\ ^2F^\circ_{7/2}$	$7g\ ^2G_{9/2}$	430920.6	473427.7	8	42
2316.01	$4p^54d^2(^3P)\ ^2D^\circ_{3/2}$	$4p^66d\ ^2D_{5/2}$	343373	386553.8	13	102
2305.01	$6d\ ^2D_{3/2}$	$6f\ ^2F^\circ_{5/2}$	386167.3	429551.1	30	42
2253.94	5/2	7/2	386553.8	430920.6	50	42
2293.43	$6p\ ^2P^\circ_{3/2}$	$6d\ ^2D_{3/2}$	342564.6	386167.3	10	42
2273.28	3/2	5/2	342564.6	386553.8	50	42
2193.25	1/2	3/2	340572.9	386167.3	40	42
2005.48	$4p^54d^2(^3P)\ ^4D^\circ_{1/2}$	$4p^66d\ ^2D_{3/2}$	336331	386167.3	2	102
1872.92	3/2	3/2	332775	386167.3	2	102
1749.01	7/2	5/2	329379	386553.8	17	102
2003.14	$5g\ ^2G$	$6h\ ^2H^\circ$	395185.7	445107.3	50	42
1869.03	$4p^65d\ ^2D_{3/2}$	$4p^54d^2(^3P)\ ^4D^\circ_{1/2}$	282827.1	336331	5	102
1820.76	$7p\ ^2P^\circ_{3/2}$	$8d\ ^2D_{5/2}$	416070.2	470991.4	4	42
1785.88	1/2	3/2	414855.4	470850.0	4	42

Mo VI (Rb-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
1731.73	$5d\ ^2D_{3/2}$	$6p\ ^2P^\circ_{1/2}$	282827.1	340572.9	50	42
1696.29	5/2	3/2	283612.5	342564.6	75	42
1673.99	3/2	3/2	282827.1	342564.6	30	42
1718.07	$6p\ ^2P^\circ_{3/2}$	$7s\ ^2S_{1/2}$	342564.6	400769.5	70	42
1661.22	1/2	1/2	340572.9	400769.5	40	42
1673.43	$4p^65d\ ^2D_{5/2}$	$4p^54d^2(^3P)\ ^2D^\circ_{3/2}$	283612.5	343373	2	102
1651.73	3/2	3/2	282827.1	343373	1	102
1600.14	$4p^65d\ ^2D_{3/2}$	$4p^54d^2(^3P)\ ^2S^\circ_{1/2}$	282827.1	345325	3	102
1595.45	$5s\ ^2S_{1/2}$	$5p\ ^2P^\circ_{1/2}$	119727.3	182405.5	70	42
1479.17	1/2	3/2	119727.3	187332.8	90	42
1589.34	$4p^65d\ ^2D_{5/2}$	$4p^54d^2(^3P)\ ^4S^\circ_{3/2}$	283612.5	346535	4	102
1569.70	3/2	3/2	282827.1	346535	2	102
1527.96	$4p^65d\ ^2D_{3/2}$	$4p^54d^2(^3P)\ ^2D^\circ_{5/2}$	282827.1	348274	9	102
1504.57	$4p^54d^2(^1D)\ ^2F^\circ_{7/2}$	$4p^66d\ ^2D_{5/2}$	320087	386553.8	2	102
1476.52	$4p^54d^2(^3F)\ ^2F^\circ_{7/2}$	$4p^67g\ ^2G_{7/2}$	405696	473424.6	6	102
1453.57	$4p^54d^2(^3F)\ ^4F^\circ_{5/2}$	$4p^66d\ ^2D_{3/2}$	317375	386167.3	4	102
1344.92	7/2	5/2	312200	386553.8	24	102
1426.85	$4p^54d^2(^1G)\ ^2F^\circ_{7/2}$	$4p^66d\ ^2D_{5/2}$	316473	386553.8	16	102
1392.86	$4p^65d\ ^2D_{5/2}$	$4p^54d^2(^1S)\ ^2P^\circ_{3/2}$	283612.5	355407	5	102
1368.54	$4p^54d^2(^3F)\ ^2F^\circ_{5/2}$	$4p^67g\ ^2G_{7/2}$	400354	473424.6	2	102
1331.62	$4p^54d^2(^1D)\ ^2F^\circ_{7/2}$	$4p^65g\ ^2G_{7/2}$	320087	395184.6	13	102
1320.33	$5f\ ^2F^\circ_{7/2}$	$6g\ ^2G_{9/2}$	368206.3	443943.7	10	42
1268.51	5/2	7/2	365106.6	443941.0	10	42
1264.04	$5g\ ^2G$	$7h\ ^2H^\circ$	395185.7	474299.7	15	42
1315.54	$4p^54d^2(^1D)\ ^2D^\circ_{5/2}$	$4p^66d\ ^2D_{5/2}$	310540	386553.8	2	102
1255.58	$4p^54d^2(^3P)\ ^4P^\circ_{3/2}$	$4p^66d\ ^2D_{5/2}$	306909	386553.8	2	102
1197.79	5/2	3/2	302680	386167.3	1	102
1227.07	$5d\ ^2D_{5/2}$	$5f\ ^2F^\circ_{5/2}$	283612.5	365106.6	15	42
1215.38	3/2	5/2	282827.1	365106.6	40	42
1182.14	5/2	7/2	283612.5	368206.3	60	42
1202.39	$4p^54d^2(^3F)\ ^4G^\circ_{5/2}$	$4p^66d\ ^2D_{3/2}$	303004	386167.3	4	102
1196.90	5/2	5/2	303004	386553.8	2	102
1195.03	7/2	5/2	302871	386553.8	2	102
1079.41	$4p^54d^2(^3F)\ ^4D^\circ_{7/2}$	$4p^66d\ ^2D_{5/2}$	293911	386553.8	2	102
1047.18	$5p\ ^2P^\circ_{3/2}$	$5d\ ^2D_{3/2}$	187332.8	282827.1	35	42
1038.64	3/2	5/2	187332.8	283612.5	80	42
995.800	1/2	3/2	182405.5	282827.1	70	42°,104
1019.76	$5g\ ^2G$	$8h\ ^2H^\circ$	395185.7	493249.5	2	42

Mo VI (Rb-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
1011.20	$6p\ ^2P^\circ_{1/2}$	$7d\ ^2D_{3/2}$	340572.9	439466.6	2	42
972.930	$5f\ ^2F^\circ_{7/2}$	$8d\ ^2D_{5/2}$	368206.3	470991.4	4	42
945.665	5/2	3/2	365106.6	470850.0	4	42
944.410	5/2	5/2	365106.6	470991.4	3	42
950.816	$6p\ ^2P^\circ_{3/2}$	$8s\ ^2S_{1/2}$	342564.6	447738.6	10	42
933.125	1/2	1/2	340572.9	447738.6	4	42
950.335	$5f\ ^2F^\circ_{7/2}$	$7g\ ^2G_{9/2}$	368206.3	473427.7	10	42
850.799	$4p^65d\ ^2D_{3/2}$	$4p^54d^2(^3F)\ ^2F^\circ_{5/2}$	282827.1	400354	8	102
819.131	5/2	7/2	283612.5	405696	16	102
839.655	$4f\ ^2F^\circ_{7/2}$	$6d\ ^2D_{5/2}$	267458.4	386553.8	6	42
807.446	$4p^54d^2(^1D)\ ^2F^\circ_{7/2}$	$4p^66g\ ^2G_{7/2}$	320087	443941.0	8	102
804.233	$5f\ ^2F^\circ_{7/2}$	$8g\ ^2G_{9/2}$	368206.3	492548	6	42
784.690	5/2	7/2	365106.6	492545	3	42
792.475	$4p^65d\ ^2D_{3/2}$	$4p^54d^2(^3P)\ ^2P^\circ_{1/2}$	282827.1	409020	8	102
790.659	$5p\ ^2P^\circ_{3/2}$	$6s\ ^2S_{1/2}$	187332.8	313809.1	75	27,42°,104
761.020	1/2	1/2	182405.5	313809.1	50	27,42°,104
782.912	$4f\ ^2F^\circ_{7/2}$	$5g\ ^2G_{9/2}$	267458.4	395186.7	75	42
780.429	5/2	7/2	267048.8	395184.6	60	42
778.670	$6p\ ^2P^\circ_{3/2}$	$8d\ ^2D_{5/2}$	342564.6	470991.4	8	42
767.595	1/2	3/2	340572.9	470850.0	3	42
757.396	$5d\ ^2D_{3/2}$	$7p\ ^2P^\circ_{1/2}$	282827.1	414855.4	5	42
750.522	3/2	3/2	282827.1	416070.2	5	42
736.220	$4p^65d\ ^2D_{3/2}$	$4p^54d^2(^3F)\ ^2D^\circ_{5/2}$	282827.1	418661	9	102
702.548	$6s\ ^2S_{1/2}$	$8p\ ^2P^\circ_{1/2}$	313809.1	456150.0	5	42
699.056	1/2	3/2	313809.1	456856.0	8	42
685.219	$5d\ ^2D_{5/2}$	$6f\ ^2F^\circ_{5/2}$	283612.5	429551.1	5	42
681.574	3/2	5/2	282827.1	429551.1	25	42
678.871	5/2	7/2	283612.5	430920.6	30	42
580.616	$4f\ ^2F^\circ_{7/2}$	$7d\ ^2D_{5/2}$	267458.4	439692.8	6	42
577.237	$5d\ ^2D_{5/2}$	$8p\ ^2P^\circ_{3/2}$	283612.5	456856.0	8	42
576.951	3/2	1/2	282827.1	456150.0	5	42
566.620	$4f\ ^2F^\circ_{7/2}$	$6g\ ^2G_{9/2}$	267458.4	443943.7	60	42
565.317	5/2	7/2	267048.8	443941.0	50	42
548.229	$4d\ ^2D_{3/2}$	$5p\ ^2P^\circ_{1/2}$	0	182405.5	80	27,42°,47,104
541.286	5/2	3/2	2584.3	187332.8	100	27,42°,47,104
533.809	3/2	3/2	0	187332.8	40	27,42°,47,104
534.265	$4p^65s\ ^2S_{1/2}$	$4p^54d^2(^3P)\ ^4P^\circ_{3/2}$	119727.3	306909	13	102
501.944	$5p\ ^2P^\circ_{3/2}$	$6d\ ^2D_{5/2}$	187332.8	386553.8	20	42
490.763	1/2	3/2	182405.5	386167.3	15	42

Mo VI (Rb-Sequence) — Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
491.314	$4f\ ^2F^\circ_{7/2}$	$8d\ ^2D_{5/2}$	267458.4	470991.4	5	42
490.680	5/2	3/2	267048.8	470850.0	4	42
485.511	$4f\ ^2F^\circ_{7/2}$	$7g\ ^2G_{9/2}$	267458.4	473427.7	55	42
484.553	5/2	7/2	267048.8	473424.6	30	42
477.982	$4p^65s\ ^2S_{1/2}$	$4p^54d^2(^1D)\ ^2P^\circ_{3/2}$	119727.3	328933	13	102
468.533	$5p\ ^2P^\circ_{3/2}$	$7s\ ^2S_{1/2}$	187332.8	400769.5	50	42
457.963	1/2	1/2	182405.5	400769.5	30	42
452.800	$5s\ ^2S_{1/2}$	$6p\ ^2P^\circ_{1/2}$	119727.3	340572.9	50	42
448.754	1/2	3/2	119727.3	342564.6	80	42
447.130	$4p^65s\ ^2S_{1/2}$	$4p^54d^2(^3P)\ ^2D^\circ_{3/2}$	119727.3	343373	6	102
444.288	$4f\ ^2F^\circ_{7/2}$	$8g\ ^2G_{9/2}$	267458.4	492548	8	42
396.628	$5p\ ^2P^\circ_{3/2}$	$7d\ ^2D_{3/2}$	187332.8	439466.6	1	42
396.264	3/2	5/2	187332.8	439692.8	8	42
384.015	$5p\ ^2P^\circ_{3/2}$	$8s\ ^2S_{1/2}$	187332.8	447738.6	15	42
376.873	1/2	1/2	182405.5	447738.6	10	42
378.117	$4d\ ^2D_{5/2}$	$4f\ ^2F^\circ_{5/2}$	2584.3	267048.8	30	27,42°
377.534	5/2	7/2	2584.3	267458.4	90	27,42°,47
374.463	3/2	5/2	0	267048.8	80	27,42°
352.541	$5p\ ^2P^\circ_{3/2}$	$8d\ ^2D_{5/2}$	187332.8	470991.4	4	42
346.774	$4p^64d\ ^2D_{5/2}$	$4p^54d^2(^3F)\ ^4D^\circ_{3/2}$	2584.3	290959	2	102
346.072	5/2	5/2	2584.3	291557	19	102
345.618	3/2	1/2	0	289337	16	102
343.687	3/2	3/2	0	290959	16	102
343.268	5/2	7/2	2584.3	293911	22	102
342.985	3/2	5/2	0	291557	22	102
338.831	$5s\ ^2S_{1/2}$	$7p\ ^2P^\circ_{1/2}$	119727.3	414855.4	8	42
337.450	1/2	3/2	119727.3	416070.2	15	42
333.229	$4p^64d\ ^2D_{5/2}$	$4p^54d^2(^3P)\ ^4P^\circ_{5/2}$	2584.3	302680	8	102
330.381	3/2	5/2	0	302680	19	102
328.593	5/2	3/2	2584.3	306909	22	102
325.832	3/2	3/2	0	306909	28	102
323.332	3/2	1/2	0	309280	7	102
333.015	$4p^64d\ ^2D_{5/2}$	$4p^54d^2(^3F)\ ^4G^\circ_{7/2}$	2584.3	302871	31	102
332.871	5/2	5/2	2584.3	303004	6	102
330.027	3/2	5/2	0	303004	16	102
325.510	$4p^64d\ ^2D_{5/2}$	$4p^54d^2(^1D)\ ^2D^\circ_{3/2}$	2584.3	309788	7	102
324.721	5/2	5/2	2584.3	310540	8	102
322.808	3/2	3/2	0	309788	13	102
322.020	3/2	5/2	0	310540	23	102
322.981	$4p^64d\ ^2D_{5/2}$	$4p^54d^2(^3F)\ ^4F^\circ_{7/2}$	2584.3	312200	40	102
318.219	5/2	3/2	2584.3	316835	2	102
317.670	5/2	5/2	2584.3	317375	16	102
315.620	3/2	3/2	0	316835	19	102
315.085	3/2	5/2	0	317375	19	102

Mo VII (Kr-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
1417.16	$4p^5(^2P^\circ_{3/2})6p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})6d\ [\frac{3}{2}]^\circ_1$	746401	816964	6	103
1395.28	1	1	745292	816964	1	103
1408.72	$4p^5(^2P^\circ_{3/2})5s\ [\frac{3}{2}]^\circ_2$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_2$	477429	548414	2	103
1356.90	2	3	477429	551129	58	103
1404.04	$4p^5(^2P^\circ_{3/2})6p\ [\frac{5}{2}]_3$	$4p^5(^2P^\circ_{3/2})7s\ [\frac{3}{2}]^\circ_2$	744128	815350	20	103
1398.41	2	2	743840	815350	1	103
1402.52	$4p^5(^2P^\circ_{3/2})6p\ [\frac{5}{2}]_3$	$4p^5(^2P^\circ_{1/2})6d\ [\frac{3}{2}]^\circ_2$	744128	815427	1	103
1367.51	2	1	743840	816964	8	103
1359.91	$4p^5(^2P^\circ_{3/2})5s\ [\frac{3}{2}]^\circ_1$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_1$	481294	554828	2	103
1311.81	1	2	481294	557526	32	103
1291.99	2	1	477429	554828	2	103
1248.47	2	2	477429	557526	5	103
1355.49	$4p^5(^2P^\circ_{3/2})5d\ [\frac{5}{2}]^\circ_2$	$4p^5(^2P^\circ_{3/2})6p\ [\frac{1}{2}]_1$	665682	739454	17	103
1354.15	$4p^5(^2P^\circ_{1/2})5d\ [\frac{3}{2}]^\circ_1$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_1$	689788	763636	4	103
1248.91	1	2	689788	769856	5	103
1194.05	2	2	686105	769856	64	103
1347.54	$4p^5(^2P^\circ_{1/2})5s\ [\frac{1}{2}]^\circ_1$	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_1$	502931	577141	8	103
1307.11	0	1	500637	577141	31	103
1331.62	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_1$	$4p^5(^2P^\circ_{1/2})7s\ [\frac{1}{2}]^\circ_0$	763636	838733	8	103
1320.90	1	1	763636	839344	2	103
1317.61	$4p^5(^2P^\circ_{3/2})6p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})7s\ [\frac{3}{2}]^\circ_2$	739454	815350	2	103
1299.28	1	1	739454	816418	2	103
1314.30	$4p^5(^2P^\circ_{1/2})5d\ [\frac{3}{2}]^\circ_1$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{1}{2}]_1$	689788	765875	2	103
1228.97	1	0	689788	771155	17	103
1294.56	$4p^5(^2P^\circ_{3/2})5d\ [\frac{5}{2}]^\circ_3$	$4p^5(^2P^\circ_{3/2})6p\ [\frac{5}{2}]_3$	666881	744128	19	103
1279.43	2	2	665682	743840	19	103
1293.10	$4p^5(^2P^\circ_{3/2})5d\ [\frac{3}{2}]^\circ_1$	$4p^5(^2P^\circ_{3/2})6p\ [\frac{3}{2}]_2$	669065	746401	4	103
1189.17	2	1	661198	745292	3	103
1173.66	2	2	661198	746401	7	103
1277.85	$4p^5(^2P^\circ_{1/2})5d\ [\frac{5}{2}]^\circ_2$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_1$	685377	763636	14	103
1257.53	$4p^5(^2P^\circ_{3/2})5d\ [\frac{5}{2}]^\circ_3$	$4p^5(^2P^\circ_{3/2})6p\ [\frac{3}{2}]_2$	666881	746401	19	103
1256.14	2	1	665682	745292	8	103
1253.62	$4p^5(^2P^\circ_{1/2})5d\ [\frac{3}{2}]^\circ_2$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{1}{2}]_1$	686105	765875	14	103
1242.22	$4p^5(^2P^\circ_{1/2})5d\ [\frac{5}{2}]^\circ_2$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{1}{2}]_1$	685377	765875	2	103
1240.03	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{1}{2}]^\circ_0$	577141	657783	4	103
1224.48	$4p^5(^2P^\circ_{3/2})5d\ [\frac{1}{2}]^\circ_0$	$4p^5(^2P^\circ_{3/2})6p\ [\frac{1}{2}]_1$	657783	739454	4	103
1222.20	$4p^5(^2P^\circ_{3/2})5d\ [\frac{7}{2}]^\circ_3$	$4p^5(^2P^\circ_{3/2})6p\ [\frac{5}{2}]_2$	662019	743840	37	103
1217.91	3	3	662019	744128	17	103
1204.31	4	3	661091	744128	85	103
1213.59	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{1}{2}]^\circ_1$	576592	658992	1	103

Mo VII (Kr-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
1210.05	$4p^5(^2P^\circ_{3/2})5d\ [\frac{3}{2}]^\circ_2$	$4p^5(^2P^\circ_{3/2})6p\ [\frac{5}{2}]_2$	661198	743840	2	103
1205.86	2	3	661198	744128	2	103
1201.21	$4p^5(^2P^\circ_{1/2})5d\ [\frac{5}{2}]^\circ_3$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_2$	686613	769856	9	103
1183.66	2	2	685377	769856	16	103
1170.56	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{7}{2}]^\circ_3$	576592	662019	65	103
1151.96	$4p^5(^2P^\circ_{3/2})6p\ [\frac{1}{2}]_0$	$4p^5(^2P^\circ_{1/2})7s\ [\frac{1}{2}]^\circ_1$	752533	839344	5	103
1007.27	1	0	739454	838733	2	103
1129.43	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{5}{2}]^\circ_2$	577141	665682	7	103
1122.43	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{5}{2}]^\circ_2$	576592	665682	2	103
1107.56	2	3	576592	666881	1	103
1113.19	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_1$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{3}{2}]^\circ_2$	571364	661198	8	103
1081.43	2	1	576592	669065	14	103
1023.55	1	1	571364	669065	2	103
1087.84	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{3}{2}]^\circ_1$	577141	669065	6	103
1075.93	$4p^5(^2P^\circ_{3/2})6p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})7s\ [\frac{1}{2}]^\circ_1$	746401	839344	9	103
1070.22	1	0	745292	838733	2	103
1063.23	1	1	745292	839344	2	103
1064.60	$4p^5(^2P^\circ_{3/2})5s\ [\frac{3}{2}]^\circ_2$	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_1$	477429	571364	3	103
1008.40	2	2	477429	576592	4	103
1020.89	$4p^5(^2P^\circ_{3/2})5d\ [\frac{5}{2}]^\circ_2$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_1$	665682	763636	2	103
1002.90	$4p^5(^2P^\circ_{3/2})5s\ [\frac{3}{2}]^\circ_2$	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_1$	477429	577141	5	103
967.729	1	0	481294	584632	5	103
992.123	$4p^5(^2P^\circ_{3/2})5d\ [\frac{3}{2}]^\circ_1$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_2$	669065	769856	17	103
976.168	2	1	661198	763636	9	103
920.332	2	2	661198	769856	4	103
979.551	$4p^5(^2P^\circ_{3/2})5d\ [\frac{3}{2}]^\circ_1$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{1}{2}]_0$	669065	771155	9	103
971.279	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_1$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{1}{2}]^\circ_0$	554828	657783	14	103
955.632	$4p^5(^2P^\circ_{3/2})5d\ [\frac{1}{2}]^\circ_1$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_1$	658992	763636	1	103
902.033	1	2	658992	769856	7	103
953.098	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})8s\ [\frac{3}{2}]^\circ_2$	769856	874776	6	103
899.737	1	2	763636	874776	2	103
950.955	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_0$	$4p^5(^2P^\circ_{1/2})5d\ [\frac{3}{2}]^\circ_1$	584632	689788	6	103
887.727	1	1	577141	689788	17	103
940.137	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_1$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{3}{2}]^\circ_2$	554828	661198	2	103
896.522	2	1	557526	669065	2	103
875.397	1	1	554828	669065	7	103
935.548	$4p^5(^2P^\circ_{3/2})5d\ [\frac{1}{2}]^\circ_1$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{1}{2}]_1$	658992	765875	6	103
925.143	0	1	657783	765875	6	103
891.539	1	0	658992	771155	4	103
927.326	$4p^5(^2P^\circ_{3/2})5d\ [\frac{7}{2}]^\circ_3$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_2$	662019	769856	5	103

Mo VII (Kr-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
924.553	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{5}{2}]^\circ_2$	557526	665682	8	103
923.944	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{1/2})5d\ [\frac{5}{2}]^\circ_2$	577141	685377	7	103
918.270	$4p^5(^2P^\circ_{1/2})6p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})8s\ [\frac{3}{2}]^\circ_2$	765875	874776	2	103
916.426	1	1	765875	874999	4	103
917.697	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{1/2})5d\ [\frac{3}{2}]^\circ_2$	577141	686105	7	103
913.131	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})5d\ [\frac{3}{2}]^\circ_2$	576592	686105	4	103
883.465	2	1	576592	689788	1	103
871.525	1	2	571364	686105	2	103
909.395	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_3$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{7}{2}]^\circ_4$	551129	661091	49	103
901.838	3	3	551129	662019	30	103
880.231	2	3	548414	662019	64	103
908.920	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})5d\ [\frac{5}{2}]^\circ_3$	576592	686613	5	103
877.066	1	2	571364	685377	2	103
908.477	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_3$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{3}{2}]^\circ_2$	551129	661198	8	103
886.619	2	2	548414	661198	8	103
874.934	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{1}{2}]^\circ_0$	543485	657783	4	103
872.977	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_3$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{5}{2}]^\circ_2$	551129	665682	4	103
863.914	3	3	551129	666881	55	103
852.735	2	2	548414	665682	21	103
849.506	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{3}{2}]^\circ_2$	543485	661198	20	103
796.322	1	1	543485	669065	4	103
843.281	$4s^24p^54d\ ^1P^\circ_1$	$4s4p^64d\ ^3D_1$	417544	536131	6	103
839.157	1	2	417544	536713	8	103
818.318	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{5}{2}]^\circ_2$	543485	665682	3	103
802.016	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_0$	$4p^5(^2P^\circ_{1/2})5d\ [\frac{3}{2}]^\circ_1$	565106	689788	4	103
701.133	1	2	543485	686105	6	103
794.027	$4p^54d\ ^1P^\circ_1$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	417544	543485	14	103
780.064	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})8s\ [\frac{1}{2}]^\circ_1$	769856	898050	2	103
777.727	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})5d\ [\frac{3}{2}]^\circ_2$	557526	686105	2	103
740.922	1	1	554828	689788	17	103
777.595	$4p^5(^2P^\circ_{3/2})6p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})8s\ [\frac{3}{2}]^\circ_1$	746401	874999	6	103
770.974	1	1	745292	874999	6	103
774.669	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})5d\ [\frac{5}{2}]^\circ_3$	557526	686613	9	103
765.976	1	2	554828	685377	3	103
765.427	$4p^5(^2P^\circ_{3/2})6p\ [\frac{5}{2}]_3$	$4p^5(^2P^\circ_{3/2})8s\ [\frac{3}{2}]^\circ_2$	744128	874776	15	103
764.118	$4p^54d\ ^1P^\circ_1$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_2$	417544	548414	6	103
758.545	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})6s\ [\frac{3}{2}]^\circ_2$	577141	708975	8	103
752.320	1	1	577141	710068	4	103

Mo VII (Kr-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
756.566	$4p^5(^2P^\circ_{1/2})6p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{1/2})8s\ [\frac{1}{2}]^\circ_1$	765875	898050	6	103
755.423	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})6s\ [\frac{3}{2}]^\circ_2$	576592	708975	5	103
749.169	2	1	576592	710068	7	103
726.710	1	2	571364	708975	8	103
720.933	1	1	571364	710068	2	103
744.903	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_3$	$4p^5(^2P^\circ_{1/2})5d\ [\frac{5}{2}]^\circ_2$	551129	685377	82	103
738.105	3	3	551129	686613	8	103
723.573	2	3	548414	686613	7	103
738.989	$4p^5(^2P^\circ_{3/2})6p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})8s\ [\frac{3}{2}]^\circ_2$	739454	874776	5	103
737.740	1	1	739454	874999	2	103
730.776	$4s^24p^54d\ ^1P^\circ_1$	$4s4p^64d\ ^1D_2$	417544	554385	8	103
728.418	$4p^54d\ ^1P^\circ_1$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_1$	417544	554828	4	103
714.367	1	2	417544	557526	4	103
709.525	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})9s\ [\frac{3}{2}]^\circ_1$	769856	910798	6	103
704.743	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{1/2})5d\ [\frac{5}{2}]^\circ_2$	543485	685377	5	103
690.024	$4p^5(^2P^\circ_{1/2})6p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})9s\ [\frac{3}{2}]^\circ_1$	765875	910798	6	103
689.826	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_0$	$4p^5(^2P^\circ_{3/2})6s\ [\frac{3}{2}]^\circ_1$	565106	710068	17	103
600.305	1	1	543485	710068	32	103
676.010	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_0$	$4p^5(^2P^\circ_{1/2})6s\ [\frac{1}{2}]^\circ_1$	584632	732560	17	103
647.408	1	0	577141	731603	6	103
643.416	1	1	577141	732560	9	103
655.549	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})6s\ [\frac{3}{2}]^\circ_1$	557526	710068	85	103
648.477	$4p^5(^2P^\circ_{3/2})6p\ [\frac{5}{2}]_2$	$4p^5(^2P^\circ_{1/2})8s\ [\frac{1}{2}]^\circ_1$	743840	898050	6	103
628.745	$4p^54d\ ^1P^\circ_1$	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	417544	576592	7	103
624.072	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_1$	$4p^5(^2P^\circ_{1/2})6s\ [\frac{1}{2}]^\circ_0$	571364	731603	16	103
620.344	1	1	571364	732560	14	103
622.790	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_2$	$4p^5(^2P^\circ_{3/2})6s\ [\frac{3}{2}]^\circ_2$	548414	708975	2	103
607.344	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})10s\ [\frac{1}{2}]^\circ_1$	769856	934507	6	103
598.944	$4p^5(^2P^\circ_{3/2})6p\ [\frac{5}{2}]_2$	$4p^5(^2P^\circ_{3/2})9s\ [\frac{3}{2}]^\circ_1$	743840	910798	8	103
571.341	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})6s\ [\frac{1}{2}]^\circ_1$	557526	732560	8	103
565.697	1	0	554828	731603	5	103
562.648	1	1	554828	732560	7	103
534.812	$4s^24p^54d\ ^1F^\circ_3$	$4s4p^64d\ ^3D_3$	351406	538386	8	103
531.631	$4p^5(^2P^\circ_{3/2})6p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})10s\ [\frac{1}{2}]^\circ_1$	746401	934507	9	103
531.574	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{1/2})6s\ [\frac{1}{2}]^\circ_0$	543485	731603	8	103
524.459	$4p^5(^2P^\circ_{3/2})6p\ [\frac{5}{2}]_2$	$4p^5(^2P^\circ_{1/2})10s\ [\frac{1}{2}]^\circ_1$	743840	934507	2	103

Mo VII (Kr-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
512.810	$4s^24p^54d\ ^3D^\circ_1$	$4s4p^64d\ ^3D_2$	341710	536713	4	103
492.720	3	3	335441	538386	50	103
511.822	$4s^24p^54d\ ^1D^\circ_2$	$4s4p^64d\ ^3D_1$	340749	536131	6	103
505.976	2	3	340749	538386	16	103
508.767	$4p^54d\ ^3D^\circ_2$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	346922	543485	21	103
495.611	1	1	341710	543485	8	103
447.644	1	0	341710	565106	29	103
500.709	$4p^54d\ ^1F^\circ_3$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_3$	351406	551129	9	103
489.714	$4p^54d\ ^3D^\circ_2$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_3$	346922	551129	34	103
469.547	3	2	335441	548414	44	103
463.614	3	3	335441	551129	24	103
487.734	$4s^24p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_0$	$4s4p^65p\ ^1P^\circ_1$	584632	789669	5	103
484.720	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_0$	$4p^5(^2P^\circ_{3/2})6d\ [\frac{1}{2}]^\circ_1$	584632	790938	9	103
469.331	1	0	577141	790221	18	103
467.735	1	1	577141	790938	18	103
478.410	$4s^24p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_1$	$4s4p^65p\ ^3P^\circ_1$	571364	780390	10	103
469.331	$4s^24p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	$4s4p^65p\ ^1P^\circ_1$	576592	789669	18	103
469.229	$4p^54d\ ^3D^\circ_1$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_1$	341710	554828	5	103
463.333	1	2	341710	557526	13	103
450.305	3	2	335441	557526	46	103
468.072	$4s^24p^54d\ ^1D^\circ_2$	$4s4p^64d\ ^1D_2$	340749	554385	6	103
465.506	$4s^24p^54d\ ^3F^\circ_2$	$4s4p^64d\ ^3D_2$	321895	536713	28	103
446.228	4	3	314277	538386	80	103
463.544	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})6d\ [\frac{7}{2}]^\circ_3$	576592	792321	24	103
463.333	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})6d\ [\frac{3}{2}]^\circ_2$	576592	792410	13	103
452.420	1	2	571364	792410	9	103
461.282	$4p^54d\ ^1D^\circ_2$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_2$	340749	557526	9	103
461.041	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})6d\ [\frac{5}{2}]^\circ_2$	577141	794042	5	103
459.882	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})6d\ [\frac{5}{2}]^\circ_2$	576592	794042	28	103
458.843	2	3	576592	794526	10	103
456.911	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_1$	$4p^5(^2P^\circ_{3/2})6d\ [\frac{1}{2}]^\circ_0$	571364	790221	20	103
455.421	1	1	571364	790938	5	103
451.306	$4p^54d\ ^3F^\circ_2$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	321895	543485	10	103
444.074	$4p^54d\ ^1F^\circ_3$	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	351406	576592	80	103
443.035	$4s^24p^54d\ ^3P^\circ_2$	$4s4p^64d\ ^3D_1$	310426	536131	8	103
441.903	2	2	310426	536713	9	103
438.688	2	3	310426	538386	9	103
433.736	1	1	305564	536131	7	103
442.483	$4s4p^64d\ ^1D_2$	$4s4p^65p\ ^3P^\circ_1$	554385	780390	9	103

Mo VII (Kr-Sequence) — Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
441.449	$4p^54d\ ^3F^\circ_2$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_2$	321895	548814	85	103
434.138	3	2	318063	548414	68	103
429.058	3	3	318063	551129	32	103
422.210	4	3	314277	551129	90	103
435.444	$4p^54d\ ^3D^\circ_1$	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_1$	341710	571364	8	103
425.754	1	2	341710	576592	9	103
414.693	3	2	335441	576592	21	103
434.351	$4p^54d\ ^3D^\circ_2$	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_1$	346922	577141	72	103
424.754	1	1	341710	577141	24	103
433.631	$4p^54d\ ^1D^\circ_2$	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_1$	340749	571364	8	103
424.035	2	2	340749	576592	10	103
431.430	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_0$	$4p^5(^2P^\circ_{3/2})7s\ [\frac{3}{2}]^\circ_1$	584632	816418	9	103
429.306	$4p^54d\ ^3F^\circ_2$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_1$	321895	554828	37	103
429.058	$4p^54d\ ^3P^\circ_2$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	310426	543485	32	103
420.309	1	1	305564	543485	14	103
413.779	0	1	301803	543485	9	103
425.736	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})6d\ [\frac{3}{2}]^\circ_2$	557526	792410	9	103
423.170	$4s^24p^54d\ ^3F^\circ_3$	$4s4p^64d\ ^1D_2$	318063	554385	44	103
422.789	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})6d\ [\frac{5}{2}]^\circ_2$	557526	794042	9	103
421.948	2	3	557526	794526	20	103
422.789	$4p^5(^2P^\circ_{1/2})5s\ [\frac{1}{2}]^\circ_1$	$4p^5(^2P^\circ_{3/2})6p\ [\frac{1}{2}]_1$	502931	739454	9	103
400.615	1	0	502931	752533	17	103
419.940	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{1/2})6d\ [\frac{5}{2}]^\circ_2$	577141	815261	8	103
418.991	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})6d\ [\frac{5}{2}]^\circ_2$	576592	815261	8	103
409.998	1	2	571364	815261	19	103
418.857	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})7s\ [\frac{3}{2}]^\circ_2$	576592	815350	15	103
415.070	$4p^5(^2P^\circ_{1/2})5s\ [\frac{1}{2}]^\circ_1$	$4p^5(^2P^\circ_{3/2})6p\ [\frac{5}{2}]_2$	502931	743840	1	103
414.955	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_3$	$4p^5(^2P^\circ_{3/2})6d\ [\frac{7}{2}]^\circ_4$	551129	792121	32	103
414.622	3	3	551129	792321	7	103
409.998	2	3	548414	792321	19	103
410.371	$4s4p^64d\ ^3D_2$	$4s4p^65p\ ^3P^\circ_1$	536713	780390	15	103
409.905	$4s^24p^54d\ ^3P^\circ_2$	$4s4p^64d\ ^1D_2$	310426	554385	5	103
401.903	1	2	305564	554385	9	103
409.180	$4p^54d\ ^3P^\circ_2$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_1$	310426	554828	7	103
404.711	2	2	310426	557526	8	103
401.175	1	1	305564	554828	28	103
395.216	0	1	301803	554828	8	103
407.115	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_2$	$4p^5(^2P^\circ_{3/2})6d\ [\frac{5}{2}]^\circ_2$	548414	794042	9	103
400.869	$4p^54d\ ^3F^\circ_2$	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_1$	321895	571364	18	103
386.792	3	2	318063	576592	6	103

Mo VII (Kr-Sequence) — Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
399.110	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})6d\ [\frac{5}{2}]^\circ_2$	543485	794042	17	103
396.722	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})6d\ [\frac{3}{2}]^\circ_1$	543485	795532	16	103
395.315	$4s4p^64d\ ^3D_2$	$4s4p^65p\ ^1P^\circ_1$	536713	789669	2	103
394.451	1	1	536131	789669	2	103
387.993	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})6d\ [\frac{5}{2}]^\circ_2$	557526	815261	9	103
386.792	2	3	557526	816059	6	103
387.850	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{3/2})7s\ [\frac{3}{2}]^\circ_2$	557526	815350	8	103
382.281	1	1	554828	816418	14	103
385.427	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})6d\ [\frac{3}{2}]^\circ_1$	557526	816964	22	103
383.699	1	2	554828	815427	8	103
381.481	1	1	554828	816964	7	103
385.286	$4p^54d\ ^3P^\circ_1$	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_0$	305564	565106	37	103
383.554	$4p^5(^2P^\circ_{1/2})5s\ [\frac{1}{2}]^\circ_1$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_1$	502931	763636	17	103
380.225	0	1	500637	763636	10	103
383.215	$4p^54d\ ^3P^\circ_2$	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_1$	310426	571364	19	103
376.223	1	1	305564	571364	15	103
375.703	2	2	310426	576592	20	103
370.953	0	1	301803	571364	19	103
368.971	1	2	305564	576592	14	103
382.281	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{1/2})7s\ [\frac{1}{2}]^\circ_0$	577141	838733	14	103
381.651	$4p^5(^2P^\circ_{3/2})5s\ [\frac{3}{2}]^\circ_2$	$4p^5(^2P^\circ_{3/2})6p\ [\frac{1}{2}]_1$	477429	739454	10	103
368.670	1	0	481297	752533	10	103
380.865	$4p^5(^2P^\circ_{3/2})5s\ [\frac{3}{2}]^\circ_1$	$4p^5(^2P^\circ_{3/2})6p\ [\frac{5}{2}]_2$	481297	743840	9	103
375.359	2	2	477429	743840	9	103
374.967	2	3	477429	744128	2	103
380.553	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})7s\ [\frac{1}{2}]^\circ_1$	576592	839344	7	103
378.804	$4p^5(^2P^\circ_{3/2})5s\ [\frac{3}{2}]^\circ_1$	$4p^5(^2P^\circ_{3/2})6p\ [\frac{3}{2}]_1$	481297	745292	8	103
377.204	1	2	481297	746401	17	103
378.475	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_3$	$4p^5(^2P^\circ_{3/2})7s\ [\frac{3}{2}]^\circ_2$	551129	815350	9	103
378.354	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_3$	$4p^5(^2P^\circ_{1/2})6d\ [\frac{3}{2}]^\circ_2$	551129	815427	10	103
372.349	2	1	548414	816964	8	103
373.621	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_2$	$4p^5(^2P^\circ_{1/2})6d\ [\frac{5}{2}]^\circ_3$	548414	816059	8	103
368.246	$4p^54d\ ^3P^\circ_1$	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_1$	305564	577141	8	103
363.200	0	1	301803	577141	18	103
358.333	1	0	305564	584632	18	103
367.728	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{1/2})6d\ [\frac{3}{2}]^\circ_2$	543485	815427	20	103
365.651	1	1	543485	816964	18	103
366.389	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})7s\ [\frac{3}{2}]^\circ_1$	543485	816418	8	103
352.235	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_1$	$4p^5(^2P^\circ_{1/2})7s\ [\frac{1}{2}]^\circ_0$	554828	838733	9	103
351.461	1	1	554828	839344	6	103

Mo VII (Kr-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
349.418	$4p^5(^2P^\circ_{3/2})5s\ [\frac{3}{2}]^\circ_2$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_1$	477429	763636	8	103
344.993	$4p^5(^2P^\circ_{3/2})5s\ [\frac{3}{2}]^\circ_1$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{1}{2}]_0$	481297	771155	16	103
338.682	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{1/2})7s\ [\frac{1}{2}]^\circ_0$	543485	838733	2	103
335.990	$4p^5(^2P^\circ_{1/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{3/2})8s\ [\frac{3}{2}]^\circ_2$	577141	874776	10	103
335.730	1	1	577141	874999	16	103
329.594	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_1$	$4p^5(^2P^\circ_{3/2})8s\ [\frac{3}{2}]^\circ_2$	571364	874776	4	103
327.262	$4p^6\ ^1S_0$	$4p^54d\ ^3P^\circ_1$	0	305564	78	22,47,79,103°
311.079	$4p^5(^2P^\circ_{1/2})5p\ [\frac{3}{2}]_2$	$4p^5(^2P^\circ_{1/2})8s\ [\frac{1}{2}]^\circ_1$	576592	898050	9	103
308.960	$4p^5(^2P^\circ_{3/2})5p\ [\frac{5}{2}]_3$	$4p^5(^2P^\circ_{3/2})8s\ [\frac{3}{2}]^\circ_2$	551129	874776	8	103
306.418	2	2	548414	874776	6	103
305.105	$4p^54d\ ^1P^\circ_1$	$4p^5(^2P^\circ_{3/2})6p\ [\frac{3}{2}]_1$	417544	745292	8	103
292.646	$4p^6\ ^1S_0$	$4p^54d\ ^3D^\circ_1$	0	341710	78	22,79,103°
291.340	$4p^5(^2P^\circ_{3/2})5p\ [\frac{3}{2}]_1$	$4p^5(^2P^\circ_{1/2})8s\ [\frac{1}{2}]^\circ_1$	554828	898050	8	103
287.080	$4p^54d\ ^1P^\circ_1$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{1}{2}]_1$	417544	765875	2	103
283.828	$4p^54d\ ^1P^\circ_1$	$4p^5(^2P^\circ_{1/2})6p\ [\frac{3}{2}]_2$	417544	769856	2	103
282.027	$4p^5(^2P^\circ_{3/2})5p\ [\frac{1}{2}]_1$	$4p^5(^2P^\circ_{1/2})8s\ [\frac{1}{2}]^\circ_1$	543485	898050	6	103
239.499	$4p^6\ ^1S_0$	$4p^54d\ ^1P^\circ_1$	0	417544	300	22,79°
207.773	$4p^6\ ^1S_0$	$4p^5(^2P^\circ_{3/2})5s\ [\frac{3}{2}]^\circ_1$	0	481294	150	22,27,79°
198.835	$4p^6\ ^1S_0$	$4p^5(^2P^\circ_{1/2})5s\ [\frac{1}{2}]^\circ_1$	0	502931	125	22,27,79°
151.747	$4p^6\ ^1S_0$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{1}{2}]^\circ_1$	0	658992	1	22,79°
149.462	$4p^6\ ^1S_0$	$4p^5(^2P^\circ_{3/2})5d\ [\frac{3}{2}]^\circ_1$	0	669065	40	22,79°
144.974	$4p^6\ ^1S_0$	$4p^5(^2P^\circ_{1/2})5d\ [\frac{3}{2}]^\circ_1$	0	689788	40	79
140.833	$4p^6\ ^1S_0$	$4p^5(^2P^\circ_{3/2})6s\ [\frac{3}{2}]^\circ_1$	0	710068	40	22,79°
136.507	$4p^6\ ^1S_0$	$4p^5(^2P^\circ_{1/2})6s\ [\frac{1}{2}]^\circ_1$	0	732560	20	22,79°
128.141	$4p^6\ ^1S_0$	$4s4p^65p\ ^3P^\circ_1$	0	780390	1	79
126.631	$4p^6\ ^1S_0$	$4s4p^65p\ ^1P^\circ_1$	0	789669	5	79
125.704	$4p^6\ ^1S_0$	$4p^5(^2P^\circ_{3/2})6d\ [\frac{3}{2}]^\circ_1$	0	795532	1	79
122.487	$4p^6\ ^1S_0$	$4p^5(^2P^\circ_{3/2})7s\ [\frac{3}{2}]^\circ_1$	0	816418	4	79
119.141	$4p^6\ ^1S_0$	$4p^5(^2P^\circ_{1/2})7s\ [\frac{1}{2}]^\circ_1$	0	839344	2	79
114.286	$4p^6\ ^1S_0$	$4p^5(^2P^\circ_{3/2})8s\ [\frac{3}{2}]^\circ_1$	0	874999	2	79
111.347	$4p^6\ ^1S_0$	$4p^5(^2P^\circ_{1/2})8s\ [\frac{1}{2}]^\circ_1$	0	898050	0.4	79
109.790	$4p^6\ ^1S_0$	$4p^5(^2P^\circ_{3/2})9s\ [\frac{3}{2}]^\circ_1$	0	910798	1	79
107.005	$4p^6\ ^1S_0$	$4p^5(^2P^\circ_{3/2})10s\ [\frac{3}{2}]^\circ_1$	0	934507	1	79

Mo VIII (Br-Sequence) IP = 1157900 ± 8000 cm^{-1} (143.56 ± 1.00 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
474.941	$4s^24p^5\ ^2P^\circ_{1/2}$	$4s4p^6\ ^2S_{1/2}$	23274	233830	100	24$^\Delta$,27°
427.660	3/2	1/2	0	233830	160	24$^\Delta$,27°,47
325.176	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^1D)4d\ ^2P_{1/2}$	23274	330800	8	24,43°
307.166	1/2	3/2	23274	348832	5	24,43°
286.670	3/2	3/2	0	348832	2	24,43°
323.940	$4p^5\ ^2P^\circ_{3/2}$	$4p^4(^3P)4d\ ^4D_{5/2}$	0	308699	30	43
322.645	3/2	3/2	0	309938	10	43
318.822	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^3P)4d\ ^4P_{1/2}$	23274	336936	3	24,43°
316.210	1/2	3/2	23274	339525	2	43
296.786	3/2	1/2	0	336936	50	24,43°
294.526	3/2	3/2	0	339525	60	43
288.838	3/2	5/2	0	346215	100	24,43°
314.379	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^1D)4d\ ^2D_{3/2}$	23274	341362	35	24,43°
292.943	3/2	3/2	0	341362	75	24,43°
283.167	3/2	5/2	0	353148	85	43
297.918	$4p^5\ ^2P^\circ_{3/2}$	$4p^4(^3P)4d\ ^4F_{3/2}$	0	335663	75	24,43°
295.910	3/2	5/2	0	337941	150	24,43°
279.477	$4p^5\ ^2P^\circ_{3/2}$	$4p^4(^3P)4d\ ^2F_{5/2}$	0	357811	75	24,43°
269.352	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^1S)4d\ ^2D_{3/2}$	23274	394545	15	24,43°
253.457	3/2	3/2	0	394545	30	24,43°
246.973	3/2	5/2	0	404903	50	24,43°
269.294	$4p^5\ ^2P^\circ_{3/2}$	$4p^4(^1D)4d\ ^2F_{5/2}$	0	371341	50	24,43°
257.597	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^1D)4d\ ^2S_{1/2}$	23274	411512	30	24,43°
243.006	3/2	1/2	0	411512	200	24,43°
251.085	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^3P)4d\ ^2P_{3/2}$	23274	421559	2	43
245.276	1/2	1/2	23274	430969	100	43
237.215	3/2	3/2	0	421559	700	43
232.040	3/2	1/2	0	430969	50	43
235.510	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^3P)4d\ ^2D_{3/2}$	23274	447876	500	43
234.314	3/2	5/2	0	426778	900	24,43°
223.280	3/2	3/2	0	447876	15	43
198.367	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^3P_2)5s\ (2,\frac{1}{2})_{3/2}$	23274	527389	4	24,43°
191.769	3/2	5/2	0	521461	90	24,43°
189.614	3/2	3/2	0	527389	100	24,43°
192.286	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^3P_1)5s\ (1,\frac{1}{2})_{3/2}$	23274	543336	5	24,43°
190.241	1/2	1/2	23274	548923	25	24,43°
184.047	3/2	3/2	0	543336	75	24,43°
182.175	3/2	1/2	0	548923	20	24,43°
186.377	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^1D_2)5s\ (2,\frac{1}{2})_{3/2}$	23274	559813	75	24,43°
178.951	3/2	5/2	0	558812	100	24,43°
178.634	3/2	3/2	0	559813	3	43
185.621	$4p^5\ ^2P^\circ_{3/2}$	$4p^4(^3P_0)5s\ (0,\frac{1}{2})_{1/2}$	0	538732	25	24,43°
174.656	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^1S_0)5s\ (0,\frac{1}{2})_{1/2}$	23274	595829	75	24,43°
167.833	3/2	1/2	0	595829	20	43

Mo VIII (Br-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
141.287	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^3P)5d\ ^2D_{3/2}$	23274	731073	1	25
136.782	3/2	3/2	0	731073	4	25
138.520	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^3P)5d\ ^4P_{3/2}$	23274	745165	3	25
134.203	3/2	3/2	0	745165	11	25
133.661	3/2	5/2	0	748161	2	25
137.425	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^3P)5d\ ^2P_{3/2}$	23274	750937	6	25
133.168	3/2	3/2	0	750937	1	25
136.898	$4p^5\ ^2P^\circ_{3/2}$	$4p^4(^3P)5d\ ^4P_{1/2}$	0	730472	2	25
136.357	$4p^5\ ^2P^\circ_{3/2}$	$4p^4(^3P)5d\ ^2D_{5/2}$	0	733372	6	25
135.902	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^1D)5d\ ^2S_{1/2}$	23274	759112	1	25
131.730	3/2	1/2	0	759112	1	25
135.378	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^1D)5d\ ^2P_{3/2}$	23274	761941	1	25
131.245	3/2	3/2	0	761941	1	25
134.852	$4p^5\ ^2P^\circ_{3/2}$	$4p^4(^3P)5d\ ^4F_{3/2}$	0	741552	1	25
134.362	3/2	5/2	0	744258	1	25
134.428	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^1D)5d\ ^2D_{3/2}$	23274	767167	9	25
131.059	3/2	5/2	0	763015	1	25
133.854	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^1D)5d\ ^2P_{1/2}$	23274	770370	1	25
129.806	3/2	1/2	0	770370	4	25
133.417	$4p^5\ ^2P^\circ_{3/2}$	$4p^4(^3P)5d\ ^2F_{5/2}$	0	749531	1	25
130.758	$4p^5\ ^2P^\circ_{3/2}$	$4p^4(^1D)5d\ ^2F_{5/2}$	0	764770	1	25
130.111	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^3P_2)6s\ (2,\frac{1}{2})_{3/2}$	23274	791823	1	25
126.634	3/2	5/2	0	789754	8	25
126.296	3/2	3/2	0	791823	10	25
128.688	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^1S)5d\ ^2D_{3/2}$	23274	800351	5	25
125.191	3/2	5/2	0	798781	1	25
127.662	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^3P_0)6s\ (0,\frac{1}{2})_{1/2}$	23274	806614	1	25
123.973	3/2	1/2	0	806614	3	25
127.058	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^3P_1)6s\ (1,\frac{1}{2})_{3/2}$	23274	810363	3	25
126.747	1/2	1/2	23274	812274	6	25
123.394	3/2	3/2	0	810363	5	25
123.108	3/2	1/2	0	812274	4	25
124.561	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^1D_2)6s\ (2,\frac{1}{2})_{3/2}$	23274	826096	4	25,60°
121.080	3/2	5/2	0	825900	7	25,60°
119.114	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^1S_0)6s\ (0,\frac{1}{2})_{1/2}$	23274	862803	5	25
115.902	3/2	1/2	0	862803	1	25
115.109	$4p^5\ ^2P^\circ_{1/2}$	$4p^4(^3P)6d\ ^2D_{3/2}$	23274	891999	1	25
112.254	3/2	5/2	0	890834	5	25
112.110	3/2	3/2	0	891999	2	25

Mo VIII (Br-Sequence) — Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
113.205	$4p^5\ ^2P^o_{1/2}$	$4p^4(^3P)6d\ ^4P_{3/2}$	23274	906608	1	25
110.304	3/2	3/2	0	906608	1	25
110.189	3/2	5/2	0	907534	1	25
112.746	$4p^5\ ^2P^o_{1/2}$	$4p^4(^3P)6d\ ^2P_{3/2}$	23274	910220	1	25
109.864	3/2	3/2	0	910220	1	25
111.461	$4p^5\ ^2P^o_{1/2}$	$4p^4(^1D)6d\ ^2S_{1/2}$	23274	920428	1	25
108.648	3/2	1/2	0	920428	1	25
111.383	$4p^5\ ^2P^o_{1/2}$	$4p^4(^1D)6d\ ^2P_{3/2}$	23274	921068	3	25
111.012	1/2	1/2	23274	924105	1	25
110.573	$4p^5\ ^2P^o_{1/2}$	$4p^4(^1D)6d\ ^2D_{3/2}$	23274	927660	1	25
108.255	3/2	5/2	0	923747	1	25
109.904	$4p^5\ ^2P^o_{3/2}$	$4p^4(^3P)6d\ ^2F_{5/2}$	0	909889	2	25
109.760	$4p^5\ ^2P^o_{1/2}$	$4p^4(^3P_1)7s\ (1,\frac{1}{2})_{1/2}$	23274	934364	3	25
107.203	3/2	3/2	0	932812	4	25
107.024	3/2	1/2	0	934364	3	25
109.095	$4p^5\ ^2P^o_{3/2}$	$4p^4(^3P_2)7s\ (2,\frac{1}{2})_{5/2}$	0	916634	2	25
108.796	3/2	3/2	0	919154	4	25
108.571	$4p^5\ ^2P^o_{3/2}$	$4p^4(^1D)6d\ ^2P_{3/2}$	0	921068	1	25
108.210	3/2	1/2	0	924105	3	25
107.797	$4p^5\ ^2P^o_{3/2}$	$4p^4(^1D)6d\ ^2D_{3/2}$	0	927660	1	25
107.652	$4p^5\ ^2P^o_{3/2}$	$4p^4(^3P_0)7s\ (0,\frac{1}{2})_{1/2}$	0	928921	1	25
107.380	$4p^5\ ^2P^o_{1/2}$	$4p^4(^1D_2)7s\ (2,\frac{1}{2})_{3/2}$	23274	948153	3	25
105.423	3/2	5/2	0	948129	6	25
106.259	$4p^5\ ^2P^o_{1/2}$	$4p^4(^1S)6d\ ^2D_{3/2}$	23274	964373	5	25
104.306	$4p^5\ ^2P^o_{1/2}$	$4p^4(^1S_0)7s\ (0,\frac{1}{2})_{1/2}$	23274	982044	1	25
101.823	3/2	1/2	0	982044	1	25

Mo IX (Se-Sequence) IP = 1323700 ± 8000 cm^{-1} (164.12 ± 1.00 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
577.272	$4s^24p^4\ ^1S_0$	$4s4p^5\ ^3P^\circ_1$	72884.6	246113.0	8	80
506.462	$4s^24p^4\ ^1D_2$	$4s4p^5\ ^3P^\circ_2$	35674.5	233122.9	30	80
475.197	2	1	35674.5	246113.0	1	80
470.484	$4s^24p^4\ ^3P_1$	$4s4p^5\ ^3P^\circ_2$	20576.3	233122.9	40	80
443.388	1	1	20576.3	246113.0	18	80
435.684	0	1	16588.8	246113.0	20	80
428.959	2	2	0	233122.9	100	47,80°
423.800	1	0	20576.3	256536.7	25	80
406.319	2	1	0	246113.0	50	80
448.956	$4s^24p^4\ ^1S_0$	$4s4p^5\ ^1P^\circ_1$	72884.6	295624	3	80
384.691	$4s^24p^4\ ^1D_2$	$4s4p^5\ ^1P^\circ_1$	35674.5	295624	75	80
338.264	$4s^24p^4\ ^3P_2$	$4s4p^5\ ^1P^\circ_1$	0	295624	15	80
363.764	$4p^4\ ^1S_0$	$4p^3(^2D^\circ)4d\ ^3D^\circ_1$	72884.6	347777	2	78
325.188	$4p^4\ ^1S_0$	$4p^3(^2P^\circ)4d\ ^3D^\circ_1$	72884.6	380383	7	78
320.416	$4p^4\ ^1D_2$	$4p^3(^2D^\circ)4d\ ^3D^\circ_1$	35674.5	347777	6	78
317.704	$4p^4\ ^1D_2$	$4p^3(^2D^\circ)4d\ ^3F^\circ_2$	35674.5	350444	6	78
314.446	2	3	35674.5	353696	2	78
306.182	$4p^4\ ^1D_2$	$4p^3(^2D^\circ)4d\ ^3G^\circ_3$	35674.5	362277	5	78
305.634	$4p^4\ ^3P_1$	$4p^3(^2D^\circ)4d\ ^3D^\circ_1$	20576.3	347777	3	78
301.939	0	1	16588.8	347777	2	78
287.537	2	1	0	347777	9	78
303.148	$4p^4\ ^3P_1$	$4p^3(^2D^\circ)4d\ ^3F^\circ_2$	20576.3	350444	9	78
285.346	2	2	0	350444	3	78
282.728	2	3	0	353696	8	78
290.108	$4p^4\ ^1D_2$	$4p^3(^2P^\circ)4d\ ^3D^\circ_1$	35674.5	380383	10	78
280.133	2	2	35674.5	392634	2	78
272.543	2	3	35674.5	402590	12	78
289.140	$4p^4\ ^1D_2$	$4p^3(^2P^\circ)4d\ ^1D^\circ_2$	35674.5	381528	3	78
287.291	$4p^4\ ^1S_0$	$4p^3(^2D^\circ)4d\ ^1P^\circ_1$	72884.6	420947	9	78
283.169	$4p^4\ ^1D_2$	$4p^3(^2P^\circ)4d\ ^3P^\circ_1$	35674.5	388801	25	78
270.262	2	2	35674.5	405684	3	78
278.019	$4p^4\ ^1D_2$	$4p^3(^2P^\circ)4d\ ^3F^\circ_3$	35674.5	395360	14	78
276.978	2	2	35674.5	396711	22	78
277.914	$4p^4\ ^3P_1$	$4p^3(^2P^\circ)4d\ ^3D^\circ_1$	20576.3	380383	2	78
274.885	0	1	16588.8	380383	18	78
268.771	1	2	20576.3	392634	7	78
262.894	2	1	0	380383	8	78
254.702	2	2	0	392634	3	78
248.391	2	3	0	402590	24	78
277.347	$4p^4\ ^1S_0$	$4p^3(^2D^\circ)4d\ ^3P^\circ_1$	72884.6	433445	9	78

Mo IX (Se-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
276.032	$4p^4\ ^3P_2$	$4p^3(^2D^o)4d\ ^3G^o_3$	0	362277	24	78
271.572	$4p^4\ ^3P_1$	$4p^3(^2P^o)4d\ ^3P^o_1$	20576.3	388801	6	78
259.667	1	2	20576.3	405684	6	78
257.202	2	1	0	388801	8	78
246.499	2	2	0	405684	12	78
265.860	$4p^4\ ^3P_1$	$4p^3(^2P^o)4d\ ^3F^o_2$	20576.3	396711	24	78
252.936	2	3	0	395360	20	78
252.077	2	2	0	396711	12	78
262.413	$4p^4\ ^1D_2$	$4p^3(^2D^o)4d\ ^3S^o_1$	35674.5	416746	24	78
262.103	$4p^4\ ^3P_2$	$4p^3(^2P^o)4d\ ^1D^o_2$	0	381528	14	78
260.792	$4p^4\ ^1D_2$	$4p^3(^2D^o)4d\ ^3P^o_2$	35674.5	419123	14	78
251.405	2	1	35674.5	433445	16	78
259.569	$4p^4\ ^1D_2$	$4p^3(^2D^o)4d\ ^1P^o_1$	35674.5	420947	25	78
257.503	$4p^4\ ^1D_2$	$4p^3(^2P^o)4d\ ^1F^o_3$	35674.5	424009	6	78
252.638	$4p^4\ ^1D_2$	$4p^3(^4S^o)4d\ ^3D^o_3$	35674.5	431498	2	78
246.718	2	2	35674.5	441012	25	78
242.817	2	1	35674.5	447509	11	78
252.418	$4p^4\ ^3P_1$	$4p^3(^2D^o)4d\ ^3S^o_1$	20576.3	416746	13	78
249.906	0	1	16588.8	416746	14	78
239.953	2	1	0	416746	24	78
250.912	$4p^4\ ^3P_1$	$4p^3(^2D^o)4d\ ^3P^o_2$	20576.3	419123	20	78
242.211	1	1	20576.3	433445	20	78
239.886	0	1	16588.8	433445	18	78
238.591	2	2	0	419123	25	78
230.708	2	1	0	433445	12	78
249.769	$4p^4\ ^3P_1$	$4p^3(^2D^o)4d\ ^1P^o_1$	20576.3	420947	20	78
247.304	0	1	16588.8	420947	22	78
237.560	2	1	0	420947	20	78
240.958	$4p^4\ ^1S_0$	$4p^3(^2P^o)4d\ ^1P^o_1$	72884.6	487905	25	78
237.843	$4p^4\ ^3P_1$	$4p^3(^4S^o)4d\ ^3D^o_2$	20576.3	441012	25	78
234.228	1	1	20576.3	447509	20	78
232.056	0	1	16588.8	447509	25	78
231.751	2	3	0	431498	24	78
226.747	2	2	0	441012	25	78
223.458	2	1	0	447509	10	78
237.843	$4p^4\ ^1D_2$	$4p^3(^2D^o)4d\ ^1D^o_2$	35674.5	456111	25	78
235.850	$4p^4\ ^3P_2$	$4p^3(^2P^o)4d\ ^1F^o_3$	0	424009	16	78
231.991	$4p^4\ ^1D_2$	$4p^3(^2D^o)4d\ ^1F^o_3$	35674.5	466718	25	78
229.607	$4p^4\ ^3P_1$	$4p^3(^2D^o)4d\ ^1D^o_2$	20576.3	456111	14	78
221.127	$4p^4\ ^1D_2$	$4p^3(^2P^o)4d\ ^1P^o_1$	35674.5	487905	2	78
214.266	$4p^4\ ^3P_2$	$4p^3(^2D^o)4d\ ^1F^o_3$	0	466718	10	78

Mo IX (Se-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
213.980	$4p^4\ ^3P_1$	$4p^3(^2P^o)4d\ ^1P^o_1$	20576.3	487905	9	78
212.168	0	1	16588.8	487905	6	78
178.010	$4p^4\ ^3P_1$	$4p^3(^4S^o_{3/2})5s\ (^{3\,1}_{2,2})^o_1$	20576.3	582356	7	26°,78
176.750	0	1	16588.8	582356	6	26°,78
171.713	2	1	0	582356	12	26°,78
176.682	$4p^4\ ^1D_2$	$4p^3(^2D^o_{3/2})5s\ (^{3\,1}_{2,2})^o_2$	35674.5	601678	4	26°,78
176.432	2	1	35674.5	602468	4	26°,78
174.887	$4p^4\ ^3P_2$	$4p^3(^4S^o_{3/2})5s\ (^{3\,1}_{2,2})^o_2$	0	571798	11	26°,78
174.346	$4p^4\ ^1D_2$	$4p^3(^2D^o_{5/2})5s\ (^{5\,1}_{2,2})^o_3$	35674.5	609234	6	26°,78
174.019	$4p^4\ ^1S_0$	$4p^3(^2P^o_{3/2})5s\ (^{3\,1}_{2,2})^o_1$	72884.6	647535	7	26°,78
173.091	$4p^4\ ^1D_2$	$4p^3(^2D^o_{5/2})5s\ (^{5\,1}_{2,2})^o_2$	35674.5	613394	15	26°,78
172.083	$4p^4\ ^3P_1$	$4p^3(^2D^o_{3/2})5s\ (^{3\,1}_{2,2})^o_2$	20576.3	601678	6	26°,78
171.862	1	1	20576.3	602468	11	26°,78
170.674	0	1	16588.8	602468	3	26°,78
166.201	2	2	0	601678	12	26°,78
168.683	$4p^4\ ^3P_1$	$4p^3(^2D^o_{5/2})5s\ (^{5\,1}_{2,2})^o_2$	20576.3	613394	6	26°,78
163.033	2	2	0	613394	5	26°,78
168.144	$4p^4\ ^1D_2$	$4p^3(^2P^o_{1/2})5s\ (^{1\,1}_{2,2})^o_1$	35674.5	630384	6	26°,78
164.454	$4p^4\ ^3P_1$	$4p^3(^2P^o_{1/2})5s\ (^{1\,1}_{2,2})^o_0$	20576.3	628649	6	26°,78
163.986	1	1	20576.3	630384	4	26°,78
164.355	$4p^4\ ^1D_2$	$4p^3(^2P^o_{3/2})5s\ (^{3\,1}_{2,2})^o_2$	35674.5	644114	7	26°,78
164.144	$4p^4\ ^3P_2$	$4p^3(^2D^o_{5/2})5s\ (^{5\,1}_{2,2})^o_3$	0	609234	20	26°,78
163.436	$4p^4\ ^1D_2$	$4p^3(^2P^o_{3/2})5s\ (^{3\,1}_{2,2})^o_1$	35674.5	647535	7	26°,78
162.918	$4p^4\ ^3P_0$	$4p^3(^2P^o_{1/2})5s\ (^{1\,1}_{2,2})^o_1$	16588.8	630384	7	26°,78
158.641	2	1	0	630384	3	26°,78
160.375	$4p^4\ ^3P_1$	$4p^3(^2P^o_{3/2})5s\ (^{3\,1}_{2,2})^o_2$	20576.3	644114	9	26°,78
155.246	2	2	0	644114	5	26°,78
132.908	$4p^4\ ^1S_0$	$4p^3(^2P^o)5d\ ^3D^o_1$	72884.6	825266	1	62
132.077	$4p^4\ ^1S_0$	$4p^3(^2P^o)5d\ ^3P^o_1$	72884.6	830015	0	62
128.878	$4p^4\ ^1S_0$	$4p^3(^2D^o)5d\ ^3P^o_1$	72884.6	848809	0	62
128.740	$4p^4\ ^3P_1$	$4p^3(^2D^o)5d\ ^3D^o_1$	20576.3	797355	1	62
128.076	0	1	16588.8	797355	1	62
128.200	$4p^4\ ^3P_1$	$4p^3(^2D^o)5d\ ^3F^o_2$	20576.3	800579	1	62
124.914	2	2	0	800579	2	62
127.086	$4p^4\ ^1D_2$	$4p^3(^2D^o)5d\ ^3G^o_3$	35674.5	822534	1	62
126.187	$4p^4\ ^1S_0$	$4p^3(^4S^o)5d\ ^3D^o_1$	72884.6	865366	2	62
126.100	$4p^4\ ^1D_2$	$4p^3(^2P^o)5d\ ^1D^o_2$	35674.5	828728	4	62

Mo IX (Se-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
124.266	$4p^4\ ^3P_1$	$4p^3(^2P^o)5d\ ^3D^o_1$	20576.3	825266	2	62
123.660	0	1	16588.8	825266	0	62
121.180	2	1	0	825266	1	62
119.114	2	3	0	839507	10	62
124.408	$4p^4\ ^1D_2$	$4p^3(^2P^o)5d\ ^3D^o_3$	35674.5	839507	5	62
124.369	$4p^4\ ^1D_2$	$4p^3(^2P^o)5d\ ^3P^o_2$	35674.5	839713	2	62
124.221	$4p^4\ ^1D_2$	$4p^3(^2D^o)5d\ ^3P^o_2$	35674.5	840654	0	62
122.984	2	1	35674.5	848809	1	62
123.778	$4p^4\ ^1D_2$	$4p^3(^2D^o)5d\ ^1P^o_1$	35674.5	843565	0	62
123.738	$4p^4\ ^3P_1$	$4p^3(^2P^o)5d\ ^1D^o_2$	20576.3	828728	5	62
120.663	2	2	0	828728	0	62
123.545	$4p^4\ ^3P_1$	$4p^3(^2P^o)5d\ ^3P^o_1$	20576.3	830015	8	62
122.084	1	2	20576.3	839713	3	62
120.478	2	1	0	830015	3	62
119.087	2	2	0	839713	0	62
123.485	$4p^4\ ^1D_2$	$4p^3(^2P^o)5d\ ^1F^o_3$	35674.5	845474	4	62
123.178	$4p^4\ ^1D_2$	$4p^3(^4S^o)5d\ ^3D^o_3$	35674.5	847507	6	62
120.528	2	1	35674.5	865366	0	62
122.897	$4p^4\ ^1S_0$	$4p^3(^2P^o)5d\ ^1P^o_1$	72884.6	886605	2	62
121.941	$4p^4\ ^3P_1$	$4p^3(^2D^o)5d\ ^3P^o_2$	20576.3	840654	6	62
120.156	0	1	16588.8	848809	4	62
118.959	2	2	0	840654	5	62
117.814	2	1	0	848809	5	62
121.577	$4p^4\ ^3P_2$	$4p^3(^2D^o)5d\ ^3G^o_3$	0	822534	6	62
121.517	$4p^4\ ^3P_1$	$4p^3(^2D^o)5d\ ^1P^o_1$	20576.3	843565	1	62
118.537	2	1	0	843565	0	62
119.913	$4p^4\ ^1D_2$	$4p^3(^2D^o)5d\ ^1D^o_2$	35674.5	869633	1	62
118.373	$4p^4\ ^3P_1$	$4p^3(^4S^o)5d\ ^3D^o_1$	20576.3	865366	4	62
117.814	0	1	16588.8	865366	5	62
118.279	$4p^4\ ^3P_2$	$4p^3(^2P^o)5d\ ^1F^o_3$	0	845474	4	62
117.775	$4p^4\ ^3P_1$	$4p^3(^2D^o)5d\ ^1D^o_2$	20576.3	869633	1	62
116.248	$4p^4\ ^3P_1$	$4p^3(^4S^o_{3/2})6s\ (^1_2{,}^1_2)^o_1$	20576.3	880843	0	62
113.523	2	1	0	880843	5	62
115.471	$4p^4\ ^3P_1$	$4p^3(^2P^o)5d\ ^1P^o_1$	20576.3	886605	0	62
114.935	0	1	16588.8	886605	4	62
116.088	$4p^4\ ^1S_0$	$4p^3(^2P^o_{1/2})6s\ (^1_2{,}^1_2)^o_1$	72884.6	934288	2	62
114.920	$4p^4\ ^1D_2$	$4p^3(^2D^o_{3/2})6s\ (^1_2{,}^1_2)^o_2$	35674.5	905858	4	62
114.854	2	1	35674.5	906239	0	62
114.042	2	3	35674.5	912477	0	62

Mo IX (Se-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
114.212	$4p^4\ ^3P_2$	$4p^3(^4S^\circ_{3/2})6s\ (^3_2,^1_2)^\circ_2$	0	875565	1	62
113.932	$4p^4\ ^1S_0$	$4p^3(^2P^\circ_{3/2})6s\ (^3_2,^1_2)^\circ_1$	72884.6	950649	4	62
113.663	$4p^4\ ^1D_2$	$4p^3(^2D^\circ_{5/2})6s\ (^5_2,^1_2)^\circ_2$	35674.5	915504	10	62
112.916	$4p^4\ ^3P_1$	$4p^3(^2D^\circ_{3/2})6s\ (^3_2,^1_2)^\circ_1$	20576.3	906239	12	62
112.411	0	1	16588.8	906239	1	62
110.391	2	2	0	905858	8	62
109.600	2	3	0	912477	5	62
111.739	$4p^4\ ^3P_1$	$4p^3(^2D^\circ_{5/2})6s\ (^5_2,^1_2)^\circ_2$	20576.3	915504	2	62
109.227	2	2	0	915504	1	62
111.286	$4p^4\ ^1D_2$	$4p^3(^2P^\circ_{1/2})6s\ (^1_2,^1_2)^\circ_1$	35674.5	934288	4	62
109.650	2	2	35674.5	947617	4	62
109.552	$4p^4\ ^3P_1$	$4p^3(^2P^\circ_{1/2})6s\ (^1_2,^1_2)^\circ_0$	20576.3	933385	1	62
109.444	1	1	20576.3	934288	4	62
108.966	0	1	16588.8	934288	1	62
107.876	1	2	20576.3	947617	1	62
109.287	$4p^4\ ^1D_2$	$4p^3(^2P^\circ_{3/2})6s\ (^3_2,^1_2)^\circ_1$	35674.5	950649	4	62
106.080	$4p^4\ ^1S_0$	$4p^3(^2P^\circ)6d\ ^3D^\circ_1$	72884.6	1015585	5	62
104.752	$4p^4\ ^1D_2$	$4p^3(^2D^\circ)6d\ ^3F^\circ_2$	35674.5	990382	3	62
103.415	$4p^4\ ^3P_1$	$4p^3(^2D^\circ)6d\ ^3D^\circ_1$	20576.3	987579	2	62
102.985	0	1	16588.8	987579	2	62
100.099	$4p^4\ ^3P_0$	$4p^3(^2P^\circ)6d\ ^3D^\circ_1$	16588.8	1015585	4	62
98.460	2	1	0	1015585	4	62
97.635	2	3	0	1024196	1	62
103.110	$4p^4\ ^3P_1$	$4p^3(^2D^\circ)6d\ ^3F^\circ_2$	20576.3	990382	4	62
100.967	2	2	0	990382	2	62
102.152	$4p^4\ ^1D_2$	$4p^3(^2D^\circ)6d\ ^3G^\circ_3$	35674.5	1014603	3	62
102.056	$4p^4\ ^1D_2$	$4p^3(^2P^\circ)6d\ ^3D^\circ_1$	35674.5	1015585	0	62
101.164	2	3	35674.5	1024196	5	62
101.744	$4p^4\ ^1D_2$	$4p^3(^2P^\circ)6d\ ^3P^\circ_1$	35674.5	1018148	1	62
101.069	2	2	35674.5	1025122	4	62
101.675	$4p^4\ ^1S_0$	$4p^3(^4S^\circ)6d\ ^3D^\circ_1$	72884.6	1056382	2	62
100.742	$4p^4\ ^1S_0$	$4p^3(^2P^\circ)6d\ ^1P^\circ_1$	72884.6	1065491	4	62
100.437	$4p^4\ ^1D_2$	$4p^3(^2P^\circ)6d\ ^1F^\circ_3$	35674.5	1031317	2	62
100.370	$4p^4\ ^3P_1$	$4p^3(^2P^\circ)6d\ ^1D^\circ_2$	20576.3	1016860	1	62
98.345	2	2	0	1016860	1	62
100.246	$4p^4\ ^1D_2$	$4p^3(^2D^\circ)6d\ ^3P^\circ_2$	35674.5	1033227	4	62
99.566	2	1	35674.5	1040059	1	62

Mo IX (Se-Sequence) — Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
100.246	$4p^4\ ^3P_1$	$4p^3(^2P^o)6d\ ^3P^o_1$	20576.3	1018148	4	62
99.852	0	1	16588.8	1018148	0	62
99.545	1	2	20576.3	1025122	0	62
98.217	2	1	0	1018148	0	62
99.194	$4p^4\ ^3P_1$	$4p^3(^4S^o_{3/2})7s\ (^{3\,1}_{2,2})^o_1$	20576.3	1028743	4	62
98.795	0	1	16588.8	1028743	0	62
97.206	2	1	0	1028743	1	62
98.977	$4p^4\ ^1S_0$	$4p^3(^2P^o_{1/2})7s\ (^{1\,1}_{2,2})^o_1$	72884.6	1083142	1	62
98.750	$4p^4\ ^3P_1$	$4p^3(^2D^o)6d\ ^3P^o_2$	20576.3	1033227	2	62
98.087	1	1	20576.3	1040059	1	62
97.710	0	1	16588.8	1040059	4	62
96.145	2	1	0	1040059	4	62
98.561	$4p^4\ ^3P_2$	$4p^3(^2D^o)6d\ ^3G^o_3$	0	1014603	5	62
98.097	$4p^4\ ^1D_2$	$4p^3(^2D^o_{3/2})7s\ (^{3\,1}_{2,2})^o_1$	35674.5	1055089	1	62
98.077	2	2	35674.5	1055312	1	62
97.416	2	3	35674.5	1062162	1	62
97.885	$4p^4\ ^1D_2$	$4p^3(^2D^o)6d\ ^1D^o_2$	35674.5	1057289	4	62
97.494	$4p^4\ ^3P_2$	$4p^3(^4S^o_{3/2})7s\ (^{3\,1}_{2,2})^o_2$	0	1025704	1	62
97.416	$4p^4\ ^1S_0$	$4p^3(^2P^o_{3/2})7s\ (^{3\,1}_{2,2})^o_1$	72884.6	1099412	4	62
97.206	$4p^4\ ^1D_2$	$4p^3(^2D^o_{5/2})7s\ (^{5\,1}_{2,2})^o_2$	35674.5	1064357	1	62
96.964	$4p^4\ ^3P_2$	$4p^3(^2P^o)6d\ ^1F^o_3$	0	1031317	0	62
96.660	$4p^4\ ^3P_1$	$4p^3(^2D^o_{3/2})7s\ (^{3\,1}_{2,2})^o_1$	20576.3	1055089	4	62
96.295	0	1	16588.8	1055089	0	62
94.756	2	2	0	1055312	5	62
94.151	2	3	0	1062162	4	62
96.546	$4p^4\ ^3P_1$	$4p^3(^4S^o)6d\ ^3D^o_1$	20576.3	1056382	2	62
96.458	$4p^4\ ^3P_1$	$4p^3(^2D^o)6d\ ^1D^o_2$	20576.3	1057289	1	62
95.811	$4p^4\ ^3P_1$	$4p^3(^2D^o_{5/2})7s\ (^{5\,1}_{2,2})^o_2$	20576.3	1064357	5	62
95.703	$4p^4\ ^3P_1$	$4p^3(^2P^o)6d\ ^1P^o_1$	20576.3	1065491	4	62
95.339	0	1	16588.8	1065491	5	62
95.464	$4p^4\ ^1D_2$	$4p^3(^2P^o_{1/2})7s\ (^{1\,1}_{2,2})^o_1$	35674.5	1083142	1	62
94.216	2	2	35674.5	1097040	3	62
94.172	$4p^4\ ^3P_1$	$4p^3(^2P^o_{1/2})7s\ (^{1\,1}_{2,2})^o_0$	20576.3	1082463	1	62
94.120	1	1	20576.3	1083142	5	62
93.763	0	1	16588.8	1083142	2	62
92.899	1	2	20576.3	1097040	1	62
94.008	$4p^4\ ^1D_2$	$4p^3(^2P^o_{3/2})7s\ (^{3\,1}_{2,2})^o_1$	35674.5	1099412	6	62

Mo x (As-Sequence) IP = 1503000 ± 10000 cm^{-1} (186.3 ± 1.2 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
473.955	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s4p^4\ ^2D_{5/2}$	70544	281535	7000	85
444.565	$4s^24p^3\ ^4S^\circ_{3/2}$	$4s4p^4\ ^3P_{5/2}$	0	224939	100000	85
416.856	3/2	3/2	0	239891	70000	85
409.070	3/2	1/2	0	244457	40000	85
406.480	$4s^24p^3\ ^2D^\circ_{5/2}$	$4s4p^4\ ^2D_{5/2}$	35522	281535	300000	85
400.502	3/2	3/2	26886	276573	250000	85
403.419	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s4p^4\ ^2P_{3/2}$	70544	318423	5000	85
380.070	1/2	3/2	55313	318423	2000	85
368.869	3/2	1/2	70544	341642	70000	85
385.816	$4s^24p^3\ ^2P^\circ_{1/2}$	$4s4p^4\ ^2S_{1/2}$	55313	314504	50000	85
353.483	$4s^24p^3\ ^2D^\circ_{5/2}$	$4s4p^4\ ^2P_{3/2}$	35522	318423	600000	85
343.007	3/2	3/2	26886	318423	5000	85
317.709	3/2	1/2	26886	341642	10000	85
347.683	$4s^24p^3\ ^2D^\circ_{3/2}$	$4s4p^4\ ^2S_{1/2}$	26886	314504	100000	85
349.426	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^2(^3P)4d\ ^4F_{3/2}$	70544	356732	7	8
344.569	3/2	5/2	70544	360764	5	8
331.683	1/2	3/2	55313	356732	1	8
331.072	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^2(^3P)4d\ ^4D_{1/2}$	70544	372595	6	8
326.255	3/2	3/2	70544	377099	2	78
319.630	3/2	5/2	70544	383440	3	78
315.162	1/2	1/2	55313	372595	2	8
310.774	1/2	3/2	55313	377099	2	78
314.049	$4s^24p^3\ ^4S^\circ_{3/2}$	$4s4p^4\ ^2P_{3/2}$	0	318423	1000	85
311.209	$4s^24p^3\ ^2D^\circ_{5/2}$	$4s^24p^2(^3P)4d\ ^4F_{3/2}$	35522	356732	5	8
307.467	5/2	5/2	35522	360764	6	8
303.066	3/2	3/2	26886	356732	16	8
300.746	5/2	7/2	35522	368028	9	8
299.505	3/2	5/2	26886	360764	10	8
299.122	$4s^24p^3\ ^2D^\circ_{5/2}$	$4s^24p^2(^3P)4d\ ^2F_{5/2}$	35522	369830	8	8
294.271	5/2	7/2	35522	375345	3	8
291.576	3/2	5/2	26886	369830	5	8
299.081	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^2(^3P)4d\ ^2P_{3/2}$	70544	404950	2	78
286.748	3/2	1/2	70544	419322	4	8
274.743	1/2	1/2	55313	419322	1	78
292.748	$4s^24p^3\ ^2D^\circ_{5/2}$	$4s^24p^2(^3P)4d\ ^4D_{3/2}$	35522	377099	4	78
289.255	3/2	1/2	26886	372595	12	8
287.417	5/2	5/2	35522	383440	2	78
285.534	3/2	3/2	26886	377099	4	78
280.466	3/2	5/2	26886	383440	1	78
277.593	5/2	7/2	35522	395762	5	8
289.495	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^2(^3P)4d\ ^4P_{5/2}$	70544	416017	15	8
285.933	3/2	3/2	70544	420260	2	78
280.253	3/2	1/2	70544	427397	6	78
268.771	1/2	1/2	55313	427397	7	78

Mo x (As-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
280.269	$4s^24p^3\ ^4S^\circ_{3/2}$	$4s^24p^2(^3P)4d\ ^4F_{3/2}$	0	356732	13	8
277.168	3/2	5/2	0	360764	10	8
278.485	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^2(^3P)4d\ ^2D_{3/2}$	70544	429661	7	8
270.954	3/2	5/2	70544	439671	10	78
267.085	1/2	3/2	55313	429661	5	8
270.413	$4s^24p^3\ ^4S^\circ_{3/2}$	$4s^24p^2(^3P)4d\ ^2F_{5/2}$	0	369830	6	8
270.707	$4s^24p^3\ ^2D^\circ_{5/2}$	$4s^24p^2(^3P)4d\ ^2P_{3/2}$	35522	404950	8	78
264.512	3/2	3/2	26886	404950	8	78
254.821	3/2	1/2	26886	419322	4	78
267.896	$4s^24p^3\ ^2D^\circ_{5/2}$	$4s^24p^2(^1D)4d\ ^2G_{7/2}$	35522	408801	8	78
268.402	$4s^24p^3\ ^4S^\circ_{3/2}$	$4s^24p^2(^3P)4d\ ^4D_{1/2}$	0	372595	5	8
265.157	3/2	3/2	0	377099	3	78
260.777	3/2	5/2	0	383440	12	78
265.597	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^2(^1D)4d\ ^2D_{3/2}$	70544	446930	9	8
264.403	3/2	5/2	70544	448779	8	78
255.355	1/2	3/2	55313	446930	10	78
261.557	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^2(^1D)4d\ ^2P_{1/2}$	70544	452877	8	78
255.156	3/2	3/2	70544	462467	24	78
251.530	1/2	1/2	55313	452877	14	78
245.602	1/2	3/2	55313	462467	16	78
259.898	$4s^24p^3\ ^2D^\circ_{5/2}$	$4s^24p^2(^3P)4d\ ^4P_{3/2}$	35522	420260	2	78
256.989	3/2	5/2	26886	416017	5	78
254.201	3/2	3/2	26886	420260	4	78
249.668	3/2	1/2	26886	427397	20	78
257.854	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^2(^1D)4d\ ^2F_{5/2}$	70544	458371	11	78
254.474	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^2(^1D)4d\ ^2S_{1/2}$	70544	463532	20	78
244.959	1/2	1/2	55313	463532	9	78
253.731	$4s^24p^3\ ^2D^\circ_{5/2}$	$4s^24p^2(^3P)4d\ ^2D_{3/2}$	35522	429661	8	78
248.282	3/2	3/2	26886	429661	2	78
247.441	5/2	5/2	35522	439671	12	78
242.258	3/2	5/2	26886	439671	16	78
246.924	$4s^24p^3\ ^4S^\circ_{3/2}$	$4s^24p^2(^3P)4d\ ^2P_{3/2}$	0	404950	2	78
238.459	3/2	1/2	0	419322	5	78
243.071	$4s^24p^3\ ^2D^\circ_{5/2}$	$4s^24p^2(^1D)4d\ ^2D_{3/2}$	35522	446930	6	78
241.969	5/2	5/2	35522	448779	22	78
238.064	3/2	3/2	26886	446930	25	78
237.023	3/2	5/2	26886	448779	2	78
240.370	$4s^24p^3\ ^4S^\circ_{3/2}$	$4s^24p^2(^3P)4d\ ^4P_{5/2}$	0	416017	25	78
237.909	3/2	3/2	0	420260	25	78
233.957	3/2	1/2	0	427397	21	78
239.998	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^2(^1S)4d\ ^2D_{3/2}$	70544	487241	12	78
239.017	3/2	5/2	70544	488950	24	78
231.522	1/2	3/2	55313	487241	24	78

Mo x (As-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
236.492	$4s^24p^3\ ^2D^\circ_{5/2}$	$4s^24p^2(^1D)4d\ ^2F_{5/2}$	35522	458371	14	78
231.751	3/2	5/2	26886	458371	24	78
231.110	5/2	7/2	35522	468216	25	78
234.744	$4s^24p^3\ ^2D^\circ_{3/2}$	$4s^24p^2(^1D)4d\ ^2P_{1/2}$	26886	452877	6	78
232.726	$4s^24p^3\ ^4S^\circ_{3/2}$	$4s^24p^2(^3P)4d\ ^2D_{3/2}$	0	429661	16	78
227.436	3/2	5/2	0	439671	4	78
229.014	$4s^24p^3\ ^2D^\circ_{3/2}$	$4s^24p^2(^1D)4d\ ^2S_{1/2}$	26886	463532	8	78
221.361	$4s^24p^3\ ^2D^\circ_{5/2}$	$4s^24p^2(^1S)4d\ ^2D_{3/2}$	35522	487241	2	78
220.530	5/2	5/2	35522	488950	4	78
166.831	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^25s\ ^2P_{3/2}$	70544	669948	6000	85°
165.106	1/2	1/2	55313	660981	15000	77,85°
162.698	1/2	3/2	55313	669948	40000	77,85°
163.369	$4s^24p^3\ ^2D^\circ_{3/2}$	$4s^24p^25s\ ^4P_{1/2}$	26886	638999	6000	77,85°
161.442	5/2	3/2	35522	654947	6000	77,85°
159.219	3/2	3/2	26886	654947	8000	77,85°
159.049	5/2	5/2	35522	664258	50000	77,85°
160.745	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^25s\ ^2D_{5/2}$	70544	692660	30000	77,85°
160.075	3/2	3/2	70544	695263	100000	77,85°
156.257	1/2	3/2	55313	695263	1500	85
157.706	$4s^24p^3\ ^2D^\circ_{3/2}$	$4s^24p^25s\ ^2P_{1/2}$	26886	660981	100000	77,85°
157.624	5/2	3/2	35522	669948	120000	77,85°
155.506	3/2	3/2	26886	669948	20000	85
156.494	$4s^24p^3\ ^4S^\circ_{3/2}$	$4s^24p^25s\ ^4P_{1/2}$	0	638999	100000	77,85°
152.683	3/2	3/2	0	654947	100000	77,85°
150.544	3/2	5/2	0	664258	100000	77,85°
153.242	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^25s\ ^2S_{1/2}$	70544	723115	20000	77,85°
149.743	1/2	1/2	55313	723115	10000	77,85°
152.175	$4s^24p^3\ ^2D^\circ_{5/2}$	$4s^24p^25s\ ^2D_{5/2}$	35522	692660	100000	85
151.575	5/2	3/2	35522	695263	8000	85
150.201	3/2	5/2	26886	692660	30000	85
149.618	3/2	3/2	26886	695263	10000	85
144.370	$4s^24p^3\ ^4S^\circ_{3/2}$	$4s^24p^25s\ ^2D_{5/2}$	0	692660	2000	85
143.631	$4s^24p^3\ ^2D^\circ_{3/2}$	$4s^24p^25s\ ^2S_{1/2}$	26886	723115	200	85

Mo XI (Ge-Sequence) IP = 1688000 ± 10000 cm^{-1} (209.3 ± 1.2 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
360.518	$4s^24p^2\ ^1S_0$	$4s4p^3\ ^1P^\circ_1$	84808	362196	3	78
325.231	$4s^24p^2\ ^1D_2$	$4s4p^3\ ^1P^\circ_1$	54719	362196	16	78
324.642	$4s^24p^2\ ^3P_2$	$4s4p^3\ ^3S^\circ_1$	27136	335178	18	78
314.868	1	1	17590	335178	9	78
298.345	0	1	0	335178	5	78
306.637	$4s^24p^2\ ^1D_2$	$4s^24p4d\ ^3F^\circ_2$	54719	380832	2	78
298.242	2	3	54719	390018	2	78
290.177	$4s^24p^2\ ^3P_1$	$4s4p^3\ ^1P^\circ_1$	17590	362196	9	78
282.728	$4s^24p^2\ ^3P_2$	$4s^24p4d\ ^3F^\circ_2$	27136	380832	8	78
275.572	2	3	27136	390018	6	78
275.305	1	2	17590	380832	3	78
277.103	$4s^24p^2\ ^1D_2$	$4s^24p4d\ ^1D^\circ_2$	54719	415602	5	78
270.497	$4s^24p^2\ ^1D_2$	$4s^24p4d\ ^3P^\circ_1$	54719	424400	7	78
266.365	2	2	54719	430145	12	78
258.410	$4s^24p^2\ ^1D_2$	$4s^24p4d\ ^3D^\circ_1$	54719	441686	4	78
256.749	2	3	54719	444196	6	78
256.015	2	2	54719	445333	18	78
257.418	$4s^24p^2\ ^3P_2$	$4s^24p4d\ ^1D^\circ_2$	27136	415602	23	78
251.250	1	2	17590	415602	24	78
251.725	$4s^24p^2\ ^3P_2$	$4s^24p4d\ ^3P^\circ_1$	27136	424400	8	78
248.134	2	2	27136	430145	8	78
245.817	1	1	17590	424400	8	78
242.390	1	2	17590	430145	16	78
239.253	1	0	17590	435558	8	78
235.629	0	1	0	424400	12	78
251.351	$4s^24p^2\ ^1S_0$	$4s^24p4d\ ^1P^\circ_1$	84808	482661	14	78
241.228	$4s^24p^2\ ^3P_2$	$4s^24p4d\ ^3D^\circ_1$	27136	441686	8	78
239.778	2	3	27136	444196	25	78
239.121	2	2	27136	445333	22	78
235.802	1	1	17590	441686	12	78
233.780	1	2	17590	445333	16	78
226.406	0	1	0	441686	2	78
237.765	$4s^24p^2\ ^1D_2$	$4s^24p4d\ ^1F^\circ_3$	54719	475300	24	78
233.684	$4s^24p^2\ ^1D_2$	$4s^24p4d\ ^1P^\circ_1$	54719	482661	3	78
223.134	$4s^24p^2\ ^3P_2$	$4s^24p4d\ ^1F^\circ_3$	27136	475300	8	78
219.526	$4s^24p^2\ ^3P_2$	$4s^24p4d\ ^1P^\circ_1$	27136	482661	3	78
207.179	0	1	0	482661	8	78
160.188	$4s^24p^2\ ^1S_0$	$4s^24p5s\ ^3P^\circ_1$	84808	709077	2	77°,78
152.818	$4s^24p^2\ ^1D_2$	$4s^24p5s\ ^3P^\circ_1$	54719	709077	3	77°,78
146.955	2	2	54719	735196	15	77°,78
152.723	$4s^24p^2\ ^1S_0$	$4s^24p5s\ ^1P^\circ_1$	84808	739589	10	77°,78

Mo XI (Ge-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
146.016	$4s^24p^2\ ^1D_2$	$4s^24p5s\ ^1P^\circ_1$	54719	739589	22	77°,78
146.641	$4s^24p^2\ ^3P_2$	$4s^24p5s\ ^3P^\circ_1$	27136	709077	18	77°,78
145.009	1	0	17590	707202	12	77°,78
144.616	1	1	17590	709077	10	77°,78
141.030	0	1	0	709077	15	77°,78
141.231	2	2	27136	735196	20	77°,78
139.353	1	2	17590	735196	18	77°,78
140.357	$4s^24p^2\ ^3P_2$	$4s^24p5s\ ^1P^\circ_1$	27136	739589	5	77°,78

Mo XII (Ga-Sequence) IP = 1857300 ± 15000 cm^{-1} (230.28 ± 2.0 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
336.639	$4s^24p\ ^2P^\circ_{3/2}$	$4s4p^2\ ^2P_{1/2}$	28465	325520		47
329.414	3/2	3/2	28465	332037		47
307.202	1/2	1/2	0	325520		116
301.170	1/2	3/2	0	332037		116
136.499	$4s^24p\ ^2P_{3/2}$	$4s^25s\ ^2S_{1/2}$	28465	761072		116
131.394	1/2	1/2	0	761072		116

Mo XIII (Zn-Sequence) IP = 2240000 ± 22000 cm^{-1} (277.7 ± 3 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
518.904	$4s4p\ ^1P^\circ_1$	$4p^2\ ^1D_2$	293333	486056		72
480.820	$4s^2\ ^1S_0$	$4s4p\ ^3P^\circ_1$	0	207980		47,72°
453.099	$4s4p\ ^1P^\circ_1$	$4p^2\ ^3P_2$	293333	514035		72
395.399	$4s4p\ ^3P^\circ_2$	$4p^2\ ^3P_1$	230664	483571		72
389.926	1	0	207980	464441		247,72°
362.865	1	1	207980	483571		47,72°
352.904	2	2	230664	514035		47,72°
352.001	0	1	199480	483571		72
326.736	1	2	207980	514035		72
391.546	$4s4p\ ^3P^\circ_2$	$4p^2\ ^1D_2$	230664	486056		72
359.631	1	2	207980	486056		72
340.909	$4s^2\ ^1S_0$	$4s4p\ ^1P^\circ_1$	0	293333	100	1,47,53,54,72,81°
88.770	$4s^2\ ^1S_0$	$4s5p\ ^3P^\circ_2$	0	1126500	1	4
87.788	$4s^2\ ^1S_0$	$4s5p\ ^1P^\circ_1$	0	1139100	2	4
54.101	$3d^{10}4s^2\ ^1S_0$	$3d^94s^24p\ ^1P^\circ_1$	0	1848400	20	19,107°
53.551	$3d^{10}4s^2\ ^1S_0$	$3d^94s^24p\ ^3D^\circ_1$	0	1867400	10	19,107°

Mo XIV (Cu-Sequence) IP = 2440600 ± 3000 cm^{-1} (302.60 ± 0.4 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
423.576	4s $^2S_{1/2}$	4p $^2P^\circ_{1/2}$	0	236085	2000	47,54,81°,82
373.647	1/2	3/2	0	267632	10000	47,54,81°,82
295.366	4f $^2F^\circ_{5/2}$	5d $^2D_{3/2}$	1033850	1372413	10	82
293.374	7/2	5/2	1033968	1374830	15	82
264.126	4d $^2D_{5/2}$	4f $^2F^\circ_{5/2}$	655242	1033850	40	82
264.043	5/2	7/2	655242	1033968	400	82
260.501	3/2	5/2	649976	1033850	300	82
261.544	4p $^2P^\circ_{3/2}$	4d $^2D_{3/2}$	267632	649976	200	82
257.993	3/2	5/2	267632	655242	800	82
241.609	1/2	3/2	236085	649976	800	82
184.481	4d $^2D_{3/2}$	5p $^2P^\circ_{1/2}$	649976	1192036	300	31,82°
181.817	5/2	3/2	655242	1205254	600	31,82°
180.087	3/2	3/2	649976	1205254	85	31,82°
183.949	4f $^2F^\circ_{7/2}$	5g $^2G_{7/2}$	1033968	1577546	1200	31,82°
183.949	7/2	9/2	1033968	1577546	1200	31,82°
123.902	4f $^2F^\circ_{7/2}$	6g $^2G_{7/2}$	1033968	1841006	150	31,82°
123.902	7/2	9/2	1033968	1841006	150	31,82°
123.902	5/2	7/2	1033850	1841006	150	31,82°
121.647	4p $^2P^\circ_{3/2}$	5s $^2S_{1/2}$	267632	1089691	1500	4,81,82°
117.149	1/2	1/2	236085	1089691	1000	4,81,82°
112.973	4d $^2D_{5/2}$	5f $^2F^\circ_{5/2}$	655242	1540440	30	82
112.952	5/2	7/2	655242	1540574	300	4,82°
112.300	3/2	5/2	649976	1540440	150	4,82°
103.500	4f $^2F^\circ_{7/2}$	7g $^2G_{7/2}$	1033968	2000101	40	82
103.500	7/2	9/2	1033968	2000101	40	82
103.500	5/2	7/2	1033850	2000101	40	82
101.699	4d $^2D_{3/2}$	6p $^2P^\circ_{1/2}$	649976	1633270	15	82,83°
101.543	5/2	3/2	655242	1640046	70	82
101.004	3/2	3/2	649976	1640046	5	82
90.519	4p $^2P^\circ_{3/2}$	5d $^2D_{3/2}$	267632	1372413	70	82
90.319	3/2	5/2	267632	1374830	400	4,82°
88.000	1/2	3/2	236085	1372413	150	4,82°
85.979	4d $^2D_{5/2}$	6f $^2F^\circ_{5/2}$	655242	1818317	100	82
85.597	3/2	7/2	649976	1818244	70	82
83.890	4s $^2S_{1/2}$	5p $^2P^\circ_{1/2}$	0	1192036	400	4,82°
82.971	1/2	3/2	0	1205254	600	4,82°
76.216	4p $^2P^\circ_{3/2}$	6s $^2S_{1/2}$	267632	1579705	50	31,82°
74.425	1/2	1/2	236085	1579705	20	31,82°
63.45	4p $^2P^\circ_{3/2}$	7s $^2S_{1/2}$	267632	1843580		31
62.21	1/2	1/2	236085	1843580		31
61.229	4s $^2S_{1/2}$	6p $^2P^\circ_{1/2}$	0	1633270	40	4,83°
60.975	1/2	3/2	0	1640046	60	4,82,83°

Mo XIV (Cu-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
57.65	$4p\ ^2P^\circ_{3/2}$	$8s\ ^2S_{1/2}$	267632	2002340		31
56.61	1/2	1/2	236085	2002340		31
53.729	$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^4P^\circ_{3/2}$	0	1861190	5	19,107,111°
53.100	1/2	1/2	0	1883240	3	19,107,111°
53.341	$4s\ ^2S_{1/2}$	$7p\ ^2P^\circ_{1/2}$	0	1874730	3	31,107,111°
53.228	1/2	3/2	0	1878710		31,107,111°
53.341	$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^4F^\circ_{3/2}$	0	1874730	3	19,67,107,111°
53.048	$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^2D^\circ_{3/2}$	0	1885090	10	19,67,107,111°
52.753	$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^2P^\circ_{3/2}$	0	1895630	20	19,67,107,111°
52.690	$3d^{10}4s\ ^2S_{1/2}$	1/2	0	1897890	10	19,67,107,111°
52.476	$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^3P)\ ^4D^\circ_{1/2}$	0	1905630	5	19,67,107,111°
52.228	1/2	3/2	0	1914680	5	19,67,107,111°
52.476	$3d^{10}4p\ ^2P^\circ_{3/2}$	$3d^9(^2D)4p^2(^3P)\ ^4F_{5/2}$	267632	2173140	5	111
51.668	1/2	3/2	236085	2171600	5	107,111°
52.460	$3d^{10}4p\ ^2P^\circ_{1/2}$	$3d^9(^2D)4p^2(^1D)\ ^2S_{1/2}$	236085	2142670	2	107,111°
52.420	$3d^{10}4p\ ^2P^\circ_{1/2}$	$3d^9(^2D)4p^2(^1D)\ ^2P_{3/2}$	236085	2143750	2	107,111°
52.024	$3d^{10}4p\ ^2P^\circ_{1/2}$	$3d^9(^2D)4p^2(^3P)\ ^2D_{3/2}$	236085	2158460	8	107,111°
52.015	3/2	5/2	267632	2190210	10	107,111°
52.00	$3d^{10}4p\ ^2P^\circ_{3/2}$	$3d^9(^2D)4p^2(^3P)\ ^2P_{1/2}$	267632	2190700	2	107,111°
51.895	3/2	3/2	267632	2194630	8	107,111°
51.161	1/2	1/2	236085	2190700	1	107,111°
51.531	$3d^{10}4p\ ^2P^\circ_{3/2}$	$3d^9(^2D)4p^2(^1D)\ ^2F_{5/2}$	267632	2208270	1	107,111°
51.434	$3d^{10}4p\ ^2P^\circ_{1/2}$	$3d^9(^2D)4p^2(^1D)\ ^2D_{3/2}$	236085	2180320	1	107,111°
51.398	$3d^{10}4s\ ^2S_{1/2}$	$3d^9(^2D)4s4p(^1P)\ ^2P^\circ_{3/2}$	0	1945600	20	19,67,107,111°
50.788	1/2	1/2	0	1968970	10	19,67,107,111°
50.956	$3d^{10}4p\ ^2P^\circ_{3/2}$	$3d^9(^2D)4p^2(^1S)\ ^2D_{5/2}$	267632	2230110	1	107,111°

Mo XV (Ni-Sequence) IP = 4391000 ± 50000 cm^{-1} (544.4 ± 6 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
58.832	$3d^{10}\ ^1S_0$	$3d^94s\ ^3D_2$	0	1699750		66°,74
57.927	$3d^{10}\ ^1S_0$	$3d^94s\ ^1D_2$	0	1726310		66°,74
50.928	$3d^{10}\ ^1S_0$	$3d^94p\ ^3P^\circ_1$	0	1963550	2	4,19,94,107,111°
50.448	$3d^{10}\ ^1S_0$	$3d^94p\ ^1P^\circ_1$	0	1982230	150	4,19,66,74,94,96,107,111°
49.914	$3d^{10}\ ^1S_0$	$3d^94p\ ^3D^\circ_1$	0	2003440	100	4,19,66,74,94,96,107,111°
36.376	$3d^{10}\ ^1S_0$	$3d^94f\ (^{5/2}_{2}\,^{5/2})^\circ_1$	0	2749060	2.5	94
36.060	$3d^{10}\ ^1S_0$	$3d^94f\ (^{5/2}_{2}\,^{7/2})^\circ_1$	0	2773150	6.5	19,94°
35.368	$3d^{10}\ ^1S_0$	$3d^94f\ (^{3/2}_{2}\,^{5/2})^\circ_1$	0	2827410	12	19,74,94°,96
29.774	$3d^{10}\ ^1S_0$	$3d^95f\ (^{5/2}_{2}\,^{7/2})^\circ_1$	0	3358630	1	94
29.458	$3d^{10}\ ^1S_0$	$3d^95f\ (^{3/2}_{2}\,^{5/2})^\circ_1$	0	3394660	2	94

Mo XVI (Co-Sequence) IP = 4604000 ± 180000 cm^{-1} (570.8 ± 22 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
3709.2	$3p^6 3d^9\ ^2D_{5/2}$	$3p^6 3d^9\ ^2D_{3/2}$	0	26960		100
77.456	$3p^6 3d^9\ ^2D_{3/2}$	$3p^5 3d^{10}\ ^2P^\circ_{3/2}$	26960	1318070	8	4,19,74,92°
75.869	5/2	3/2	0	1318070	25	4,19,74,92°
69.596	3/2	1/2	26960	1463880	15	4,19,74,92°
51.90	$3d^9\ ^2D_{5/2}$	$3d^8(^1G_4)4s\ (4,\frac{1}{2})_{9/2}$	0	1926800		74
52.68	3/2	7/2	26960	1925200		74
53.48	$3d^9\ ^2D_{5/2}$	$3d^8(^3F_3)4s\ (3,\frac{1}{2})_{7/2}$	0	1869800		74
54.33	3/2	7/2	26960	1869800		74
54.07	$3d^9\ ^2D_{5/2}$	$3d^8(^3F_4)4s\ (4,\frac{1}{2})_{7/2}$	0	1849500		74
47.959	$3d^9\ ^2D_{5/2}$	$3d^8(^3F)4p\ ^4D^\circ_{7/2}$	0	2085110	90	5,19,92°,108
47.382	5/2	5/2	0	2110510	30	92
47.871	$3d^9\ ^2D_{3/2}$	$3d^8(^3F)4p\ ^4F^\circ_{3/2}$	26960	2115970	150	5,74,92°,108
47.068	3/2	5/2	26960	2151610	90	5,19,74,92°,108
46.478	5/2	5/2	0	2151610	1000	4,19,74,92°,108
46.378	5/2	5/2	0	2156190	260	4,19,74,92°,108
47.302	$3d^9\ ^2D_{5/2}$	$3d^8(^3F)4p\ ^4G^\circ_{7/2}$	0	2114080	20	5,92°
47.262	5/2	5/2	0	2115860	180	4,5,19,92°,108
47.186	$3d^9\ ^2D_{3/2}$	$3d^8(^3P)4p\ ^4P^\circ_{3/2}$	26960	2146290	140	4,5,19,74,92°,108
47.165	3/2	5/2	26960	2147240	170	5,19,92°,108
46.592	5/2	3/2	0	2146290	80	19,92°
46.573	5/2	5/2	0	2147240	750	4,19,74,92°,108
46.859	$3d^9\ ^2D_{5/2}$	$3d^8(^3F)4p\ ^2F^\circ_{7/2}$	0	2134060	1000	4,74,92°,108
46.877	3/2	5/2	26960	2160260	150	92
46.291	5/2	5/2	0	2160260	650	4,19,74,92°,108
46.841	$3d^9\ ^2D_{5/2}$	$3d^8(^3F)4p\ ^2D^\circ_{5/2}$	0	2134880	900	19,92°,108
46.781	3/2	3/2	26960	2164640	120	19,74,92°,108
46.197	5/2	3/2	0	2164640	110	92°,108
46.712	$3d^9\ ^2D_{3/2}$	$3d^8(^1D)4p\ ^2F^\circ_{5/2}$	26960	2167770	130	4,19,74,92°,108
46.131	5/2	5/2	0	2167770	600	4,19,74,92°,108
45.250	5/2	7/2	0	2209940	30	19,92°
46.623	$3d^9\ ^2D_{3/2}$	$3d^8(^1D)4p\ ^2D^\circ_{3/2}$	26960	2171880	250	19,74,92°,108
46.463	3/2	5/2	26960	2179270	440	19,92°,108
46.043	5/2	3/2	0	2171880	1000	4,19,74,92°,108
45.887	5/2	5/2	0	2179270	200	19,92°,108
46.573	$3d^9\ ^2D_{3/2}$	$3d^8(^3P)4p\ ^4D^\circ_{1/2}$	26960	2174190	750	19,92°,108
46.478	3/2	3/2	26960	2178580	1000	19,92°,108
46.113	3/2	5/2	26960	2195620	300	19,92°,108
45.809	5/2	7/2	0	2182980	500	4,19,74,92°,108
45.545	5/2	5/2	0	2195620	250	4,74,92°,108
46.352	$3d^9\ ^2D_{5/2}$	$3d^8(^3F)4p\ ^2G^\circ_{7/2}$	0	2157400	450	19,92°,108
46.229	$3d^9\ ^2D_{3/2}$	$3d^8(^1D)4p\ ^2P^\circ_{3/2}$	26960	2190160	220	4,19,74,92°,108
45.659	5/2	3/2	0	2190160	300	4,19,74,92°,108

Mo XVI (Co-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
46.043	$3d^9\ ^2D_{3/2}$	$3d^8(^3P)4p\ ^2P^\circ_{3/2}$	26960	2198620	1000	19,92°
45.553	3/2	1/2	26960	2222270	300	4,19,74,92°,108
45.483	5/2	3/2	0	2198620	220	4,19,74,92°,108
46.024	$3d^9\ ^2D_{5/2}$	$3d^8(^1G)4p\ ^2F^\circ_{7/2}$	0	2172780	1600	4,19,74,92°,108
45.756	3/2	5/2	26960	2212530	700	19,92°,108
45.938	$3d^9\ ^2D_{3/2}$	$3d^8(^3P)4p\ ^2D^\circ_{5/2}$	26960	2203870	500	4,19,74,92°,108
45.853	3/2	3/2	26960	2207940	170	19,92°,108
45.290	5/2	3/2	0	2207940	60	19,74,92°,108
45.867	$3d^9\ ^2D_{3/2}$	$3p^8(^3P)4p\ ^2S^\circ_{1/2}$	26960	2207240	150	74,92°,108
45.000	$3d^9\ ^2D_{5/2}$	$3d^8(^1G)4p\ ^2G^\circ_{7/2}$	0	2222220	220	4,19,74,92°,108
44.509	$3d^9\ ^2D_{3/2}$	$3d^8(^1S)4p\ ^2P^\circ_{1/2}$	26960	2273760	100	19,74,92°,108
43.837	3/2	3/2	26960	2308200	30	19,92°
43.324	5/2	3/2	0	2308200	60	19,92°,108
33.992	$3d^9\ ^2D_{3/2}$	$3d^8(^3F_2)4f\ [1]^\circ_{3/2}$	26960	2969100	60	6°,19
33.982	$3d^9\ ^2D_{5/2}$	$3d^8(^3F_4)4f\ [3]^\circ_{5/2}$	0	2942700	40	6
33.853	$3d^9\ ^2D_{3/2}$	$3d^8(^3F_2)4f\ [2]^\circ_{5/2}$	26960	2981300	10	6
33.543	5/2	5/2	0	2981300	50	6°,19
33.812	$3d^9\ ^2D_{5/2}$	$3d^8(^3F_3)4f\ [4]^\circ_{7/2}$	0	2957500	20	6
33.800	$3d^9\ ^2D_{3/2}$	$3d^8(^3P_2)4f\ [2]^\circ_{3/2}$	26960	2985800	30	6°,19
33.760	$3d^9\ ^2D_{5/2}$	$3d^8(^3F_3)4f\ [3]^\circ_{7/2}$	0	2962100	20	6
33.740	$3d^9\ ^2D_{5/2}$	$3d^8(^3F_3)4f\ [1]^\circ_{3/2}$	0	2963800	35	6
33.680	$3d^9\ ^2D_{5/2}$	$3d^8(^3F_3)4f\ [2]^\circ_{5/2}$	0	2969100	35	6°,19
33.591	$3d^9\ ^2D_{5/2}$	$3d^8(^3P_2)4f\ [4]^\circ_{7/2}$	0	2977000	45	6°,19
33.479	$3d^9\ ^2D_{5/2}$	$3d^8(^3F_2)4f\ [3]^\circ_{7/2}$	0	2985800	25	6
33.429	$3d^9\ ^2D_{5/2}$	$3d^8(^3P_2)4f\ [3]^\circ_{5/2}$	0	2991400	20	6
33.347	5/2	7/2	0	2998800	40	6°,19
33.293	$3d^9\ ^2D_{5/2}$	$3d^8(^3P_0)4f\ [3]^\circ_{7/2}$	0	3003600	45	6°,19
33.264	$3d^9\ ^2D_{5/2}$	$3d^8(^3P_1)4f\ [2]^\circ_{5/2}$	0	3006300	10	6
33.235	$3d^9\ ^2D_{5/2}$	$3d^8(^3P_1)4f\ [4]^\circ_{7/2}$	0	3008900	10	6°,19
33.211	$3d^9\ ^2D_{3/2}$	$3d^8(^1G_4)4f\ [1]^\circ_{3/2}$	26960	3038000	15	6°,19
33.100	3/2	1/2	26960	3048400	35	6°,19
32.916	5/2	3/2	0	3038000	50	6°,19,74,96
33.185	$3d^9\ ^2D_{5/2}$	$3d^8(^3P_1)4f\ [3]^\circ_{5/2}$	0	3013400	25	6
33.161	$3d^9\ ^2D_{3/2}$	$3d^8(^1G_4)4f\ [2]^\circ_{5/2}$	26960	3043200	25	6
33.120	$3d^9\ ^2D_{5/2}$	$3d^8(^1D_2)4f\ [3]^\circ_{7/2}$	0	3019300	35	6
33.067	$3d^9\ ^2D_{5/2}$	$3d^8(^1D_2)4f\ [1]^\circ_{3/2}$	0	3024200	25	6
32.981	$3d^9\ ^2D_{3/2}$	$3d^8(^1G_4)4f\ [2]^\circ_{3/2}$	26960	3059000	70	6°,19,74,96
32.691	5/2	3/2	0	3059000	20	6°,19,74
32.860	$3d^9\ ^2D_{5/2}$	$3d^8(^1G_4)4f\ [3]^\circ_{7/2}$	0	3043200	75	6°,19,74,96
32.323	$3d^9\ ^2D_{3/2}$	$3d^8(^1S_0)4f\ [3]^\circ_{5/2}$	26960	3119100	40	6°,19,74
32.078	5/2	7/2	0	3117400	30	6°,19,74
32.061	5/2	5/2	0	3119100	15	6

Mo XVII (Fe-Sequence) IP = 5131000 ± 200000 cm^{-1} (636.2 ± 25 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
4124.7	$3d^8\ ^3F_4$	$3d^8\ ^3F_3$	0	24250		100
83.079	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^1D^\circ_2$	77960	1281600	50	12,84°
82.556	$3p^63d^8\ ^3P_1$	$3p^53d^9\ ^1D^\circ_2$	70310	1281600	20	84
81.261	2	2	51000	1281600	100	12,84°
82.317	$3p^63d^8\ ^1S_0$	$3p^53d^9\ ^3D^\circ_1$	176680	1391470	10	84,89°
81.382	$3p^63d^8\ ^1G_4$	$3p^53d^9\ ^3F^\circ_3$	82420	1311160	20	84
81.080	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^3F^\circ_3$	77960	1311160	20	84
73.122	2	2	77960	1445570	150	12,19,84°
80.734	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3F^\circ_4$	24250	1262860	30	84
79.186	4	4	0	1262860	1500	12,19,84°
77.706	3	3	24250	1311160	20	84
76.269	4	3	0	1311160	600	12,19,84°
70.494	2	2	27030	1445570	5	84
70.367	3	2	24250	1445570	3	84
79.711	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^1D^\circ_2$	27030	1281600	700	12,19,84°
79.532	3	2	24250	1281600	5	84
79.359	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^3F^\circ_3$	51000	1311160	5	84
71.705	2	2	51000	1445570	7	84
79.062	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^3D^\circ_2$	77960	1342800	100	12,84°
77.396	2	3	77960	1370010	5	84
78.019	$3p^63d^8\ ^3P_1$	$3p^53d^9\ ^3P^\circ_1$	70310	1352050	40	12,84°
77.898	0	1	68350	1352050	15	84
77.727	1	0	70310	1356860	30	84
76.863	2	1	51000	1352050	200	12,84°
71.359	1	2	70310	1471690	30	12,19,84°
70.386	2	2	51000	1471690	15	12,19,84°
77.666	$3p^63d^8\ ^1G_4$	$3p^53d^9\ ^3D^\circ_3$	82420	1370010	30	12,84°
77.410	$3p^63d^8\ ^3P_2$	$3p^53d^9\ ^3D^\circ_2$	51000	1342800	20	12,84°
75.816	2	3	51000	1370010	15	84
75.580	0	1	68350	1391470	15	84
74.600	2	1	51000	1391470	5	84
75.840	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3D^\circ_2$	24250	1342800	150	12,84°
74.306	3	3	24250	1370010	200	12,19,84°
73.289	2	1	27030	1391470	200	12,19,84°
72.990	4	3	0	1370010	300	12,19,84°
72.092	$3p^63d^8\ ^1S_0$	$3p^53d^9\ ^1P^\circ_1$	176680	1563830	20	84,89°
71.750	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^3P^\circ_2$	77960	1471690	5	84
69.088	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3P^\circ_2$	24250	1471690	30	84
68.390	$3p^63d^8\ ^1G_4$	$3p^53d^9\ ^1F^\circ_3$	82420	1544660	800	12,19,84°
68.188	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^1F^\circ_3$	77960	1544660	3	84
67.302	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^1P^\circ_1$	77960	1563830	15	12,19,84°

Mo XVII (Fe-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
66.100	$3p^6 3d^8\ ^3P_2$	$3p^5 3d^9\ ^1P^\circ_1$	51000	1563830	3	84
65.891	$3p^6 3d^8\ ^3F_2$	$3p^5 3d^9\ ^1F^\circ_3$	27030	1544660	1	84
65.770	3	3	24250	1544660	4	84
44.045	$3d^8\ ^3F_4$	$3d^7 4p\ (1)_4$	0	2270430	5	109
43.992	$3d^8\ ^3P_2$	$3d^7 4p\ (3)_3$	51000	2324090	10	109
43.802	$3d^8\ ^3P_2$	$3d^7 4p\ (4)_3$	51000	2334250	5	109
43.553	$3d^8\ ^3P_1$	$3d^7 4p\ (9)_2$	70310	2366360	10	109
43.529	$3d^8\ ^3F_4$	$3d^7 4p\ (2)_4$	0	2297320	15	109
43.510	$3d^8\ ^3P_2$	$3d^7 4p\ (6)_3$	51000	2349350	8	109
43.446	$3d^8\ ^1G_4$	$3d^7 4p\ (7)_5$	82420	2383840	15	109
43.362	$3d^8\ ^3P_1$	$3d^7 4p\ (10)_2$	70310	2376490	15	109
43.340	$3d^8\ ^3F_2$	$3d^7 4p\ (4)_3$	27030	2334250	5	109
43.285	$3d^8\ ^1G_4$	$3d^7 4p\ (11)_4$	82420	2393213	25	109
43.256	$3d^8\ ^3F_4$	$3d^7 4p\ (2)_5$	0	2311790	20	109
43.224	$3d^8\ ^3P_1$	$3d^7 4p\ (8)_1$	70310	2383830	5	109
43.198	$3d^8\ ^3P_2$	$3d^7 4p\ (9)_2$	51000	2366360	20	109
43.144	$3d^8\ ^3P_1$	$3d^7 4p\ (9)_1$	70310	2388150	5	109
43.105	$3d^8\ ^3F_4$	$3d^7 4p\ (3)_4$	0	2319900	25	109
43.029	$3d^8\ ^3F_4$	$3d^7 4p\ (3)_3$	0	2324090	5	109
42.980	$3d^8\ ^3F_2$	$3d^7 4p\ (4)_1$	27030	2353690	5	109
42.939	$3d^8\ ^1G_4$	$3d^7 4p\ (9)_5$	82420	2411280	15	109
42.891	$3d^8\ ^1G_4$	$3d^7 4p\ (13)_4$	82420	2413910	50	109
42.846	$3d^8\ ^3F_4$	$3d^7 4p\ (4)_3$	0	2334250	30	109
42.817	$3d^8\ ^1D_2$	$3d^7 4p\ (16)_3$	77960	2413480	5	109
42.802	$3d^8\ ^3F_3$	$3d^7 4p\ (8)_3$	24250	2360950	5	109
42.767	$3d^8\ ^3F_4$	$3d^7 4p\ (4)_5$	0	2338250	5	109
42.704	$3d^8\ ^3F_4$	$3d^7 4p\ (5)_4$	0	2341690	35	109
42.647	$3d^8\ ^3F_3$	$3d^7 4p\ (9)_3$	24250	2368938	5	109
42.603	$3d^8\ ^3P_2$	$3d^7 4p\ (14)_3$	51000	2398907	30	109
42.564	$3d^8\ ^3F_4$	$3d^7 4p\ (6)_4$	0	2349981	5	109
42.543	$3d^8\ ^1D_2$	$3d^7 4p\ (14)_1$	77960	2429152	25	109

Mo XVII (Fe-Sequence) — Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
42.489	$3d^8\ ^1S_0$	$3d^74p\ (19)_1$	176680	2530230	30	109
42.473	$3d^8\ ^1G_4$	$3d^74p\ (10)_5$	82420	2436880	40	109
42.400	$3d^8\ ^3F_4$	$3d^74p\ (5)_5$	0	2358500	50	109
42.387	$3d^8\ ^3F_3$	$3d^74p\ (10)_4$	24250	2383490	50	109
42.290	$3d^8\ ^3P_1$	$3d^74p\ (19)_2$	70310	2434930	5	109
42.245	$3d^8\ ^3F_3$	$3d^74p\ (13)_3$	24250	2391778	30	109
42.200	$3d^8\ ^3F_3$	$3d^74p\ (14)_2$	24250	2394635	5	109
42.163	$3d^8\ ^1D_2$	$3d^74p\ (20)_3$	77960	2449993	5	109
42.116	$3d^8\ ^3F_4$	$3d^74p\ (10)_3$	0	2374600	15	109
42.089	$3d^8\ ^3P_2$	$3d^74p\ (18)_3$	51000	2426890	25	109
42.061	$3d^8\ ^3F_4$	$3d^74p\ (6)_5$	0	2377729	5	109
41.954	$3d^8\ ^3F_4$	$3d^74p\ (7)_5$	0	2383840	19	109
41.908	$3d^8\ ^3F_4$	$3d^74p\ (12)_3$	0	2386200	30	109
41.844	$3d^8\ ^1G_4$	$3d^74p\ (21)_3$	82420	2472230	20	109
41.767	$3d^8\ ^3P_2$	$3d^74p\ (20)_2$	51000	2445644	5	109
41.576	$3d^8\ ^3F_3$	$3d^74p\ (15)_4$	24250	2430370	5	109
41.490	$3d^8\ ^3F_4$	$3d^74p\ (9)_5$	0	2411280	5	109
41.446	$3d^8\ ^3P_1$	$3d^74p\ (23)_2$	70310	2483140	5	109
41.040	$3d^8\ ^1G_4$	$3d^74p\ (23)_3$	82420	2519060	10	109

Mo XVIII (Mn-Sequence) IP = 5660000 ± 270000 cm^{-1} (701.7 ± 28 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
83.428	$3p^63d^7\ ^4F_{9/2}$	$3p^53d^8\ (1)_{11/2}$	0	1198630	10	110
81.988	$3p^63d^7\ ^4P_{5/2}$	$3p^53d^8\ (2)_{7/2}$	60740	1280420	10	110
81.859	$3p^63d^7\ ^2G_{9/2}$	$3p^53d^8\ (2)_{9/2}$	62500	1284110	25	110
80.686	$3p^63d^7\ ^2G_{7/2}$	$3p^53d^8\ (4)_{7/2}$	81500	1320790	30	110
80.492	$3p^63d^7\ ^4F_{9/2}$	$3p^53d^8\ (1)_{9/2}$	0	1242360	45	110
80.364	$3p^63d^7\ ^2G_{9/2}$	$3p^53d^8\ (3)_{7/2}$	62500	1306770	20	110
80.201	$3p^63d^7\ ^4P_{5/2}$	$3p^53d^8\ (3)_{5/2}$	60740	1307600	30	110
79.653	$3p^63d^7\ ^2H_{9/2}$	$3p^53d^8\ (5)_{7/2}$	107650	1362690	20	110
79.457	$3p^63d^7\ ^4F_{7/2}$	$3p^53d^8\ (2)_{7/2}$	21850	1280420	30	110
78.735	$3p^63d^7\ ^2H_{11/2}$	$3p^53d^8\ (3)_{9/2}$	84900	1354790	40	110
78.255	$3p^63d^7\ ^2_3D_{5/2}$	$3p^53d^8\ (4)_{3/2}$	94000	1372180	10	110
78.053	$3p^63d^7\ ^2G_{7/2}$	$3p^53d^8\ (5)_{7/2}$	81500	1362690	25	110
77.875	$3p^63d^7\ ^4F_{9/2}$	$3p^53d^8\ (2)_{9/2}$	0	1284110	40	110
77.552	$3p^63d^7\ ^2_3D_{5/2}$	$3p^53d^8\ (6)_{5/2}$	94000	1383380	10	110
77.415	$3p^63d^7\ ^2G_{9/2}$	$3p^53d^8\ (3)_{9/2}$	62500	1354790	45	110
76.992	$3p^63d^7\ ^4F_{7/2}$	$3p^53d^8\ (4)_{7/2}$	21850	1320790	10	110
76.870	$3p^63d^7\ ^4F_{7/2}$	$3p^53d^8\ (4)_{5/2}$	21850	1322740	45	110
76.812	$3p^63d^7\ ^4P_{5/2}$	$3p^53d^8\ (5)_{7/2}$	60740	1362690	15	110
76.647	$3p^63d^7\ ^4F_{5/2}$	$3p^53d^8\ (3)_{3/2}$	31440	1336120	25	110
76.529	$3p^63d^7\ ^4F_{9/2}$	$3p^53d^8\ (3)_{7/2}$	0	1306770	30	110
75.712	$3p^63d^7\ ^4F_{9/2}$	$3p^53d^8\ (4)_{7/2}$	0	1320790	20	110
75.309	$3p^63d^7\ ^4P_{5/2}$	$3p^53d^8\ (5)_{3/2}$	60740	1388018	20	110
74.407	$3p^63d^7\ ^2G_{9/2}$	$3p^53d^8\ (6)_{7/2}$	62500	1406680	30	110
74.303	$3p^63d^7\ ^4P_{5/2}$	$3p^53d^8\ (6)_{7/2}$	60740	1406680	45	110
74.280	$3p^63d^7\ ^4F_{5/2}$	$3p^53d^8\ (5)_{5/2}$	31440	1377840	25	110
74.020	$3p^63d^7\ ^2F_{7/2}$	$3p^53d^8\ (7)_{7/2}$	141650	1492600	15	110
73.944	$3p^63d^7\ ^4F_{3/2}$	$3p^53d^8\ (5)_{3/2}$	35936	1388018	10	110
73.812	$3p^63d^7\ ^4F_{9/2}$	$3p^53d^8\ (3)_{9/2}$	0	1354790	15	110
73.747	$3p^63d^7\ ^4F_{7/2}$	$3p^53d^8\ (5)_{5/2}$	21850	1377840	20	110
73.676	$3p^63d^7\ ^4F_{5/2}$	$3p^53d^8\ (5)_{3/2}$	31440	1388018	15	110

Mo XVIII (Mn-Sequence) – Continued

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
73.446	$3p^63d^7\ ^4F_{7/2}$	$3p^53d^8\ (6)_{5/2}$	21850	1383380	10	110
73.380	$3p^63d^7\ ^4F_{9/2}$	$3p^53d^8\ (5)_{7/2}$	0	1362690	20	110
72.679	$3p^63d^7\ ^2F_{7/2}$	$3p^53d^8\ (8)_{7/2}$	141650	1517570	15	110
72.211	$3p^63d^7\ ^4F_{7/2}$	$3p^53d^8\ (6)_{7/2}$	21850	1406680	30	110
72.171	$3p^63d^7\ ^2_3D_{5/2}$	$3p^53d^8\ (9)_{5/2}$	94000	1479650	25	110
72.089	$3p^63d^7\ ^2H_{9/2}$	$3p^53d^8\ (4)_{9/2}$	107650	1494810	35	110
71.523	$3p^63d^7\ ^2G_{7/2}$	$3p^53d^8\ (9)_{5/2}$	81500	1479650	25	110
71.461	$3p^63d^7\ ^2_1D_{5/2}$	$3p^53d^8\ (9)_{7/2}$	210770	1610200	25	110
71.196	$3p^63d^7\ ^2_1D_{5/2}$	$3p^53d^8\ (11)_{5/2}$	210770	1615600	20	110
71.089	$3p^63d^7\ ^4F_{9/2}$	$3p^53d^8\ (6)_{7/2}$	0	1406680	25	110
70.926	$3p^63d^7\ ^2H_{9/2}$	$3p^53d^8\ (8)_{7/2}$	107650	1517570	30	110
70.121	$3p^63d^7\ ^2F_{5/2}$	$3p^53d^8\ (9)_{3/2}$	129033	1553198	15	110
69.929	$3p^63d^7\ ^2G_{9/2}$	$3p^53d^8\ (7)_{7/2}$	62500	1492600	35	110
69.675	$3p^63d^7\ ^2G_{7/2}$	$3p^53d^8\ (8)_{7/2}$	81500	1517570	25	110
69.212	$3p^63d^7\ ^2_1D_{3/2}$	$3p^53d^8\ (7)_{1/2}$	199694	1643278	25	110
68.727	$3p^63d^7\ ^2G_{9/2}$	$3p^53d^8\ (8)_{7/2}$	62500	1517570	30	110
68.128	$3p^63d^7\ ^2F_{5/2}$	$3p^53d^8\ (10)_{3/2}$	129033	1597386	30	110
67.984	$3p^63d^7\ ^4F_{7/2}$	$3p^53d^8\ (7)_{7/2}$	21850	1492600	22	110
67.845	$3p^63d^7\ ^2F_{7/2}$	$3p^53d^8\ (11)_{5/2}$	141650	1615600	40	19,110°
67.648	$3p^63d^7\ ^2G_{7/2}$	$3p^53d^8\ (10)_{5/2}$	81500	1559730	40	19,110°
67.141	$3p^63d^7\ ^2H_{11/2}$	$3p^53d^8\ (5)_{9/2}$	84900	1574310	48	19,110°
66.536	$3p^63d^7\ ^2H_{9/2}$	$3p^53d^8\ (9)_{7/2}$	107650	1610200	55	19,110°
66.146	$3p^63d^7\ ^2G_{9/2}$	$3p^53d^8\ (5)_{9/2}$	62500	1574310	25	110

Mo XXIII (Ca-Sequence) IP = 8230000 ± 80000 cm^{-1} (1020 ± 10 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
3554.3	$3p^63d^2\ ^3F_2$	$3p^63d^2\ ^3F_3$	0	28135		100

Mo XXIV (K-Sequence) IP = 8730000 ± 89000 cm^{-1} (1083 ± 11 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
2687.3	$3d\ ^2D_{3/2}$	$3d\ ^2D_{5/2}$	0	37212		100
21.854	$3d\ ^2D_{5/2}$	$4f\ ^2F^\circ_{7/2}$	37212	4613000	5	96
21.684	3/2	5/2	0	4611700	5	96

Mo XXV (Ar-Sequence) IP = 10190000 ± 100000 cm^{-1} (1264 ± 13 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
18.500	$3p^6\ ^1S_0$	$3p^54d\ ^1P^\circ_1$	0	5405400	5	96
17.979	$3p^6\ ^1S_0$	$3p^54d\ ^3D^\circ_1$	0	5562000	6	96

Mo XXVI (Cl-Sequence) IP = 10680000 ± 100000 cm^{-1} (1324 ± 13 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
534.9	$3s^23p^5\ ^2P^\circ_{3/2}$	$3s^23p^5\ ^2P^\circ_{1/2}$	0	186950		36

Mo XXVII (S-Sequence) IP = 11190000 ± 110000 cm^{-1} (1387 ± 14 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
2351.5	$3s^23p^4\ ^3P_1$	$3s^23p^4\ ^1D_2$	175520	218050		36,55°
458.6	2	2	0	218050		36
569.8	$3s^23p^4\ ^3P_2$	$3s^23p^4\ ^3P_1$	0	175520		36
397.2	$3s^23p^4\ ^3P_1$	$3s^23p^4\ ^1S_0$	175520	427300		36,55°

Mo XXVIII (P-Sequence) IP = 11690000 ± 110000 cm^{-1} (1449 ± 14 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
2286.1	$3s^23p^3\ ^2D^\circ_{3/2}$	$3s^23p^3\ ^2D^\circ_{5/2}$	156960	200700		36
643.0	$3s^23p^3\ ^2P^\circ_{1/2}$	$3s^23p^3\ ^2P^\circ_{3/2}$	257930	413450		37
637.1	$3s^23p^3\ ^4S^\circ_{3/2}$	$3s^23p^3\ ^2D^\circ_{3/2}$	0	156960		37
498.2	3/2	5/2	0	200700		37
470.0	$3s^23p^3\ ^2D^\circ_{5/2}$	$3s^23p^3\ ^2P^\circ_{3/2}$	200700	413450		37
389.9	3/2	3/2	156960	413450		37
387.7	$3s^23p^3\ ^4S^\circ_{3/2}$	$3s^23p^3\ ^2P^\circ_{1/2}$	0	257930		37

Mo XXIX (Si-Sequence) IP = 12380000 ± 120000 cm^{-1} (1535 ± 15 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
2841.9	$3s^23p^2\ ^3P_1$	$3s^23p^2\ ^3P_2$	161670	196870		36,100°
618.5	0	1	0	161670		36
530.3	$3s^23p^2\ ^3P_2$	$3s^23p^2\ ^1D_2$	196870	385450		36,55°
446.9	1	2	161670	385450		36,55°
325.3	$3s^23p^2\ ^3P_1$	$3s^23p^2\ ^1S_0$	161670	469100		36

Mo XXX (Al-Sequence) IP = 12910000 ± 130000 cm^{-1} (1601 ± 16 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
490.1	$3s^23p\ ^2P^\circ_{1/2}$	$3s^23p\ ^2P^\circ_{3/2}$	0	204040		36
108.29	$3s^23p\ ^2P^\circ_{3/2}$	$3s^23d\ ^2D_{5/2}$	204040	1127500		17
92.511	1/2	3/2	0	1081000		17
18.056	$3s^23d\ ^2D_{5/2}$	$3s^24f\ ^2F^\circ_{7/2}$	1127500	6666000		17
17.964	3/2	5/2	1081000	6648000		17
18.004	$3s^23p\ ^2P^\circ_{3/2}$	$3s^24s\ ^2S_{1/2}$	204040	5760000		17
17.355	1/2	1/2	0	5760000		17

Mo XXXI (Mg-Sequence) 13920000 ± 140000 cm^{-1} (1726 ± 17 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
609.8	$3s3p\ ^3P^o_2$	$3s3p\ ^1P^o_1$	698100	862140		36
577.5	$3s3p\ ^3P^o_1$	$3s3p\ ^3P^o_2$	524900	698100		36
190.5	$3s^2\ ^1S_0$	$3s3p\ ^3P^o_1$	0	524900		48
115.991	$3s^2\ ^1S_0$	$3s3p\ ^1P^o_1$	0	862140	9	17,54,74,88°
113.896	$3s3p\ ^1P^o_1$	$3s3d\ ^1D_2$	862140	1740130	10	17,74,88°
112.654	$3s3p\ ^3P^o_2$	$3s3d\ ^3D_3$	698100	1585770	10	17,74,88°
96.52	1	2	524900	1561000	4	74
17.871	$3s3d\ ^1D_2$	$3s4f\ ^1F^o_3$	1740130	7335800		17
17.578	$3s3d\ ^3D_3$	$3s4f\ ^3F^\circ_3$	1585770	7275000		17
17.556	3	4	1585770	7281800		17
17.500	2	3	1561000	7275000		17
17.445	1	2				17
14.928	$3s^2\ ^1S_0$	$3s4p\ ^3P^o_0$	0	6698800		17
14.745	$3s^2\ ^1S_0$	$3s4p\ ^1P^o_0$	0	6782000		17°,74,96

Mo XXXII (Na-Sequence) IP = 14445000 ± 4000 cm^{-1} (1791.0 ± 0.5 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
176.62	$3s\ ^2S_{1/2}$	$3p\ ^2P^\circ_{1/2}$	0	566190	4	17°,54,74
127.814	1/2	3/2	0	782390	10	17°,54,74,90
126.937	$3p\ ^2P^\circ_{3/2}$	$3d\ ^2D_{5/2}$	782390	1570180	9	17°,74,90
104.226	1/2	3/2	566190	1525280	9	17°,74
18.72	$3d\ ^2D_{3/2}$	$4p\ ^2P^\circ_{1/2}$	1525280	6868100	1	17
18.591	5/2	3/2	1570180	6956000	3	17,74°
18.431	3/2	3/2	1525280	6956000	5	17
17.165	$3d\ ^2D_{5/2}$	$4f\ ^2F^\circ_{5/2}$	1570180	7391400	3	17
17.148	5/2	7/2	1570180	7401800	8	17,74°,96
17.047	3/2	5/2	1525280	7391400	7	17,74°
17.099	$3p\ ^2P^\circ_{3/2}$	$4s\ ^2S_{1/2}$	782390	6629500	2	17,74°,96
16.496	1/2	1/2	566190	6629500	2	17,74°
15.509	$3p\ ^2P^\circ_{3/2}$	$4d\ ^2D_{3/2}$	782390	7231100	2	17,74°
15.460	3/2	5/2	782390	7250700	10	17,74°
15.002	1/2	3/2	566190	7231100	6	17,74°
14.560	$3s\ ^2S_{1/2}$	$4p\ ^2P^\circ_{1/2}$	0	6868100	6	17,74°
14.376	1/2	3/2	0	6956000	10	17,74°,96
12.284	$3d\ ^2D_{5/2}$	$5p\ ^2P^\circ_{3/2}$	1570180	9735200	1	17
11.931	$3d\ ^2D_{5/2}$	$5f\ ^2F^\circ_{7/2}$	1570180	9951700	6	17,74°
11.875	3/2	5/2	1525280	9946300	5	17,74°
10.994	$3p\ ^2P^\circ_{3/2}$	$5d\ ^2D_{5/2}$	782390	9878300	7	17,74°
10.749	1/2	3/2	566190	9869400	4	17,74°
10.323	$3s\ ^2S_{1/2}$	$5p\ ^2P^\circ_{1/2}$	0	9687100	2	74
10.272	1/2	3/2	0	9735200	3	74
10.241	$3d\ ^2D_{5/2}$	$6f\ ^2F^\circ_{7/2}$	1570180	11334800	3	74
10.197	3/2	5/2	1525280	11332100	2	74

Mo XXXIII (Ne-Sequence) IP = 34330000 ± 340000 cm^{-1} (4257 ± 42 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
5.204	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{3/2})3s\ (^{3\,1}_{2,2})^\circ_1$	0	19220000	9	2,16,52°,96
4.980	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{1/2})3s\ (^{1\,1}_{2,2})^\circ_1$	0	20080000	6	2,16,52°,96
4.8516	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{3/2})3d\ (^{3\,3}_{2,2})^\circ_1$	0	20612000	7	3°,16,52[Δ]
4.8044	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{3/2})3d\ (^{3\,5}_{2,2})^\circ_1$	0	20814000	10	2,3°,16,52[Δ],96
4.6312	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{1/2})3d\ (^{1\,3}_{2,2})^\circ_1$	0	21593000	8	2,3°,16,52[Δ]
4.4647	$2s^22p^6\ ^1S_0$	$2s2p^6(^2S_{1/2})3p\ (^{1\,1}_{2,2})^\circ_1$	0	22398000	5	2,3°,16,52[Δ]
4.4181	$2s^22p^6\ ^1S_0$	$2s2p^6(^2S_{1/2})3p\ (^{1\,3}_{2,2})^\circ_1$	0	22634000	4	2,3°,16,52[Δ]
3.809	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{3/2})4s\ (^{3\,1}_{2,2})^\circ_1$	0	26250000	2	16°,18
3.684	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{3/2})4d\ (^{3\,5}_{2,2})^\circ_1$	0	27140000	12	16°,18
3.763	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{1/2})4s\ (^{1\,1}_{2,2})^\circ_1$	0	26570000	1.2	16°,18
3.636	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{1/2})4d\ (^{1\,3}_{2,2})^\circ_1$	0	27500000	7	16°,18
3.42	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{3/2})5d\ (^{3\,5}_{2,2})^\circ_1$	0	29200000	3.5	18
3.32	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{1/2})5d\ (^{1\,3}_{2,2})^\circ_1$	0	30100000	2.3	18
3.26	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{3/2})6d\ (^{3\,5}_{2,2})^\circ_1$	0	30700000	1.8	18
3.18	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{1/2})6d\ (^{1\,3}_{2,2})^\circ_1$	0	31400000	1.1	18
3.18	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{3/2})7d\ (^{3\,5}_{2,2})^\circ_1$	0	31400000	1.1	18
3.09	$2p^6\ ^1S_0$	$2p^5(^2P^\circ_{1/2})7d\ (^{1\,3}_{2,2})^\circ_1$	0	32400000	0.8	18

Mo XXXIV (F-Sequence) IP = 35730000 ± 350000 cm^{-1} (4430 ± 44 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
112.80[P]	$2p^5\ ^2P^\circ_{3/2}$	$2p^5\ ^2P^\circ_{1/2}$	0	886200		38,86°
56.527	$2s^22p^5\ ^2P^\circ_{1/2}$	$2s2p^6\ ^2S_{1/2}$	886200	2665300		86
37.661	3/2	1/2	0	2665300		86
5.536	$2p^5\ ^2P^\circ_{3/2}$	$2p^4(^3P)3d\ ^2F_{5/2}$	0	18060000		14
4.506	$2p^5\ ^2P^\circ_{3/2}$	$2p^4(^1D)3d\ ^2F_{5/2}$	0	22193000		14
4.550	$2p^5\ ^2P^\circ_{3/2}$	$2p^4(^3P)3d\ ^2D_{3/2}$	0	21978000		14
4.521	3/2	5/2	0	22119000		14
4.503	$2p^5\ ^2P^\circ_{3/2}$	$2p^4(^1D)3d\ ^2D_{5/2}$	0	22207000		14
4.480	3/2	3/2	0	22321000		14
4.493	$2p^5\ ^2P^\circ_{1/2}$	$2p^4(^1S)3d\ ^2D_{3/2}$	886200	23143000		14
4.512	$2p^5\ ^2P^\circ_{3/2}$	$2p^4(^1D)3d\ ^2S_{1/2}$	0	22163000		14
4.506	$2p^5\ ^2P^\circ_{3/2}$	$2p^4(^1D)3d\ ^2P_{3/2}$	0	22193000		14
4.472	3/2	1/2	0	22361000		14

Mo XL (Li-Sequence) IP = 46074000 ± 40000 cm^{-1} (5712.4 ± 5 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
0.6912	$1s^22p\ ^2P^\circ_{1/2}$	$1s2p^2\ ^4P_{3/2}$	691591	145366000		10°,106
0.6859	1/2	5/2	691591	146484000		10°,106
0.6893	$1s^22p\ ^2P^\circ_{1/2}$	$1s2p^2\ ^2P_{3/2}$	691591	145766000		10°,106
0.6893	$1s^22s\ ^2S_{1/2}$	$1s2s(^3S)2p\ ^2P^\circ_{3/2}$	0	145075000		10
0.6893	$1s^22p\ ^2P^\circ_{1/2}$	$1s2p^2\ ^2D_{3/2}$	691591	145265000		10°,106
0.6885	$1s^22p\ ^2P^\circ_{3/2}$	$1s2p^2\ ^2S_{1/2}$	1705591	146948000		10°,106
0.6885	$1s^22s\ ^2S_{1/2}$	$1s2s(^1S)2p\ ^2P^\circ_{1/2}$	0	145243000		10
0.6859	$1s^22s\ ^2S_{1/2}$	$1s2s2p\ ^4P^\circ_{5/2}$	0	145793000		10

Mo XLI (He-Sequence) IP = 192047000 ± 200000 cm^{-1} (23811 ± 25 eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
0.6923	$1s^2\ ^1S_0$	$1s2p\ ^3P^\circ_1$	0	144454000		10°,105,106
0.6878	0	2	0	145463000		10°,105,106
0.6870	$1s^2\ ^1S_0$	$1s2p\ ^1P^\circ_1$	0	145657000		10°,105,106
0.672	$1s2p\ ^1P^\circ_1$	$2p^2\ ^1S_0$	145657000	294470000		105°,106
0.672	$1s2p\ ^1P^\circ_1$	$2p^2\ ^1D_2$	145657000	294470000		105°,106
0.672	$1s2s\ ^3S_1$	$2s2p\ ^3P^\circ_2$	143971000	292800000		105°,106

Mo XLII (H-Sequence) IP = 198180000 ± 10000 cm^{-1} (24571.2 ± 1.2eV)

Wavelength (Å)	Classification		Energy Levels (cm^{-1})		Int.	Refs.
0.6685	$1s\ ^2S_{1/2}$	$2p\ ^2P^o_{3/2}$	0	149500200		45,105°
0.5701	$1s\ ^2S_{1/2}$	$3p\ ^2P^o_{3/2}$	0	176501610		45,105°
0.5701	1/2	1/2	0	176142500		45,105°

6. References for Tables and Comments

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