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Spectral Data for Highly Ionized Molybdenum, Mo VI - Mo XLII

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Wavelengths and energy levels for the molybdenum ions Mo VI to Mo XLII are compiled for use in diagnostics of high temperature plasmas.

Keywords: Molybdenum, Highly Ionized Atom, Wavelength, Energy Level, Intensity, Plasma Diagnostics

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高電離モリブデンイオン，Mo VI－Mo XLII，のスペクトルデータ

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高温プラズマ診断の基礎データとして，モリブデンイオン，Mo VI－Mo XLII，の遷移波長とエネルギー準位のデータを収集した。

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1. Introduction

Tables of spectroscopic data have been prepared for the ions Mo VI to Mo XLII. These data are important in association with the diagnostics of high-temperature plasmas in tokamak type devices. Molybdenum is one of the structural materials of tokamaks. When Mo ions enter into a high-temperature plasma as impurity, they substantially increase the energy losses of the plasma. Similar tables were published by Mori et al.(1979)[1] and Mori et al.(1985)[2] for the iron ions, Fe VIII - Fe XXVI, and the titanium ions, Ti V - Ti XXII.

Shown in figure 1 is caluculated ionization potential of the Mo ions of Carlson et al.(1970)[3] for lack of experimental values except for several ionic species. This figure will be useful for estimation of the main ionization stages at a given plasma temperature.

The present tables were prepared as follows: The available spectral data for the molybdenum spectra above Mo VI were collected from published articles. Table 1 lists references for each ion. When several references, particularly for wavelength data, were available, the data were critically reviewed and the most reliable value in our judgement with emphasis on internal consistency was selected from the collected data. The values for the energy levels have been either taken from the original article or estimated from the Ritz combination principle.

Prior to the present compilation, Chaghtai and Ahmad (1982)[4] published the energy level tables of Mo I - Mo XLII.

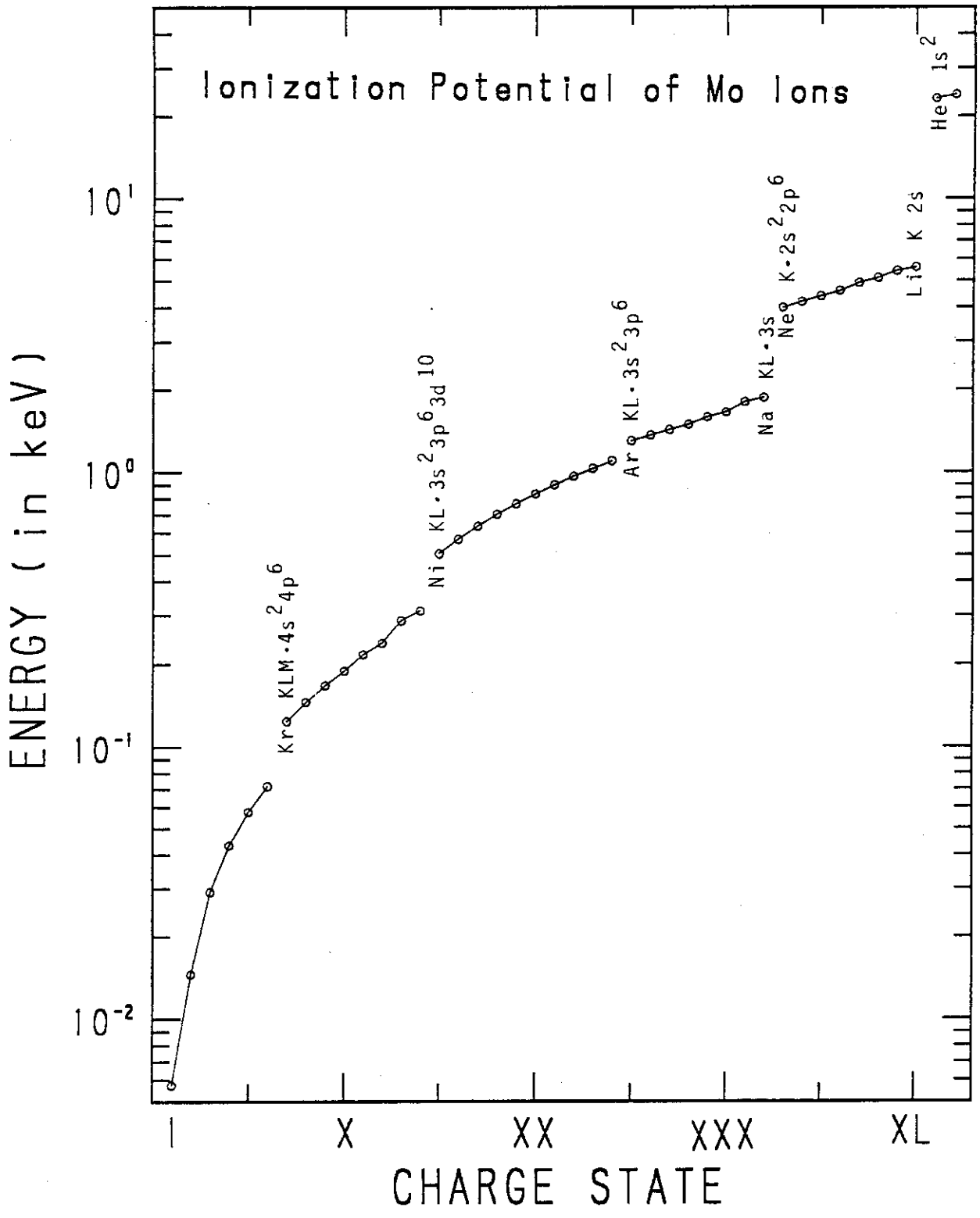

Fig. 1 Ionization potential versus charge state of Mo ions (Z=42).

Table 1 Index relating references to Mo ions. Roman numerals attached to element symbol Mo refer to the ionicity, *i.e.*, $Z-N+1$, where Z is the atomic number and N is the number of electron. For example, Mo XIV stands for Mo^{+13}. References are given in Section 5.

Ion	References
Mo VI	26,42,66,91
Mo VII	20,21,26,70
Mo VIII	20,23,24,26,39,42
Mo IX	20,22,25,42,55,69, 71
Mo X	8,42,68,69,76,68,
Mo XI	69
Mo XII	4,42
Mo XIII	1,4,9,11,19,36,42, 45,46,49,72,86,87, 93,98,99
Mo XIV	4,19,29,30,32,40, 42,44,48,49,50,52, 60,63,72,73,74,93, 97,98
Mo XV	4,19,59,61,65,83, 84,85,93,97
Mo XVI	4,5,6,19,37,61,65, 78,82,84,85,89,94
Mo XVII	12,19,36,37,41,51, 61,62,65,75,80,84, 85,89,95
Mo XVIII	19,41,61,84,85,96
Mo XIX	61,84,85
Mo XX	61,84,85
Mo XXI	61,84,85
Mo XXII	61,84,85
Mo XXIII	61,84,85,89
Mo XXIV	58,81,84,85,88,89
Mo XXV	81,84,85
Mo XXVI	33,90
Mo XXVII	33,90
Mo XXVIII	33,34,90
Mo XXIX	33,54,89,90
Mo XXX	17,28,33,54,58,65, 88,90
Mo XXXI	9,15,17,18,27,28, 31,33,43,49,53,54, 58,65,79,81,84,85, 99
Mo XXXII	15,17,18,28,38,47, 49,54,57,58,65,81, 84,85
Mo XXXIII	2,3,13,16,18,47, 54,58,64,81,84,85
Mo XXXIV	14,18,35,77
Mo XXXV	50
Mo XXXVI	
Mo XXXVII	
Mo XXXVIII	
Mo XXXIX	7,53
Mo XL	7,10,56,58
Mo XLI	10,67,92
Mo XLII	92

Acknowledgments

The authors would like to express their thanks to Dr. N. Shikazono and Dr. S. Igarasi for their encouragement during this work.

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2. Brief Comments on Each Molybdenum Ion

Mo VI (Rb-Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^6 4d\ ^2D_{3/2}$

The twenty-seven transitions from the $4p^5 4d5s$ levels to the $4p^6 4d$ ground levels were identified and the nineteen levels of the $4p^5 4d5s$ configuration were established by Mushtag et al.(1979)[66]. The uncertainty of the wavelengths is ±0.005 Å. Unconventional term symbol in table are defined as follows:

$9E_{3/2}$: $(^3F^\circ)^4F^\circ_{3/2} + (^1D^\circ)^2D^\circ_{3/2}{}^\dagger$;

$10E_{5/2}$: $(^3F^\circ)^2F^\circ_{5/2} + (^1D^\circ)^2D^\circ_{5/2}{}^\dagger$;

$11E_{7/2}$: $(^3D^\circ)^4D^\circ_{7/2} + (^1F^\circ)^2F^\circ_{7/2}{}^\dagger$;

$12E_{5/2}$: $(^3D^\circ)^2D^\circ_{5/2} + (^1F^\circ)^2F^\circ_{5/2}$;

$13E_{5/2}$: $(^1D^\circ)^2D^\circ_{5/2} + (^3F^\circ)^2F^\circ_{5/2} + (^3F^\circ)^4F^\circ_{5/2} + (^3D^\circ)^4D^\circ_{5/2}$;

$14E_{3/2}$: $(^1D^\circ)^2D^\circ_{3/2} + (^3D^\circ)^2D^\circ_{3/2}{}^\dagger$;

$15E_{5/2}$: $(^3D^\circ)^4D^\circ_{5/2} + (^1D^\circ)^2D^\circ_{5/2}$;

$17E_{7/2}$: $(^1F^\circ)^2F^\circ_{7/2} + (^3D^\circ)^4D^\circ_{7/2}{}^\dagger$;

$18E_{5/2}$: $(^3D^\circ)^2D^\circ_{5/2} + (^1F^\circ)^2F^\circ_{5/2}$;

where † denotes that contribution of the second state is low.

The $4d\ ^2D_{5/2} - 4f\ ^2F^\circ_{7/2}$, $4d\ ^2D_{3/2} - 5p\ ^2P^\circ_{1/2,3/2}$, and $4d\ ^2D_{5/2} - 5p\ ^2P^\circ_{3/2}$ transitions were first identified by Charles[26] and observed in the Alkator A tokamak plasma by Finkenthal et al.(1981)[42].

Tauheed et al.(1985)[91] observed 60 lines due to the $4p^6 4d\ ^2D_{3/2,5/2} - 4p^5 4d^2$ transitions in the wavelength region from 238 to 347 Å and established 38 levels out of the total of 45 levels. They also identified the $4p^6 5s$, $4p^6 5d - 4p^5 4d^2$ and $4p^5 4d^2 - 4p^6 6d$, $4p^6 ng(n=6,7)$ transitions. The uncertainty of the wavelengths is ±0.015 ∿ ± 0.03 Å.

Mo VII (Kr-Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^6\ ^1S_0$

Chaghtai (1970)[21] observed the nine transitions to the $4p^6\ ^1S_0$ ground state from levels with J=1 in the $4p^5 n\ell$(4d, 5s, 5d, and 6s) configurations. The spectrum was reobserved and extended to the transitions from $4p^5 6d$, $4p^5 ns$(n=7-10) and $4s4p^6 5p$ levels by Reader et al.(1972)[70]. The uncertainty of the wavelength is ±0.003 Å ∼ 0.006 Å. The $4p^6\ ^1S_0 - 4p^5 4d\ ^3P^\circ_1$ line was confirmed by Finkenthal et al.(1981)[42]. Their data are adopted in the present compilation.

The ionization energy was estimated as 1013550 ± 150 cm^{-1} by Reader et al.(1972)[70].

Mo VIII (Br-Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^5\ ^2P^\circ_{3/2}$

The wavelengths of the $4s^2 4p^5\ ^2P^\circ_{1/2,3/2} - 4s4p^6\ ^2S_{1/2}$ transitions were measured by Charles (1950)[26]. The line at 427.660 Å was confirmed by Finkenthal et al.(1981)[42].

The transitions to the $4p^5\ ^2P^\circ_{1/2,3/2}$ ground levels from the $4p^4 4d$ and 5s levels were observed by Chaghtai (1970)[23]. These transitions were reobserved and identified by Ekberg et al.(1972)[39], whose wavelength values are quoted in the present compilation.

The transitions to the ground levels from the higher levels were analyzed for the $4p^4 5d$, 6d and $4p^4 6s$, 7s cofigurations by Chaghtai et al.(1975)[24].

The uncertainty in the wavelengths is ±0.003 Å.

The ionization energy was estimated as 1162000 ± 8000 cm^{-1} by Ekberg et al.(1972)[39] and as 1157900±8000 cm^{-1} by Chaghtai et al.(1975)[24].

Mo IX (Se-Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^4\ ^3P_2$

The transitions to the $4p^4\ ^3P_{2,0,1}$, $^1D_2$ and $^1S_0$ ground levels from the $4p^3(^4S^\circ_{3/2}$, $^2D^\circ_{3/2,5/2}$ and $^2P^\circ_{1/2,3/2})5s$ levels, the $4p^3(\ldots)4d$ levels, and the $4p^3(\ldots)5d$, 6d , 6s, and 7s levels were observed by Chaghtai et al.(1976)[25], Rahimullah et al.(1978)[69], and Khatoon et al.(1979)[55], respectively. The energy values of the $4p^3 5s$ levels were improved by Rahimullah et al.(1978)[69].

The transitions to the ground levels from the $4s4p^5$ levels were identified by Reader and Acquista (1976)[71]. The spectral line at 428.959 Å for the $4s^2 4p^4\ ^3P_2$ - $4s4p^5\ ^3P^\circ_2$ transition was observed by Finkenthal et al.(1981)[42].

The uncertainty of the wavelengths is ±0.005 Å.

Mo X (As-Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^3\ ^4S^\circ_{3/2}$

The $4s^2 4p^3$ - $4s^2 4p^2 5s$ transitions were first identified by Rahimullah et al.(1976)[68]. These identifications were confirmed by Reader and Acquista (1981)[76], which are adopted in the present compilation. The uncertainty of the wavelengths is ±0.005 Å.

The $4s^2 4p^3$ - $4s4p^4$ transitions were also analyzed by Reader and Acquista (1981)[76] and all the eight levels of $4s4p^4$configuration were established.

The $4s^2 4p^3$ - $4s^2 4p^2 4d$ transitions were identified and the nineteen levels of $4s^2 4p^2 4d$ were established by Rahimullah et al.(1978)[69]. Addition to this analysis was given by Ateqad et al.(1984)[8], who determined the other seven levels (leaving $^4F_{9/2}$ which cannot combine to the ground levels) of the $4s^2 4p^2 4d$ configuration. The uncertainty of the

wavelengths is ± 0.01Å.

The ionization energy was estimated as 1503000 ± 10000 cm^{-1} by Reader and Acquista(1981)[76].

Mo XI (Ge-Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^2\ ^3P_0$

The analysis on the $4s^2 4p^2$ - $4s^2 4p5s$ transitions was carried out by Rahimullah et al.(1976)[68] for the first time and extended to the $4s^2 4p^2$ - $4s^2 4p4d$ and $4s^2 4p^2$ - $4s4p^3$ transitions by Rahimullah et al.(1978)[69].

In the latter article, the energy levels of the ground configuration $4s^2 4p^2$ with $^3P_{0,1,2}$, $^1D_2$, and $^1S_0$ terms and the $4s^2 4p5s$ levels with $^3P^\circ_{0,1,2}$ and $^1P^\circ_1$ terms were improved and all the $4s^2 4p4d$ levels (except $^3F^\circ_4$ which does not combine with the ground levels) and 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.

Mo XII (Ga-Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p\ ^2P^\circ_{1/2}$

There are few measurements for this ionic species. Alexander et at.(1971)[4] classified the two transitions $4s^2 4p\ ^2P^\circ_{3/2}$ - $4s^2 5d\ ^2D_{5/2}$ and $4s^2 4p\ ^2P^\circ_{1/2}$ - $4s^2 5d\ ^2D_{3/2}$. Finkenthal et al.(1981)[42] observed the two lines between $4s^2 4p\ ^2P^\circ_{3/2}$ and $4s4p^2\ ^2P_{1/2,3/2}$ levels.

Mo XIII (Zn-Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2\ ^1S_0$

Observation of the lines due to the $4s^2\ ^1S_0$ - $4s5p\ ^{1,3}P^\circ_1$ and $4s4p\ ^3P^\circ_{2,1,0}$ - $4s5s\ ^3S_1$ transitions was first reported by Alexander et al.(1971)[4]. The uncertainty of the wavelengths is ±0.005 Å.

The $4s^2\ ^1S_0$ - $4s4p\ ^1P^\circ_1$ resonance line was originally observed in the ST tokamak by Hinnov et al.(1972)[48] and Hinnov et al.(1976)[49]. This line was identified by Reader and Acquista (1977)[72]. In the Alcator A tokamak Finkenthal et al.(1981)[42] observed and identified this line besides the intercombination ($^1S_0$ - $^3P^\circ_1$) and the forbidden, M2($^1S_0$ - $^3P^\circ_2$) lines. They classified three more lines belonging to 4s4p - $4p^2$ transitions.

There appears an inconsistency in the energy value of the 4s4p $^3P^\circ_{1,2}$ levels in Refs.42 and 4. That is, the energy value of the $^3P^\circ_1$ level is estimated to be lower than that of the $^3P^\circ_2$ level by about 10000 cm^{-1} in the former in contrast to about 20000 cm^{-1} in the latter. This inconsistency hasn't been resolved even in this compilation.

Burkhalter et al.(1980)[19] reported the $3d^{10}4s^2\ ^1S_0$ - $3d^94s^24p\ ^3D^\circ_1$, $^1P^\circ_1$ transitions and Wyart et al.(1981)[93] confirmed them.

Mo XIV (Cu-Sequence)

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

In 1971, Alexander et al.[4] observed the spectrum of Mo XIV in the region from 45 to 350 Å and identified the 4s-5p, 4s-6p, 4p-5s, 4p-5d, and 4d-5f transitions. In 1972, Hinnov et al.[48] observed the 4s-4p resonance doublet (373 and 424 Å) in the ST tokamak and measured the wavelengths to an accuracy of ±1 Å. In 1976, Hinnov[49] measured these lines to an accuracy of ±0.5 Å. In 1981, Finkenthal et al.[42] observed these lines in the Alcator A tokamak.

Curtis et al.(1977)[29] reported the observation of the Mo XIV spectrum in the region from 35 to 184 Å. Identifications are given for the 4s-7p, 4p-6s, 4p-7s, 4p-8s, 4f-5g, 4f-6g, and 4d-5p transitions, with wavelength accuracy ranging from ±0.05 to ±0.2 Å.

In 1979, Reader et al.[73] observed the spectrum in the region from 70 to 630 Å. From the identification of 35 lines, 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=4,5), nf(n=4-6), and ng(n=5-7). The uncertainty of the wavelengths is ±0.005 Å. The value of the 6p $^2P^\circ_{1/2}$ level was revised by Reader et al.(1981)[74]. In the present compilation their data are adopted.

The spectra in the region from 50 to 54 Å were observed by Burkhalter et al.(1980)[19], Klapisch et al.(1981)[60], and Wyart et al.(1981)[93]. The transitions involved in the spectra have been identified as $3d^{10}4s$ - $3d^94s4p$, $3d^{10}4p$ - $3d^94p^2$, and $3d^{10}4s$ - $3d^{10}7p$. The wavelengths in Ref.93 are adopted in this compilation. The uncertainty of the wavelengths is ±0.005 Å.

The ionization energy was estimated as 2441000±2000 cm^{-1} by Curtis et al.(1977)[29] and as 2440600±300 cm^{-1} by Reader et al.(1977)[72].

Mo XV (Ni-Sequence)

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

The wavelengths for the $3d^{10}\ ^1S_0$ - $3d^94p\ ^3P^\circ_1$, $^1P^\circ_1$, $^3D^\circ_1$ transitions were first measured to an accuracy of ±0.02 Å by Alexander et al.(1971)[4]. Two transitions from $^1P^\circ_1$ and $^3D^\circ_1$ were observed in the TFR tokamak by Schwob et al.(1977)[85]. Klapisch et al.(1978)[59] identified these transitions and also attributed two lines at 58.832 and 57.927 Å in the spectrum of the tokamak to the forbidden E2 transitions: $3d^{10}$ - $3d^94s$(J=2) of Mo XV. These transitions were also observed in the DITE tokamak by Mansfield et al.(1978)[65].

In 1980, Burkhalter et al.[19] identified the $3d^{10}$ - $3d^94p$ and $3d^{10}$ - $3d^94f$ resonance lines. The uncertainty of the wavelengths is ±0.010 Å.

In 1981, Schweitzer et al.[83] extended the investigation to the $3d^{10}$ - $3d^{9}5f$ transitions. Wyart et al.(1981)[93] confirmed the $3d^{10}$ - $3d^{9}4p$ transitions. Their data are adopted in the present compilation. The uncertainty of the wavelengths is ±0.005 Å.

Mo XVI (Co-Sequence)

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

The $3p^6 3d^9\ ^2D_{5/2}$ - $^2D_{3/2}$ magnetic dipole transition was observed in the PLT tokamak by Suckewer et al.(1982)[89] and the wavelength was measured to an accuracy of ±0.2 Å.

The $3p^6 3d^9$ - $3p^5 3d^{10}$, $3p^6 3d^8 4p$ transitions in the region from 43 to 78 Å were first observed by Edlén (1947)[37]. Since then, the measurements for these transitions were followed by Alexander et al.(1971)[4], Mansfield et al.(1978)[65] and Burkhalter et al.(1980)[19]. In 1982, Ryabtsev and Reader[82] reported the forty-six wavelengths with identifications for these transitions, which are adopted in the present compilation. The uncertainty of the wavelengths is ±0.005 Å. The identifications for the $3d^9$ - $3d^8 4p$ transitions were also given by Ando (1982)[5] and Wyart et al.(1982)[94].

The $3d^9$ - $3d^8 4f$ transitions in the region from 32 to 34 Å were first observed in the TFR tokamak spectra by Schwob et al.(1977)[85]. Mansfield et al.(1978)[65] reported identification for 6 lines. These identifications were extended to a total of 17 lines by Burkhalter et al.(1980)[19]. In 1985, Ando and Ishii[6] revised these identifications and extended the number to 29. Their values are adopted in the present compilation.

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.(1980)[12] and Burkhalter et al.(1980)[19]. These investigations were extended by Reader and Ryabtsev (1981)[75], who measured the wavelengths for 43 lines and established all levels of the $3p^6 3d^8$ and $3p^5 3d^9$ configurations. The uncertainty of the wavelengths is ±0.005 Å. The identification for the $3p^6 3d^8\ ^1S_0$ - $3d^5 3d^9\ ^3D^\circ_1$ transition was added and the energy value of the $3d^6 3d^8\ ^1S_0$ level was revised by Reader and Ryabtsev (1983)[80].

The $3p^6 3d^8$ - $3d^7 4p$ transitions were observed in the TFR tokamak in the wavelength region from 42.1 to 43.2 Å by Schwob et al.(1977)[85]. The spectrum for these transitions was unresolved because of a great number of lines. In 1978, Mansfield et al.[65] analyzed the spectrum produced in the DITE tokamak in the wavelength region from 41.06 to 43.12 Å and reported the identifications for 18 lines and an band of lines extending from 42.08 to 42.14 Å.

The most comprehensive investigation for these transitions was performed by Wyart et al.(1983)[95], who published the measurements and identifications of the wavelengths for 47 lines. In the present compilation their results are adopted. According to their designations, upper levels in table are designated by symbol $(N)_J$ with J quantum number and index N increasing with energy from the lowest level(N=1).

The wavelength for the $3d^8\ ^3F_4$ - $^3F_3$ in-shell transition was measured in the PLT tokamak by Suckewer et al.(1982)[89]. This wavelength is in good agreement with that derived from the shorter wavelength measurements of Reader and Ryabtsev (1981)[75].

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 wavelength region from 38.7 to 40.0 Å were attributed to the $3d^7$ - $3d^6 4p$ transitions by Schwob et al.(1977)[85].

Four lines, lying at about 67 Å, due to the $3p^6 3d^7$ - $3p^5 3d^8$ transitions were identified by Burkhalter et al.(1980)[19]. Wyart et al.(1983)[96] extended the measurement to the wavelength region from 66 to 83.5 Å and about 50 lines were assigned to the 3p - 3d transitions. In table, the upper levels established by Wyart et. al.(1984)[96] are designated by symbol $(N)_J$ with J quantum number and index N increasing with energy from the lowest level(N=1).

Mo XIX (Cr-Sequence) - XXIX (Si-Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p^6 3d^6\ {}^5D_4$, $3d^5\ {}^6S_{5/2}$, $3d^4\ {}^5D_0$, $3d^3\ {}^4F_{3/2}$, $3d^2\ {}^3F_2$, $3d\ {}^2D_{3/2}$

$1s^2 2s^2 2p^6 3s^2 3p^6\ {}^1S_0$, $3p^5\ {}^2P^\circ_{3/2}$, $3p^4\ {}^3P_2$, $3p^3\ {}^4S^\circ_{3/2}$, $3p^2\ {}^3P_0$

Schwob et al.(1977)[85] reported identifications of the ionization stages Mo XIX in the region from 36.0 to 36.9 Å (3d-4p) and Mo XX - Mo XXIII in the region from 22.5 to 26.6 Å (3d-4f). Line identifications were also reported for the 3d-4f transitions in Mo XXV.

Identifications of magnetic dipole lines observed in the PLT tokamak discharges were made for Mo XXIII, Mo XXIV and Mo XXVI to Mo XXIX by Suckewer et al.(1982)[89], Denne et al.(1983)[33] and Denne et al.(1984)[34].

Mo XXX (Al-Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2 3p\ ^2P^\circ_{1/2}$

Denne et al.(1983)[33] measured and identified the magnetic dipole transition in the $3s^2 3p$ electron configuration.

Prior to this report, Burkhalter et al.(1977)[17] observed the 3d-4f, 3p-4s, and 3p-4d transition lines in the wavelength region from 15.627 to 18.056 Å. The uncertainty of the wavelengths is ±0.010 Å.

Mansfield et al.(1978)[65] analyzed the TFR spectrum and reported the identification for the $3s^2 3p$ - $3s3p^2$ transitions. The uncertainty of the wavelengths is ±0.02 Å.

Mo XXXI (Mg-Sequence)

Ground state: $1s^2 2s^2 2p^6 3s^2\ ^1S_0$

The $3s^2\ ^1S_0$ - $3s3p\ ^1P^\circ_1$ resonance line was first identified by Hinnov (1976)[49] through observations with the Princeton ST tokamak. His wavelength for this transition was 117.0 ± 0.5 Å. Burkhalter et al. (1977)[17] observed two other lines within a few angstroms of Hinnov's wavelength and these lines were identified as $3s3p\ ^1P^\circ_1$ - $3s3d\ ^1D_2$ and $3s3p\ ^2P^\circ_2$ - $3s3d\ ^3D_3$ by means of isoelectronic extrapolation and comparisons with theoretical calculations. Similar observations were also made by Mansfield et al.(1978)[65] and Reader (1983)[79]. The values of Reader were adopted in the present compilation. The uncertainty of the wavelengths is ±0.015 Å.

Mansfield et al.(1978)[65] observed the n=3, Δn=0, transitions in the wavelength region from 94 to 136 Å and the n=3 to n=4 transitions which occur between 10 and 19 Å. Their identifications showed that the 3p3d levels were connected to the ground level via 3s3d or $3p^2$. The two sets of values thus obtained were inconsistent with each other. Therefore

the energy levels are not given in the present compilation.

The $3s^2\ ^1S_0$ - $3s3p\ ^3P^\circ_1$ intercombination transition and the $3s3p\ ^3P^\circ_1$ - $3s3p\ ^3P^\circ_2$ magnetic-dipole transition were observed in the PLT tokamak discharges by Finkenthal et al.(1982)[43] and Denne et al.(1983)[33]. The uncertainties of the wavelengths are ±0.2 Å and ±0.3 Å respectively.

Mo XXXII (Na-Sequence)

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

The first measurement was made in the Princeton ST tokamak by Hinnov (1976)[49], who observed two lines at 177 and 129 Å ascribed to the $3s\ ^2S_{1/2}$ - $3p\ ^2P^\circ_{1/2,3/2}$ transitions. In 1977, Schwob et al.[85] reported the line identifications for 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 in the TFR spectrum. Burkhalter et al.(1977)[17] measured wavelengths in both the 10 - 19 Å and 100 - 177 Å regions and established 17 level on the basis of 22 transitions. In the same wavelength regions Mansfield et al.(1978)[65] reported definite identifications. The uncertainty of the wavelengths is ±0.005 Å. In this compilation we adopted the wavelength values observed by Mansfield et al(1978)[65].

Mo XXXIII (Ne-Sequence)

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

Aglitskii et al.(1975) measured wavelengths in the 4-5.5 Å region and identified the six lines due to the transitions $2s^22p^6$ - $2s^22p^53s$, $2s^22p^53d$, $2s2p^63p$. In the TFR tokamak spectrum the $2p^6\ ^1S_0$ - $2p^53d\ ^3D^\circ_1$, $2p^53s\ ^{1,3}P^\circ_1$ transition lines were found by Schwob et al.(1977)[85]. In 1979, Gorden et al.[47] and Aglitskii et al.[3] obtained the accurate wavelengths, which are adopted in this compilation.

The wavelength values for the higher Rydberg transitions, 2p-4s, nd(n=4-7), were determined by Burkhalter et al.(1978)[18].

Mo XXXIV (F-Sequence)

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

Boiko et al.(1978)[14] observed nine lines in the wavelength region from 4.472 to 4.536 Å and these lines were identified as transitions between configurations $2p^5$ - $2p^4 3d$. The uncertainty of the wavelengths is ±0.002 Å.

Doschek and Feldman (1976)[35] and Reader (1982)[77] predicted the wavelength for the $2s^2 2p^5\ ^2P^\circ_{3/2}$ - $^2P^\circ_{1/2}$ magnetic dipole transition with the use of isoelectronic extrapolation.

Mo XL (Li-Sequence) - XLII (H-Sequence)

Ground state: $1s^2 2s\ ^2S_{1/2}$, $1s^2\ ^1S_0$, $1s\ ^2S_{1/2}$

Beier and Kunze (1978)[10] investigated the spectrum in the range 0.5-0.9 Å and made line identifications for the $1s^2 2p$ - $1s2p^2$ and $1s^2 2s$ - 1s2s2p transitions in Mo XL and for the $1s^2$ - 1s2p transitions in Mo XLI.

Turecheck and Kunze (1975)[92] measured the wavelengths for the $1s^2$ - 1s2p, 1s2p - $2p^2$ and 1s2s - 2s2p transitions in Mo XLI and for the 1s - 2p, 3p transitions in Mo XLII.

3. Explanation of Tables

IP — Ionization potential of the tabulated ions in cm^{-1}(eV). The value is from Carlson et al.(1970), Ref. 3 in Section 1.

λ — Wavelength of listed spectral lines in units of Angstrom (10^{-8}cm)

P — Superscript to the right of the wavelength value means that the wavelength is predicted by extrapolation along an isoelectronic sequence.

Configurations

Customary spectroscopic designation for lower (first) and upper levels of spectral lines; electronic configuration followed by the term in LS-, jj-, or jK-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. The intensity value is adopted from the paper identified with a superscript Δ on the reference number in the last column.

References

The numbers are given in the bibliographic listing following the Tables. Reference from which the values of wavelength and intensity values are adopted is identified with a superscript ° on the number.

4. Tables. Spectroscopic Data for Mo VI - Mo XLII

Mo VI (Rb-Sequence) IP=579300 cm^{-1} (71.81 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
2520.90	$4p^5(^1G^\circ)4d^2\ ^2G^\circ_{7/2}$	$4p^66d\ ^2D_{5/2}$	346887	386555	16	91
2316.01	$4p^5(^3P^\circ)4d^2\ ^2D^\circ_{3/2}$	$4p^66d\ ^2D_{5/2}$	343373	386555	13	91
2004.48	$4p^5(^3P^\circ)4d^2\ ^4D^\circ_{1/2}$	$4p^66d\ ^2D_{3/2}$	336327	386171	2	91
1872.92	3/2	3/2	332779	386171	2	91
1749.01	7/2	5/2	329371	386555	17	91
1504.57	$4p^5(^1D^\circ)4d^2\ ^2F^\circ_{7/2}$	$4p^66d\ ^2D_{5/2}$	320087	386555	2	91
1476.52	$4p^5(^3F^\circ)4d^2\ ^2F^\circ_{7/2}$	$4p^67g\ ^2G$	405696	473423	6	91
1453.57	$4p^5(^3F^\circ)4d^2\ ^4F^\circ_{5/2}$	$4p^66d\ ^2D_{3/2}$	317375	386171	4	91
1344.92	7/2	5/2	312200	386555	24	91
1426.85	$4p^5(^1G^\circ)4d^2\ ^2F^\circ_{7/2}$	$4p^66d\ ^2D_{5/2}$	316473	386555	16	91
1368.54	$4p^5(^3F^\circ)4d^2\ ^2F^\circ_{5/2}$	$4p^67g\ ^2G_{7/2}$	400360	473431	2	91
1331.62	$4p^5(^1D^\circ)4d^2\ ^2F^\circ_{7/2}$	$4p^65g\ ^2G$	320087	395183	13	91
1315.54	$4p^5(^1D^\circ)4d^2\ ^2D^\circ_{5/2}$	$4p^66d\ ^2D_{5/2}$	310540	386555	2	91
1255.58	$4p^5(^3P^\circ)4d^2\ ^4P^\circ_{3/2}$	$4p^66d\ ^2D_{5/2}$	306909	386555	2	91

Mo VI (Rb−Sequence) IP=579300 cm^{-1} (71.81 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
1197.79	5/2	3/2	302680	386171	1	91
1202.39	$4p^5\,(^3F^\circ)\,4d^2\ ^4G^\circ_{5/2}$	$4p^6 6d\ ^2D_{3/2}$	303004	386171	4	91
1196.90	5/2	5/2	303004	386555	2	91
1195.03	7/2	5/2	302871	386555	2	91
1079.41	$4p^5\,(^3F^\circ)\,4d^2\ ^4D^\circ_{7/2}$	$4p^6 6d\ ^2D_{5/2}$	293902	386555	2	91
1869.03	$4p^6 5d\ ^2D_{3/2}$	$4p^5\,(^3P^\circ)\,4d^2\ ^4D^\circ_{1/2}$	282830	336327	5	91
1673.43	$4p^6 5d\ ^2D_{5/2}$	$4p^5\,(^3P^\circ)\,4d^2\ ^2D^\circ_{3/2}$	283616	343373	2	91
1651.73	3/2	3/2	282830	343373	1	91
1600.14	$4p^6 5d\ ^2D_{3/2}$	$4p^5\,(^3P^\circ)\,4d^2\ ^2S^\circ_{1/2}$	282830	345325	3	91
1589.34	$4p^6 5d\ ^2D_{5/2}$	$4p^5\,(^3P^\circ)\,4d^2\ ^4S^\circ_{3/2}$	283616	346535	4	91
1569.70	3/2	3/2	282830	346535	2	91
1527.96	$4p^6 5d\ ^2D_{3/2}$	$4p^5\,(^3P^\circ)\,4d^2\ ^2D^\circ_{5/2}$	282830	348283	9	91
1392.86	$4p^6 5d\ ^2D_{5/2}$	$4p^5\,(^1S^\circ)\,4d^2\ ^2P^\circ_{3/2}$	283616	355397	5	91
850.799	$4p^6 5d\ ^2D_{3/2}$	$4p^5\,(^3F^\circ)\,4d^2\ ^2F^\circ_{5/2}$	282830	400360	8	91
819.131	5/2	7/2	283616	405696	16	91

Mo VI (Rb-Sequence) IP=579300 cm^{-1} (71.81 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
807.446	$4p^5(^1D^\circ)4d^2\ ^2F^\circ_{7/2}$	$4p^66g\ ^2G$	320087	443934	8	91
792.475	$4p^65d\ ^2D_{3/2}$	$4p^5(^3P^\circ)4d^2\ ^2P^\circ_{1/2}$	282830	409020	8	91
790.639	$4p^65p\ ^2P^\circ_{3/2}$	$4p^66s\ ^2S_{1/2}$	187329	313810	25	26
760.997	1/2	1/2	182404	313810	15	26
736.220	$4p^65d\ ^2D_{3/2}$	$4p^5(^3F^\circ)4d^2\ ^2D^\circ_{5/2}$	282830	418661	9	91
534.265	$4p^65s\ ^2S_{1/2}$	$4p^5(^3P^\circ)4d^2\ ^4P^\circ_{3/2}$	119730	306909	13	91
548.234	$4p^64d\ ^2D_{3/2}$	$4p^65p\ ^2P^\circ_{1/2}$	0	182404	500	26°, 42
541.282	5/2	3/2	2578	187329	1000	26°, 42
533.820	3/2	3/2	0	187329	150	26°, 42
477.982	$4p^65s\ ^2S_{1/2}$	$4p^5(^1D^\circ)4d^2\ ^2P^\circ_{3/2}$	119730	328933	13	91
447.130	$4p^65s\ ^2S_{1/2}$	$4p^5(^3P^\circ)4d^2\ ^2D^\circ_{3/2}$	119730	343373	6	91
378.118	$4p^64d\ ^2D_{5/2}$	$4p^64f\ ^2F^\circ_{5/2}$	2578	267043	75	26
377.540	5/2	7/2	2578	267451	400	26°, 42
374.472	3/2	5/2	0	267043	250	26
346.774	$4p^64d\ ^2D_{5/2}$	$4p^5(^3F^\circ)4d^2\ ^4D^\circ_{3/2}$	2578	290959	2	91

Mo VI (Rb-Sequence) IP=579300 cm^{-1} (71.81 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
346.072	5/2	5/2	2578	291557	19	91
345.618	3/2	1/2	0	289337	16	91
343.687	3/2	3/2	0	290959	16	91
343.268	5/2	7/2	2578	293902	22	91
342.985	3/2	5/2	0	291557	22	91
333.229	$4p^6 4d\ ^2D_{5/2}$	$4p^5\,(^3P^o)\,4d^2\ ^4P^o_{5/2}$	2578	302680	8	91
330.381	3/2	5/2	0	302680	19	91
328.593	5/2	3/2	2578	306909	22	91
325.832	3/2	3/2	0	306909	28	91
323.332	3/2	1/2	0	309280	7	91
333.015	$4p^6 4d\ ^2D_{5/2}$	$4p^5\,(^3F^o)\,4d^2\ ^4G^o_{7/2}$	2578	302871	31	91
332.871	5/2	5/2	2578	303004	6	91
330.027	3/2	5/2	0	303004	16	91
325.510	$4p^6 4d\ ^2D_{5/2}$	$4p^5\,(^1D^o)\,4d^2\ ^2D^o_{3/2}$	2578	309788	7	91
324.721	5/2	5/2	2578	310540	8	91
322.808	3/2	3/2	0	309788	13	91
322.020	3/2	5/2	0	310540	23	91
322.981	$4p^6 4d\ ^2D_{5/2}$	$4p^5\,(^3F^o)\,4d^2\ ^4F^o_{7/2}$	2578	312200	40	91
318.219	5/2	3/2	2578	316835	2	91
317.670	5/2	5/2	2578	317375	16	91

Mo VI (Rb-Sequence) IP=579300 cm^{-1} (71.81 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
315.620	3/2	3/2	0	316835	19	91
315.085	3/2	5/2	0	317375	19	91
320.136	$4p^6 4d\ ^2D_{5/2}$	$4p^5(^1G^\circ)4d^2\ ^2F^\circ_{5/2}$	2578	314952	34	91
318.584	5/2	7/2	2578	316473	49	91
317.508	3/2	5/2	0	314952	49	91
314.958	$4p^6 4d\ ^2D_{5/2}$	$4p^5(^1D^\circ)4d^2\ ^2F^\circ_{7/2}$	2578	320087	61	91
298.970	5/2	5/2	2578	337067	19	91
296.661	3/2	5/2	0	337067	28	91
314.168	$4p^6 4d\ ^2D_{3/2}$	$4p^5(^1D^\circ)4d^2\ ^2P^\circ_{1/2}$	0	318301	40	91
306.418	5/2	3/2	2578	328933	16	91
304.015	3/2	3/2	0	328933	5	91
307.734	$4p^6 4d\ ^2D_{5/2}$	$4p^5(^3F^\circ)4d^2\ ^2G^\circ_{7/2}$	2578	327540	4	91
307.064	$4p^6 4d\ ^2D_{5/2}$	$4p^5(^3P^\circ)4d^2\ ^4D^\circ_{5/2}$	2578	328253	10	91
306.010	5/2	7/2	2578	329371	28	91
304.639	3/2	5/2	0	328253	22	91
302.848	5/2	3/2	2578	332779	8	91
300.502	3/2	3/2	0	332779	25	91
297.330	3/2	1/2	0	336327	22	91

Mo VI (Rb-Sequence) IP=579300 cm^{-1} (71.81 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
293.439	$4p^6 4d\ ^2D_{5/2}$	$4p^5(^3P^\circ)4d^2\ ^2D^\circ_{3/2}$	2578	343373	34	91
291.226	3/2	3/2	0	343373	19	91
289.255	5/2	5/2	2578	348283	10	91
287.123	3/2	5/2	0	348283	22	91
290.734	$4p^6 4d\ ^2D_{5/2}$	$4p^5(^3P^\circ)4d^2\ ^4S^\circ_{3/2}$	2578	346535	19	91
288.576	3/2	3/2	0	346535	13	91
289.582	$4p^6 4d\ ^2D_{3/2}$	$4p^5(^3P^\circ)4d^2\ ^2S^\circ_{1/2}$	0	345325	22	91
290.442	$4p^6 4d\ ^2D_{5/2}$	$4p^5(^1G^\circ)4d^2\ ^2G^\circ_{7/2}$	2578	346887	34	91
283.438	$4p^6 4d\ ^2D_{5/2}$	$4p^5(^1S^\circ)4d^2\ ^2P^\circ_{3/2}$	2578	355397	28	91
281.375	3/2	3/2	0	355397	34	91
270.836	3/2	1/2	0	369227	19	91
250.403	$4p^6 4d\ ^2D_{5/2}$	$4p^5(^3F^\circ)4d^2\ ^2F^\circ_{5/2}$	2578	400360	28	91
249.774	3/2	5/2	0	400360	40	91
248.070	5/2	7/2	2578	405696	70	91
244.487	$4p^6 4d\ ^2D_{3/2}$	$4p^5(^3P^\circ)4d^2\ ^2P^\circ_{1/2}$	0	409020	45	91
243.492	5/2	3/2	2578	413276	28	91
241.969	3/2	3/2	0	413276	55	91

Mo VI (Rb-Sequence) IP=579300 cm^{-1} (71.81 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
240.686	$4p^6 4d\ ^2D_{5/2}$	$4p^5(^3F^o)4d^2\ ^2D^o_{3/2}$	2578	418057	34	91
240.34	5/2	5/2	2578	418661	33	91
239.205	3/2	3/2	0	418057	52	91
238.857	3/2	5/2	0	418661	64	91
238.861	$4p^6 4d\ ^2D_{5/2}$	$4p^5 4d(^3P^o)5s\ ^4P^o_{3/2}$	2578	421224	10b	66
238.507	3/2	1/2	0	419275	7s	66
237.408	3/2	3/2	0	421224	6s	66
235.703	5/2	5/2	2578	426841	.7	66
234.407	$4p^6 4d\ ^2D_{5/2}$	$4p^5 4d(^3F^o)5s\ ^4F^o_{7/2}$	2578	429181	13b	66
231.636	5/2	5/2	2578	434291	5s	66
230.260	3/2	5/2	0	434291	9b	66
234.676	$4p^6 4d\ ^2D_{3/2}$	$4p^5 4d(^3P^o)5s\ ^2P^o_{1/2}$	0	426119	13b	66
232.239	5/2	3/2	2578	433172	13s	66
230.854	3/2	3/2	0	433172	8s	66
230.760	$4p^6 4d\ ^2D_{5/2}$	$4p^5 4d(^3F^o)5s\ ^2F^o_{7/2}$	2578	435929	9s	66
229.727	$4p^6 4d\ ^2D_{5/2}$	$4p^5 4d5s\ 9E_{3/2}$	2578	437874	1	66
228.378	3/2	3/2	0	437874	8s	66
226.586	$4p^6 4d\ ^2D_{3/2}$	$4p^5 4d5s\ 10E_{5/2}$	0	441334	4b	66

Mo VI (Rb-Sequence) IP=579300 cm^{-1} (71.81 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
224.482	$4p^6 4d\ ^2D_{5/2}$	$4p^5 4d5s\ 11E_{7/2}$	2578	448048	10s	66
222.592	$4p^6 4d\ ^2D_{5/2}$	$4p^5 4d5s\ 12E_{5/2}$	2578	451844	12s	66
221.309	3/2	5/2	0	451844	1h	66
219.064	$4p^6 4d\ ^2D_{5/2}$	$4p^5 4d5s\ 14E_{3/2}$	2578	459067	7s	66
217.833	3/2	3/2	0	459067	5	66
218.171	$4p^6 4d\ ^2D_{3/2}$	$4p^5 4d5s\ 13E_{5/2}$	0	458356	12s	66
217.899	$4p^6 4d\ ^2D_{5/2}$	$4p^5 4d5s\ 15E_{5/2}$	2578	461506	11s	66
216.444	$4p^6 4d\ ^2D_{5/2}$	$4p^5 4d\ (^3D^o)\ 5s\ ^2D^o_{3/2}$	2578	464585	5	66
215.249	3/2	3/2	0	464585	4	66
215.648	$4p^6 4d\ ^2D_{5/2}$	$4p^5 4d5s\ 17E_{7/2}$	2578	466297	8s	66
214.537	$4p^6 4d\ ^2D_{5/2}$	$4p^5 4d5s\ 18E_{5/2}$	2578	468698	5	66
192.067	$4p^6 4d\ ^2D_{5/2}$	$4p^5 4d\ (^1P^o)\ 5s\ ^2P^o_{3/2}$	2578	523232	1h	66
191.119	3/2	3/2	0	523232	4	66

Mo VII (Kr-Sequence) IP=1000300 cm^{-1} (124.0 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
327.265	$4p^6\ ^1S_0$	$4p^54d\ ^3P^o_1$	0	305563	75	21, 42, 70°
292.645	$4p^6\ ^1S_0$	$4p^54d\ ^3D^o_1$	0	341711	175	21, 70°
239.499	$4p^6\ ^1S_0$	$4p^54d\ ^1P^o_1$	0	417538	300	21, 70°
207.773	$4p^6\ ^1S_0$	$4p^55s\ (\frac{3}{2}, \frac{1}{2})^o_1$	0	481294	150	21, 26, 70°
198.835	$4p^6\ ^1S_0$	$4p^55s\ (\frac{1}{2}, \frac{1}{2})^o_1$	0	502930	125	21, 26, 70°
151.747	$4p^6\ ^1S_0$	$4p^55d\ ^3P^o_1$	0	658992	1	21, 70°
149.462	$4p^6\ ^1S_0$	$4p^55d\ ^3D^o_1$	0	669066	40	21, 70°
144.974	$4p^6\ ^1S_0$	$4p^55d\ ^1P^o_1$	0	689779	40	70
140.833	$4p^6\ ^1S_0$	$4p^56s\ (\frac{3}{2}, \frac{1}{2})^o_1$	0	710061	40	21, 70°
136.507	$4p^6\ ^1S_0$	$4p^56s\ (\frac{1}{2}, \frac{1}{2})^o_1$	0	732563	20	21, 70°
128.141	$4p^6\ ^1S_0$	$4s4p^65p\ ^3P^o_1$	0	780390	1	70
126.631	$4p^6\ ^1S_0$	$4s4p^65p\ ^1P^o_1$	0	789696	5	70

Mo VII (Kr−Sequence) IP=1000300 cm^{-1} (124·0 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
125·704	$4p^6\ ^1S_0$	$4p^5 6d\ ^3D^\circ_1$	0	795520	1	70
122·487	$4p^6\ ^1S_0$	$4p^5 7s\ (\frac{3}{2}, \frac{1}{2})^\circ_1$	0	816413	4	70
119·141	$4p^6\ ^1S_0$	$4p^5 7s\ (\frac{1}{2}, \frac{1}{2})^\circ_1$	0	839342	2	70
114·286	$4p^6\ ^1S_0$	$4p^5 8s\ (\frac{3}{2}, \frac{1}{2})^\circ_1$	0	874998	2	70
111·347	$4p^6\ ^1S_0$	$4p^5 8s\ (\frac{1}{2}, \frac{1}{2})^\circ_1$	0	898093	0·4	70
109·790	$4p^6\ ^1S_0$	$4p^5 9s\ (\frac{3}{2}, \frac{1}{2})^\circ_1$	0	910830	1	70
107·005	$4p^6\ ^1S_0$	$4p^5 10s\ (\frac{3}{2}, \frac{1}{2})^\circ_1$	0	934536	1	70

Mo VIII (Br-Sequence) IP=1176100 cm^{-1} (145.8 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
474.941	$4s^2 4p^5\ ^2P^o_{1/2}$	$4s4p^6\ ^2S_{1/2}$	23274	233830	100	23[Δ], 26[○]
427.660	3/2	1/2	0	233830	160	23[Δ], 26[○], 42
325.176	$4p^5\ ^2P^o_{1/2}$	$4p^4\ (^1D)\ 4d\ ^2P_{1/2}$	23274	330800	8	23, 39[○]
307.166	1/2	3/2	23274	348832	5	23, 39[○]
286.670	3/2	3/2	0	348832	2	23, 39[○]
323.940	$4p^5\ ^2P^o_{3/2}$	$4p^4\ (^3P)\ 4d\ ^4D_{5/2}$	0	308699	30	39
322.645	3/2	3/2	0	309938	10	39
318.822	$4p^5\ ^2P^o_{1/2}$	$4p^4\ (^3P)\ 4d\ ^4P_{1/2}$	23274	336936	3	23, 39[○]
316.210	1/2	3/2	23274	339525	2	39
296.786	3/2	1/2	0	336936	50	23, 39[○]
294.526	3/2	3/2	0	339525	60	39
288.838	3/2	5/2	0	346215	100	23, 39[○]
314.379	$4p^5\ ^2P^o_{1/2}$	$4p^4\ (^1D)\ 4d\ ^2D_{3/2}$	23274	341362	35	23, 39[○]
292.943	3/2	3/2	0	341362	75	23, 39[○]
283.167	3/2	5/2	0	353148	85	39
297.918	$4p^5\ ^2P^o_{3/2}$	$4p^4\ (^3P)\ 4d\ ^4F_{3/2}$	0	335663	75	23, 39[○]
295.910	3/2	5/2	0	337941	150	23, 39[○]
279.477	$4p^5\ ^2P^o_{3/2}$	$4p^4\ (^3P)\ 4d\ ^2F_{5/2}$	0	357811	75	23, 39[○]

Mo VIII (Br-Sequence) IP=1176100 cm^{-1} (145·8 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
269·352	$4p^5\ ^2P^o_{1/2}$	$4p^4\ (^1S)\ 4d\ ^2D_{3/2}$	23274	394545	15	23, 39°
253·457	3/2	3/2	0	394545	30	23, 39°
246·973	3/2	5/2	0	404903	50	23, 39°
269·294	$4p^5\ ^2P^o_{3/2}$	$4p^4\ (^1D)\ 4d\ ^2F_{5/2}$	0	371341	50	23, 39°
257·597	$4p^5\ ^2P^o_{1/2}$	$4p^4\ (^1D)\ 4d\ ^2S_{1/2}$	23274	411512	30bl	23, 39°
243·006	3/2	1/2	0	411512	200	23, 39°
251·085	$4p^5\ ^2P^o_{1/2}$	$4p^4\ (^3P)\ 4d\ ^2P_{3/2}$	23274	421559	-2	39
245·276	1/2	1/2	23274	430969	100	39
237·215	3/2	3/2	0	421559	700	39
232·040	3/2	1/2	0	430969	50	39
235·510	$4p^5\ ^2P^o_{1/2}$	$4p^4\ (^3P)\ 4d\ ^2D_{3/2}$	23274	447876	500	39
234·314	3/2	5/2	0	426778	900	23, 39°
223·280	3/2	3/2	0	447876	15	39
198·367	$4p^5\ ^2P^o_{1/2}$	$4p^45s\ (^3P_2, \frac{1}{2})\ 3/2$	23274	527389	4	23, 39°
191·769	3/2	5/2	0	521461	90	23, 39°
189·614	3/2	3/2	0	527389	100	23, 39°
192·286	$4p^5\ ^2P^o_{1/2}$	$4p^45s\ (^3P_1, \frac{1}{2})\ 3/2$	23274	543336	5	23, 39°
190·241	1/2	1/2	23274	548923	25	23, 39°

Mo VIII (Br-Sequence) IP=1176100 cm^{-1} (145·8 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
184·047	3/2	3/2	0	543336	75	23, 39°
182·175	3/2	1/2	0	548923	20	23, 39°
186·377	$4p^5\ ^2P^o_{1/2}$	$4p^45s\ (^1D_2, \frac{1}{2})_{3/2}$	23274	559813	75	23, 39°
178·951	3/2	5/2	0	558812	100	23, 39°
178·634	3/2	3/2	0	559813	3	39
185·621	$4p^5\ ^2P^o_{3/2}$	$4p^45s\ (^3P_0, \frac{1}{2})_{1/2}$	0	538732	25	23, 39°
174·656	$4p^5\ ^2P^o_{1/2}$	$4p^45s\ (^1S_0, \frac{1}{2})_{1/2}$	23274	595829	75	23, 39°
167·833	3/2	1/2	0	595829	20	39
141·287	$4p^5\ ^2P^o_{1/2}$	$4p^4\ (^3P_0)\ 5d\ ^2D_{3/2}$	23274	731073	1	24
136·782	3/2	3/2	0	731073	4db	24
138·520	$4p^5\ ^2P^o_{1/2}$	$4p^4\ (^3P_1)\ 5d\ ^4P_{3/2}$	23274	745165	3d	24
134·203	3/2	3/2	0	745165	11	24
133·661	3/2	5/2	0	748161	2s	24
137·425	$4p^5\ ^2P^o_{1/2}$	$4p^4\ (^3P_1)\ 5d\ ^2P_{3/2}$	23274	750937	6	24
133·168	3/2	3/2	0	750937	1h	24
136·898	$4p^5\ ^2P^o_{3/2}$	$4p^4\ (^3P_2)\ 5d\ ^4P_{1/2}$	0	730472	2h	24

Mo VIII (Br-Sequence) IP=1176100 cm^{-1} (145.8 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
136.357	$4p^5\ ^2P^o_{3/2}$	$4p^4\ (^3P_0)\ 5d\ ^2D_{5/2}$	0	733372	6db	24
135.902	$4p^5\ ^2P^o_{1/2}$	$4p^4\ (^1D_2)\ 5d\ ^2S_{1/2}$	23274	759112	1h	24
131.730	3/2	1/2	0	759112	1h	24
135.378	$4p^5\ ^2P^o_{1/2}$	$4p^4\ (^1D_2)\ 5d\ ^2P_{3/2}$	23274	761941	1h	24
131.245	3/2	3/2	0	761941	1h	24
134.852	$4p^5\ ^2P^o_{3/2}$	$4p^4\ (^3P_2)\ 5d\ ^4F_{3/2}$	0	741552	1	24
134.362	3/2	5/2	0	744258	1h	24
134.428	$4p^5\ ^2P^o_{1/2}$	$4p^4\ (^1D_2)\ 5d\ ^2D_{3/2}$	23274	767167	9b	24
131.059	3/2	5/2	0	763015	1	24
133.854	$4p^5\ ^2P^o_{1/2}$	$4p^4\ (^1D_2)\ 5d\ ^2P_{1/2}$	23274	770370	1h	24
129.806	3/2	1/2	0	770370	4s	24
133.417	$4p^5\ ^2P^o_{3/2}$	$4p^4\ (^3P_1)\ 5d\ ^2F_{5/2}$	0	749531	1h	24
130.758	$4p^5\ ^2P^o_{3/2}$	$4p^4\ (^1D_2)\ 5d\ ^2F_{5/2}$	0	764770	1h	24
130.111	$4p^5\ ^2P^o_{1/2}$	$4p^4 6s\ (^3P_2, \frac{1}{2})_{3/2}$	23274	791823	1h	24
126.634	3/2	5/2	0	789754	8	24
126.296	3/2	3/2	0	791823	10s	24

Mo VIII (Br-Sequence) IP=1176100 cm^{-1} (145·8 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
128·688	$4p^5\ ^2P^o_{1/2}$	$4p^4\,(^1S_0)\,5d\ ^2D_{3/2}$	23274	800351	5	24
125·191	3/2	5/2	0	798781	1h	24
127·662	$4p^5\ ^2P^o_{1/2}$	$4p^4 6s\ (^3P_0, \frac{1}{2})_{1/2}$	23274	806614	1h	24
123·973	3/2	1/2	0	806614	3db	24
127·058	$4p^5\ ^2P^o_{1/2}$	$4p^4 6s\ (^3P_1, \frac{1}{2})_{3/2}$	23274	810363	3	24
126·747	1/2	1/2	23274	812274	6s	24
123·394	3/2	3/2	0	810363	5	24
123·108	3/2	1/2	0	812274	4b	24
124·620	$4p^5\ ^2P^o_{1/2}$	$4p^4 6s\ (^1D_2, \frac{1}{2})_{3/2}$	23274	825714	4db	24
121·111	3/2	5/2	0	825687	7b	24
119·114	$4p^5\ ^2P^o_{1/2}$	$4p^4 6s\ (^1S_0, \frac{1}{2})_{1/2}$	23274	862803	5db	24
115·902	3/2	1/2	0	862803	1h	24
115·109	$4p^5\ ^2P^o_{1/2}$	$4p^4\,(^3P_0)\,6d\ ^2D_{3/2}$	23274	891999	1h	24
112·254	3/2	5/2	0	890834	5d	24
112·110	3/2	3/2	0	891999	2d	24
113·205	$4p^5\ ^2P^o_{1/2}$	$4p^4\,(^3P_1)\,6d\ ^4P_{3/2}$	23274	906608	1h	24
110·304	3/2	3/2	0	906608	1h	24
110·189	3/2	5/2	0	907534	1	24

Mo VIII (Br-Sequence) IP=1176100 cm^{-1} (145·8 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
112·746	$4p^5\ ^2P^o_{1/2}$	$4p^4\,(^3P_1)\,6d\ ^2P_{3/2}$	23274	910220	1	24
109·864	3/2	3/2	0	910220	1h	24
111·461	$4p^5\ ^2P^o_{1/2}$	$4p^4\,(^1D_2)\,6d\ ^2S_{1/2}$	23274	920428	1h	24
108·648	3/2	1/2	0	920428	1h	24
111·383	$4p^5\ ^2P^o_{1/2}$	$4p^4\,(^1D_2)\,6d\ ^2P_{3/2}$	23274	921068	3d	24
111·012	1/2	1/2	23274	924105	1h	24
110·573	$4p^5\ ^2P^o_{1/2}$	$4p^4\,(^1D_2)\,6d\ ^2D_{3/2}$	23274	927660	1b	24
108·255	3/2	5/2	0	923747	1	24
109·904	$4p^5\ ^2P^o_{3/2}$	$4p^4\,(^3P_1)\,6d\ ^2F_{5/2}$	0	909889	2b	24
109·760	$4p^5\ ^2P^o_{1/2}$	$4p^4 7s\ (^3P_1, \frac{1}{2})_{1/2}$	23274	934364	3	24
107·203	3/2	3/2	0	932812	4s	24
107·024	3/2	1/2	0	934364	3db	24
109·095	$4p^4\ ^2P^o_{3/2}$	$4p^4 7s\ (^3P_2, \frac{1}{2})_{5/2}$	0	916634	2db	24
108·796	3/2	3/2	0	919154	4b	24
108·571	$4p^5\ ^2P^o_{3/2}$	$4p^4\,(^1D_2)\,6d\ ^2P_{3/2}$	0	921068	1h	24
108·210	3/2	1/2	0	924105	3d	24

Mo VIII (Br-Sequence) IP=1176100 cm^{-1} (145·8 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
107·797	$4p^5\ ^2P^o_{3/2}$	$4p^4\,(^1D_2)\,6d\ ^2D_{3/2}$	0	927660	1	24
107·652	$4p^4\ ^2P^o_{3/2}$	$4p^4 7s\ (^3P_0, \frac{1}{2})_{1/2}$	0	928921	1	24
107·380	$4p^4\ ^2P^o_{1/2}$	$4p^4 7s\ (^1D_2, \frac{1}{2})_{3/2}$	23274	948153	3db	24
105·423	3/2	5/2	0	948129	6	24
106·259	$4p^5\ ^2P^o_{1/2}$	$4p^4\,(^1S_0)\,6d\ ^2D_{3/2}$	23274	964373	5db	24
104·306	$4p^4\ ^2P^o_{1/2}$	$4p^4 7s\ (^1S_0, \frac{1}{2})_{1/2}$	23274	982044	1s	24
101·823	3/2	1/2	0	982044	1	24

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167.5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
577.272	$4s^2 4p^4\ ^1S_0$	$4s4p^5\ ^3P^o_1$	72885	246113	8	71
506.462	$4s^2 4p^4\ ^1D_2$	$4s4p^5\ ^3P^o_2$	35675	233123	30	71
475.197	2	1	35675	246113	1	71
470.484	$4s^2 4p^4\ ^3P_1$	$4s4p^5\ ^3P^o_2$	20576	233123	40	71
443.388	1	1	20576	246113	18	71
435.684	0	1	16589	246113	20	71
428.959	2	2	0	233123	100	42, 71°
423.800	1	0	20576	256537	25	71
406.319	2	1	0	246113	50	71
448.956	$4s^2 4p^4\ ^1S_0$	$4s4p^5\ ^1P^o_1$	72885	295624	3	71
384.691	$4s^2 4p^4\ ^1D_2$	$4s4p^5\ ^1P^o_1$	35675	295624	75	71
338.264	$4s^2 4p^4\ ^3P_2$	$4s4p^5\ ^1P^o_1$	0	295624	15	71
363.764	$4p^4\ ^1S_0$	$4p^3\ (^2D^o)\ 4d\ ^3D^o_1$	72885	347777	2	69
325.188	$4p^4\ ^1S_0$	$4p^3\ (^2P^o)\ 4d\ ^3D^o_1$	72885	380383	7	69
320.416	$4p^4\ ^1D_2$	$4p^3\ (^2D^o)\ 4d\ ^3D^o_1$	35675	347777	6	69

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167·5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
317·704	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ)\ 4d\ ^3F^\circ_2$	35675	350444	6	69
314·446	2	3	35675	353696	2	69
306·182	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ)\ 4d\ ^3G^\circ_3$	35675	362277	5	69
305·634	$4p^4\ ^3P_1$	$4p^3\ (^2D^\circ)\ 4d\ ^3D^\circ_1$	20576	347777	3	69
301·939	0	1	16589	347777	2	69
287·537	2	1	0	347777	9	69
303·148	$4p^4\ ^3P_1$	$4p^3\ (^2D^\circ)\ 4d\ ^3F^\circ_2$	20576	350444	9	69
285·346	2	2	0	350444	3	69
282·728	2	3	0	353696	8	69
290·108	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ)\ 4d\ ^3D^\circ_1$	35675	380383	10	69
280·133	2	2	35675	392634	2	69
272·543	2	3	35675	402590	12	69
289·140	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ)\ 4d\ ^1D^\circ_2$	35675	381528	3	69
287·291	$4p^4\ ^1S_0$	$4p^3\ (^2D^\circ)\ 4d\ ^1P^\circ_1$	72885	420947	9	69
283·169	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ)\ 4d\ ^3P^\circ_1$	35675	388801	25	69
270·262	2	2	35675	405684	3	69

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167.5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
278.019	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ)\ 4d\ ^3F^\circ_3$	35675	395360	14	69
276.978	2	2	35675	396711	22	69
277.914	$4p^4\ ^3P_1$	$4p^3\ (^2P^\circ)\ 4d\ ^3D^\circ_1$	20576	380383	2	69
274.885	0	1	16589	380383	18	69
268.771	1	2	20576	392634	7	69
262.894	2	1	0	380383	8	69
254.702	2	2	0	392634	3	69
248.391	2	3	0	402590	24	69
277.347	$4p^4\ ^1S_0$	$4p^3\ (^2D^\circ)\ 4d\ ^3P^\circ_1$	72885	433445	9	69
276.032	$4p^4\ ^3P_2$	$4p^3\ (^2D^\circ)\ 4d\ ^3G^\circ_3$	0	362277	24	69
271.572	$4p^4\ ^3P_1$	$4p^3\ (^2P^\circ)\ 4d\ ^3P^\circ_1$	20576	388801	6	69
259.667	1	2	20576	405684	6	69
257.202	2	1	0	388801	8	69
246.499	2	2	0	405684	12	69
265.860	$4p^4\ ^3P_1$	$4p^3\ (^2P^\circ)\ 4d\ ^3F^\circ_2$	20576	396711	24	69
252.936	2	3	0	395360	20	69
252.077	2	2	0	396711	12	69
262.413	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ)\ 4d\ ^3S^\circ_1$	35675	416746	24	69

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167.5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
262.103	$4p^4\ ^3P_2$	$4p^3\ (^2P^\circ)\ 4d\ ^1D^\circ_2$	0	381528	14	69
260.792	$4p^4\ ^1D_2$	$2s^2 4p^3\ (^2D^\circ)\ 4d\ ^3P^\circ_2$	35675	419123	14	69
251.405	2	1	35675	433445	16	69
259.569	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ)\ 4d\ ^1P^\circ_1$	35675	420947	25	69
257.503	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ)\ 4d\ ^1F^\circ_3$	35675	424009	6	69
252.638	$4p^4\ ^1D_2$	$4p^3\ (^4S^\circ)\ 4d\ ^3D^\circ_3$	35675	431498	2	69
246.718	2	2	35675	441012	25	69
242.817	2	1	35675	447509	11	69
252.418	$4p^4\ ^3P_1$	$4p^3\ (^2D^\circ)\ 4d\ ^3S^\circ_1$	20576	416746	13	69
249.906	0	1	16589	416746	14	69
239.953	2	1	0	416746	24	69
250.912	$3s^2 4p^4\ ^3P_1$	$4p^3\ (^2D^\circ)\ 4d\ ^3P^\circ_2$	20576	419123	20	69
242.211	1	1	20576	433445	20	69
239.886	0	1	16589	433445	18	69
238.591	2	2	0	419123	25	69
230.708	2	1	0	433445	12	69
249.769	$4p^4\ ^3P_1$	$4p^3\ (^2D^\circ)\ 4d\ ^1P^\circ_1$	20576	420947	20	69

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167.5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
247.304	0	1	16589	420947	22	69
237.560	2	1	0	420947	20	69
240.958	$4p^4\ ^1S_0$	$4p^3\ (^2P^\circ)\ 4d\ ^1P^\circ_1$	72885	487905	25	69
237.843	$4p^4\ ^3P_1$	$4p^3\ (^4S^\circ)\ 4d\ ^3D^\circ_2$	20576	441012	25	69
234.228	1	1	20576	447509	20	69
232.056	0	1	16589	447509	25	69
231.751	2	3	0	431498	24	69
226.747	2	2	0	441012	25	69
223.458	2	1	0	447509	10	69
237.843	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ)\ 4d\ ^1D^\circ_2$	35675	456111	25	69
235.850	$4p^4\ ^3P_2$	$4p^3\ (^2P^\circ)\ 4d\ ^1F^\circ_3$	0	424009	16	69
231.991	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ)\ 4d\ ^1F^\circ_3$	35675	466718	25	69
229.607	$4p^4\ ^3P_1$	$4p^3\ (^2D^\circ)\ 4d\ ^1D^\circ_2$	20576	456111	14	69
221.127	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ)\ 4d\ ^1P^\circ_1$	35675	487905	2	69
214.266	$4p^4\ ^3P_2$	$4p^3\ (^2D^\circ)\ 4d\ ^1F^\circ_3$	0	466718	10	69

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167·5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
213·980	$4p^4\ ^3P_1$	$4p^3\ (^2P^\circ)\ 4d\ ^1P^\circ_1$	20576	487905	9	69
212·168	0	1	16589	487905	6	69
178·010	$4p^4\ ^3P_1$	$4p^3\ (^4S^\circ_{3/2})\ 5s\ ^3S^\circ_1$	20566	582355	7b	25°, 69
176·750	0	1	16544	582355	6	25°, 69
171·713	2	1	0	582355	12s	25°, 69
176·682	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ_{3/2})\ 5s\ ^3D^\circ_2$	35607	601679	4	25°, 69
176·432	2	1	35607	602455	4b	25°, 69
174·887	$4p^4\ ^3P_2$	$4p^3\ (^4S^\circ_{3/2})\ 5s\ ^5S^\circ_2$	0	571798	11	25°, 69
174·346	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ_{5/2})\ 5s\ ^3D^\circ_3$	35607	609235	6	25°, 69
174·019	$4p^4\ ^1S_0$	$4p^3\ (^2P^\circ_{3/2})\ 5s\ ^1P^\circ_1$	72827	647534	7	25°, 69
173·091	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ_{5/2})\ 5s\ ^1D^\circ_2$	35607	613394	15	25°, 69
172·083	$4p^4\ ^3P_1$	$4p^3\ (^2D^\circ_{3/2})\ 5s\ ^3D^\circ_2$	20566	601679	6	25°, 69
171·862	1	1	20566	602455	11	25°, 69
170·674	0	1	16544	602455	3db	25°, 69
166·201	2	2	0	601679	12s	25°, 69
168·683	$4p^4\ ^3P_1$	$4p^3\ (^2D^\circ_{5/2})\ 5s\ ^1D^\circ_2$	20566	613394	6	25°, 69

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167・5eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
163・033	2	2	0	613394	5d	25°, 69
168・144	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ_{1/2})\ 5s\ ^3P^\circ_1$	35607	630391	6	25°, 69
164・454	$4p^4\ ^3P_1$	$4p^3\ (^2P^\circ_{1/2})\ 5s\ ^3P^\circ_0$	20566	628649	6	25°, 69
163・986	1	1	20566	630391	4db	25°, 69
164・355	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ_{3/2})\ 5s\ ^3P^\circ_2$	35607	644120	7d	25°, 69
164・144	$4p^4\ ^3P_2$	$4p^3\ (^2D^\circ_{5/2})\ 5s\ ^3D^\circ_3$	0	609235	20s	25°, 69
163・436	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ_{3/2})\ 5s\ ^1P^\circ_1$	35607	647534	7	25°, 69
162・918	$4p^4\ ^3P_0$	$4p^3\ (^2P^\circ_{1/2})\ 5s\ ^3P^\circ_1$	16544	630391	7	25°, 69
158・641	2	1	0	630391	3d	25°, 69
160・375	$4p^4\ ^3P_1$	$4p^3\ (^2P^\circ_{3/2})\ 5s\ ^3P^\circ_2$	20566	644120	9	25°, 69
155・246	2	2	0	644120	5db	25°, 69
132・908	$4p^4\ ^1S_0$	$4p^3\ (^2P^\circ)\ 5d\ ^3D^\circ_1$	72889	825266	1	69
132・077	$4p^4\ ^1S_0$	$4p^3\ (^2P^\circ)\ 5d\ ^3P^\circ_1$	72889	830015	0	69
128・878	$4p^4\ ^1S_0$	$4p^3\ (^2D^\circ)\ 5d\ ^3P^\circ_1$	72889	848809	0	69

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167·5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
128·740	$4p^4\ ^3P_1$	$4p^3\,(^2D^\circ)\,5d\ ^3D^\circ_1$	20602	797355	1	69
128·076	0	1	16623	797355	1	69
128·200	$4p^4\ ^3P_1$	$4p^3\,(^2D^\circ)\,5d\ ^3F^\circ_2$	20602	800579	1	69
124·914	2	2	0	800579	2	69
127·086	$4p^4\ ^1D_2$	$4p^3\,(^2D^\circ)\,5d\ ^3G^\circ_3$	35673	822534	1	69
126·187	$4p^4\ ^1S_0$	$4p^3\,(^4S^\circ)\,5d\ ^3D^\circ_1$	72889	865366	2	69
126·100	$4p^4\ ^1D_2$	$4p^3\,(^2P^\circ)\,5d\ ^1D^\circ_2$	35673	828728	4	69
124·266	$4p^4\ ^3P_1$	$4p^3\,(^2P^\circ)\,5d\ ^3D^\circ_1$	20602	825266	2	69
123·660	0	1	16623	825266	0	69
121·180	2	1	0	825266	1	69
119·114	2	3	0	839507	10b	69
124·408	$4p^4\ ^1D_2$	$4p^3\,(^2P^\circ)\,5d\ ^3D^\circ_3$	35673	839507	5	69
124·369	$4p^4\ ^1D_2$	$4p^3\,(^2P^\circ)\,5d\ ^3P^\circ_2$	35673	839713	2	69
124·221	$4p^4\ ^1D_2$	$4p^3\,(^2D^\circ)\,5d\ ^3P^\circ_2$	35673	840654	0	69
122·984	2	1	35673	848809	1	69

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167.5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
123.778	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ)\ 5d\ ^1P^\circ_1$	35673	843565	0	69
123.738	$4p^4\ ^3P_1$	$4p^3\ (^2P^\circ)\ 5d\ ^1D^\circ_2$	20602	828728	5	69
120.663	2	2	0	828728	0	69
123.545	$4p^4\ ^3P_1$	$4p^3\ (^2P^\circ)\ 5d\ ^3P^\circ_1$	20602	830015	8	69
122.084	1	2	20602	839713	3	69
120.478	2	1	0	830015	3	69
119.087	2	2	0	839713	0	69
123.485	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ)\ 5d\ ^1F^\circ_3$	35673	845474	4	69
123.178	$4p^4\ ^1D_2$	$4p^3\ (^4S^\circ)\ 5d\ ^3D^\circ_3$	35673	847507	6b	69
120.528	2	1	35673	865366	0	69
122.897	$4p^4\ ^1S_0$	$4p^3\ (^2P^\circ)\ 5d\ ^1P^\circ_1$	72889	886605	2	69
121.941	$2p^4\ ^3P_1$	$4p^3\ (^2D^\circ)\ 5d\ ^3P^\circ_2$	20602	840654	6	69
120.156	0	1	16623	848809	4	69
118.959	2	2	0	840654	5	69
117.814	2	1	0	848809	5b	69
121.577	$4p^4\ ^3P_2$	$4p^3\ (^2D^\circ)\ 5d\ ^3G^\circ_3$	0	822534	6	69

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167.5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
121.517	$4p^4\ ^3P_1$	$4p^3(^2D^\circ)5d\ ^1P^\circ_1$	20602	843565	1	69
118.537	2	1	0	843565	0	69
119.913	$4p^4\ ^1D_2$	$4p^3(^2D^\circ)5d\ ^1D^\circ_2$	35673	869633	1	69
118.373	$4p^4\ ^3P_1$	$4p^3(^4S^\circ)5d\ ^3D^\circ_1$	20602	865366	4	69
117.814	0	1	16623	865366	5b	69
118.279	$4p^4\ ^3P_2$	$4p^3(^2P^\circ)5d\ ^1F^\circ_3$	0	845474	4	69
117.775	$4p^4\ ^3P_1$	$4p^3(^2D^\circ)5d\ ^1D^\circ_2$	20602	869633	1	69
116.248	$4p^4\ ^3P_1$	$4p^3(^4S^\circ)6s\ ^3S^\circ_1$	20602	880843	0	69
113.523	2	1	0	880843	5	69
115.471	$4p^4\ ^3P_1$	$4p^3(^2P^\circ)5d\ ^1P^\circ_1$	20602	886605	0	69
114.935	0	1	16623	886605	4b	69
116.088	$4p^4\ ^1S_0$	$4p^3(^2P^\circ)6s\ ^3P^\circ_1$	72889	934288	2	69
114.920	$4p^4\ ^1D_2$	$4p^3(^2D^\circ)6s\ ^3D^\circ_2$	35673	905858	4b	69
114.854	2	1	35673	906239	0	69
114.042	2	3	35673	912477	0	69

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167·5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
114·212	$4p^4\ ^3P_2$	$4p^3(^4S^\circ)6s\ ^5S^\circ_2$	0	875565	1	69
113·932	$4p^4\ ^1S_0$	$4p^3(^2P^\circ)6s\ ^1P^\circ_1$	72889	950649	4	69
113·663	$4p^4\ ^1D_2$	$4p^3(^2D^\circ)6s\ ^1D^\circ_2$	35673	915504	10	69
112·916	$4p^4\ ^3P_1$	$4p^3(^2D^\circ)6s\ ^3D^\circ_1$	20602	906239	12b	69
112·411	0	1	16623	906239	1	69
110·391	2	2	0	905858	8b	69
109·600	2	3	0	912477	5	69
111·739	$4p^4\ ^3P_1$	$4p^3(^2D^\circ)6s\ ^1D^\circ_2$	20602	915504	2	69
109·227	2	2	0	915504	1	69
111·286	$4p^4\ ^1D_2$	$4p^3(^2P^\circ)6s\ ^3P^\circ_1$	35673	934288	4	69
109·650	2	2	35673	947617	4	69
109·552	$4p^4\ ^3P_1$	$4p^3(^2P^\circ)6s\ ^3P^\circ_0$	20602	933385	1	69
109·444	1	1	20602	934288	4	69
108·966	0	1	16623	934288	1	69
107·876	1	2	20602	947617	1	69
109·287	$4p^4\ ^1D_2$	$4p^3(^2P^\circ)6s\ ^1P^\circ_1$	35673	950649	4	69

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167.5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
106.080	$4p^4\ ^1S_0$	$4p^3\ (^2P^\circ)\ 6d\ ^3D^\circ_1$	72889	1015585	5	69
104.752	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ)\ 6d\ ^3F^\circ_2$	35673	990382	3	69
103.415	$4p^4\ ^3P_1$	$4p^3\ (^2D^\circ)\ 6d\ ^3D^\circ_1$	20602	987579	2	69
102.985	0	1	16623	987579	2	69
100.099	$4p^4\ ^3P_0$	$4p^3\ (^2P^\circ)\ 6d\ ^3D^\circ_1$	16623	1015585	4	69
98.460	2	1	0	1015585	4	69
97.635	2	3	0	1024196	1	69
103.110	$4p^4\ ^3P_1$	$4p^3\ (^2D^\circ)\ 6d\ ^3F^\circ_2$	20602	990382	4	69
100.967	2	2	0	990382	2	69
102.152	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ)\ 6d\ ^3G^\circ_3$	35673	1014603	3	69
102.056	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ)\ 6d\ ^3D^\circ_1$	35673	1015585	0	69
101.164	2	3	35673	1024196	5	69
101.744	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ)\ 6d\ ^3P^\circ_1$	35673	1018148	1	69
101.675	$4p^4\ ^1S_0$	$4p^3\ (^4S^\circ)\ 6d\ ^3D^\circ_1$	72889	1056382	2	69
101.069	2	2	35673	1025122	4	69

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167·5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
100·742	$4p^4\ ^1S_0$	$4p^3\ (^2P^\circ)\ 6d\ ^1P^\circ_1$	72889	1065491	4	69
100·437	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ)\ 6d\ ^1F^\circ_3$	35673	1031317	2	69
100·370	$4p^4\ ^3P_1$	$4p^3\ (^2P^\circ)\ 6d\ ^1D^\circ_2$	20602	1016860	1	69
98·345	2	2	0	1016860	1	69
100·246	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ)\ 6d\ ^3P^\circ_2$	35673	1033227	4b	69
99·566	2	1	35673	1040059	1	69
100·246	$4p^4\ ^3P_1$	$4p^3\ (^2P^\circ)\ 6d\ ^3P^\circ_1$	20602	1018148	4b	69
99·852	0	1	16623	1018148	0	69
99·545	1	2	20602	1025122	0	69
98·217	2	1	0	1018148	0	69
99·194	$4p^4\ ^3P_1$	$4p^3\ (^4S^\circ)\ 7s\ ^3S^\circ_1$	20602	1028743	4	69
98·795	0	1	16623	1028743	0	69
97·206	2	1	0	1028743	1	69
98·977	$4p^4\ ^1S_0$	$4p^3\ (^2P^\circ)\ 7s\ ^3P^\circ_1$	72889	1083142	1	69
98·750	$4p^4\ ^3P_1$	$4p^3\ (^2D^\circ)\ 6d\ ^3P^\circ_2$	20602	1033227	2	69
98·087	1	1	20602	1040059	1	69
97·710	0	1	16623	1040059	4	69

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167·5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
96·145	2	1	0	1040059	4	69
98·561	$4p^4\ ^3P_2$	$4p^3\ (^2D^\circ)\ 6d\ ^3G^\circ_3$	0	1014603	5	69
98·097	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ)\ 7s\ ^3D^\circ_1$	35673	1055089	1b	69
98·077	2	2	35673	1055312	1b	69
97·416	2	3	35673	1062162	1	69
97·885	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ)\ 6d\ ^1D^\circ_2$	35673	1057289	4	69
97·494	$4p^4\ ^3P_2$	$4p^3\ (^4S^\circ)\ 7s\ ^5S^\circ_2$	0	1025704	1	69
97·416	$4p^4\ ^1S_0$	$4p^3\ (^2P^\circ)\ 7s\ ^1P^\circ_1$	72889	1099412	4	69
97·206	$4p^4\ ^1D_2$	$4p^3\ (^2D^\circ)\ 7s\ ^1D^\circ_2$	35673	1064357	1	69
96·964	$4p^4\ ^3P_2$	$4p^3\ (^2P^\circ)\ 6d\ ^1F^\circ_3$	0	1031317	0	69
96·660	$4p^4\ ^3P_1$	$4p^3\ (^2D^\circ)\ 7s\ ^3D^\circ_1$	20602	1055089	4	69
96·295	0	1	16623	1055089	0	69
94·756	2	2	0	1055312	5	69
94·151	2	3	0	1062162	4	69
96·546	$4p^4\ ^3P_1$	$4p^3\ (^4S^\circ)\ 6d\ ^3D^\circ_1$	20602	1056382	2	69

Mo IX (Se-Sequence) IP=1351200 cm^{-1} (167·5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
96·458	$4p^4\ ^3P_2$	$4p^3\ (^2D^\circ)\ 6d\ ^1D^\circ_2$	20602	1057289	1	69
95·811	$4p^4\ ^3P_1$	$4p^3\ (^2D^\circ)\ 7s\ ^1D^\circ_2$	20602	1064357	5	69
95·703	$4p^4\ ^3P_1$	$4p^3\ (^2D^\circ)\ 6d\ ^1P^\circ_1$	20602	1065491	4	69
95·464	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ)\ 7s\ ^3P^\circ_1$	35673	1083142	1	69
94·216	2	2	35673	1097040	3	69
95·339	$4p^4\ ^3P_0$	$4p^3\ (^2P^\circ)\ 6d\ ^1P^\circ_1$	16623	1065491	5	69
94·172	$4p^4\ ^3P_1$	$4p^3\ (^2P^\circ)\ 7s\ ^3P^\circ_0$	20602	1082463	1	69
94·120	1	1	20602	1083142	5b	69
93·763	0	1	16623	1083142	2	69
92·899	1	2	20602	1097040	1	69
94·008	$4p^4\ ^1D_2$	$4p^3\ (^2P^\circ)\ 7s\ ^1P^\circ_1$	35673	1099412	6b	69

Mo X (As-Sequence) IP=1526200 cm^{-1} (189·2 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
473·955	$4s^24p^3\ ^2P^o_{3/2}$	$4s4p^4\ ^2D_{5/2}$	70544	281535	7000	76
444·565	$4s^24p^3\ ^4S^o_{3/2}$	$4s4p^4\ ^3P_{5/2}$	0	224939	100000	76
416·856	3/2	3/2	0	239891	70000	76
409·070	3/2	1/2	0	244457	40000	76
406·480	$4s^24p^3\ ^2D^o_{5/2}$	$4s4p^4\ ^2D_{5/2}$	35522	281535	300000	76
400·502	3/2	3/2	26886	276573	250000	76
403·419	$4s^24p^3\ ^2P^o_{3/2}$	$4s4p^4\ ^2P_{3/2}$	70544	318423	5000	76
380·070	1/2	3/2	55313	318423	2000	76
368·869	3/2	1/2	70544	341642	70000	76
385·816	$4s^24p^3\ ^2P^o_{1/2}$	$4s4p^4\ ^2S_{1/2}$	55313	314504	50000	76
353·483	$4s^24p^3\ ^2D^o_{5/2}$	$4s4p^4\ ^2P_{3/2}$	35522	318423	600000	76
343·007	3/2	3/2	26886	318423	5000	76
317·709	3/2	1/2	26886	341642	10000	76
347·683	$4s^24p^3\ ^2D^o_{3/2}$	$4s4p^4\ ^2S_{1/2}$	26886	314504	100000	76
349·426	$4s^24p^3\ ^2P^o_{3/2}$	$4s^24p^2\ (^3P)\ 4d\ ^4F_{3/2}$	70544	356806	7	8
344·569	3/2	5/2	70544	360771	5	8
331·683	1/2	3/2	55313	356806	1	8

Mo X (As-Sequence) IP=1526200 cm^{-1} (189・2eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
331・072	$4s^24p^3\ ^2P^o_{3/2}$	$4s^24p^2\ (^3P)\ 4d\ ^4D_{1/2}$	70544	372595	6	8
326・255	3/2	3/2	70544	377138	2	69
319・630	3/2	5/2	70544	383475	3	69
315・162	1/2	1/2	55313	372595	2	8
310・774	1/2	3/2	55313	377138	2	69
299・081	3/2	3/2	70544	404973	2	69
314・049	$4s^24p^3\ ^4S^o_{3/2}$	$4s4p^4\ ^2P_{3/2}$	0	318423	1000	76
311・209	$4s^24p^3\ ^2D^o_{5/2}$	$4s^24p^2\ (^3P)\ 4d\ ^4F_{3/2}$	35522	356806	5	8
307・467	5/2	5/2	35525	360771	6	8
303・066	3/2	3/2	26886	356806	16	8
300・746	5/2	7/2	35525	368029	9	8
299・505	3/2	5/2	26886	360771	10	8
299・122	$4s^24p^3\ ^2D^o_{5/2}$	$4s^24p^2\ (^3P)\ 4d\ ^2F_{5/2}$	35522	369830	8	8
294・271	5/2	7/2	35522	375345	3	8
291・576	3/2	5/2	26886	369830	5	8
292・748	$4s^24p^3\ ^2D^o_{5/2}$	$4s^24p^2\ (^3P)\ 4d\ ^4D_{3/2}$	35522	377138	4	69
289・255	3/2	1/2	26886	372595	12	8
287・417	5/2	5/2	35522	383475	2	69
285・534	3/2	3/2	26886	377138	4	69
280・466	3/2	5/2	26886	383475	1	69

Mo X (As-Sequence) IP=1526200 cm^{-1} (189.2 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
277.593	5/2	7/2	35522	395762	5	8
289.495	$4s^24p^3\ ^2P^o_{3/2}$	$4s^24p^2(^3P)4d\ ^4P_{5/2}$	70544	416034	15	8
285.933	3/2	3/2	70544	420327	2	69
280.253	3/2	1/2	70544	427439	6	69
268.771	1/2	1/2	55313	427439	7	69
286.748	$4s^24p^3\ ^2P^o_{3/2}$	$4s^24p^2(^3P)4d\ ^2P_{1/2}$	70544	419351	4	8
274.743	1/2	1/2	55313	419351	1	69
270.954	3/2	5/2	70544	439691	10	69
280.269	$4s^24p^3\ ^4S^o_{3/2}$	$4s^24p^2(^3P)4d\ ^4F_{3/2}$	0	356806	13	8
277.168	3/2	5/2	0	360771	10	8
278.485	$4s^24p^3\ ^2P^o_{3/2}$	$4s^24p^2(^3P)4d\ ^2D_{3/2}$	70544	429685	7	8
267.085	1/2	3/2	55313	429685	5d	8
270.413	$4s^24p^3\ ^4S^o_{3/2}$	$4s^24p^2(^3P)4d\ ^2F_{5/2}$	0	369830	6	8
270.707	$4s^24p^3\ ^2D^o_{5/2}$	$4s^24p^2(^3P)4d\ ^2P_{3/2}$	35522	404973	8	69
264.512	3/2	3/2	26886	404973	8	69
254.821	3/2	1/2	26886	419351	4	69
267.896	$4s^24p^3\ ^2D^o_{5/2}$	$4s^24p^2(^1D)4d\ ^2G_{7/2}$	35522	408837	8	69

Mo X (As-Sequence) IP=1526200 cm^{-1} (189・2eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
265・597	$4s^24p^3\ ^2P^o_{3/2}$	$4s^24p^2\ (^1D)\ 4d\ ^2D_{3/2}$	70544	446970	9db	8
268・402	$4s^24p^3\ ^4S^o_{3/2}$	$4s^24p^2\ (^3P)\ 4d\ ^4D_{1/2}$	0	372595	5d	8
265・157	3/2	3/2	0	377138	3	69
260・777	3/2	5/2	0	383475	12	69
264・403	$4s^24p^3\ ^2P^o_{3/2}$	$4s^24p^2\ (^1D)\ 4d\ ^2D_{5/2}$	70544	448827	8	69
255・355	1/2	3/2	55313	446970	10	69
261・557	$4s^24p^3\ ^2P^o_{3/2}$	$4s^24p^2\ (^1D)\ 4d\ ^2P_{1/2}$	70544	452929	8	69
255・156	3/2	3/2	70544	462530	24	69
251・530	1/2	1/2	55313	452929	14	69
245・602	1/2	3/2	55313	462530	16	69
259・898	$4s^24p^3\ ^2D^o_{5/2}$	$4s^24p^2\ (^3P)\ 4d\ ^4P_{3/2}$	35522	420327	2	69
256・989	3/2	5/2	26886	416034	5	69
254・201	3/2	3/2	26886	420327	4	69
249・668	3/2	1/2	26886	427439	20	69
257・854	$4s^24p^3\ ^2P^o_{3/2}$	$4s^24p^2\ (^3P)\ 4d\ ^2F_{5/2}$	70544	458418	11	69
254・474	$4s^24p^3\ ^2P^o_{3/2}$	$4s^24p^2\ (^1D)\ 4d\ ^2S_{1/2}$	70544	463584	20	69
244・959	1/2	1/2	55313	463584	9	69

Mo X (As−Sequence) IP=1526200 cm^{-1} (189・2eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
253・731	$4s^24p^3\ ^2D^o_{5/2}$	$4s^24p^2\ (^3P)\ 4d\ ^2D_{3/2}$	35522	429685	8	69
248・282	3/2	3/2	26886	429685	2	69
247・441	5/2	5/2	35522	439691	12	69
242・258	3/2	5/2	26886	439691	16	69
246・924	$4s^24p^3\ ^4S^o_{3/2}$	$4s^24p^2\ (^3P)\ 4d\ ^2P_{3/2}$	0	404973	2	69
238・459	3/2	1/2	0	419351	5	69
243・071	$4s^24p^3\ ^2D^o_{5/2}$	$4s^24p^2\ (^1D)\ 4d\ ^2D_{3/2}$	35522	446970	6	69
241・969	5/2	5/2	35522	448827	22	69
238・064	3/2	3/2	26886	446970	25	69
237・023	3/2	5/2	26886	448827	2	69
240・370	$4s^24p^3\ ^4S^o_{3/2}$	$4s^24p^2\ (^3P)\ 4d\ ^4P_{5/2}$	0	416034	25	69
237・909	3/2	3/2	0	420327	25	69
233・957	3/2	1/2	0	427439	21	69
239・998	$4s^24p^3\ ^2P^o_{3/2}$	$4s^24p^2\ (^1S)\ 4d\ ^2D_{3/2}$	70544	487294	12	69
239・017	3/2	5/2	70544	489003	24	69
231・522	1/2	3/2	55313	487294	24	69
236・492	$4s^24p^3\ ^2D^o_{5/2}$	$4s^24p^2\ (^1D)\ 4d\ ^2F_{5/2}$	35522	458418	14	69
231・751	3/2	5/2	26886	458418	24	69
231・110	5/2	7/2	35522	468252	25	69

Mo X (As-Sequence) IP=1526200 cm^{-1} (189.2 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
234.744	$4s^24p^3\ ^2D^o_{3/2}$	$4s^24p^2\ (^1D)\ 4d\ ^2P_{1/2}$	26886	452929	6	69
232.726	$4s^24p^3\ ^4S^o_{3/2}$	$4s^24p^2\ (^3P)\ 4d\ ^2D_{3/2}$	0	429685	16	69
227.436	3/2	5/2	0	439691	4	69
229.014	$4s^24p^3\ ^2D^o_{3/2}$	$4s^24p^2\ (^1D)\ 4d\ ^2S_{1/2}$	26886	463584	8	69
221.361	$4s^24p^3\ ^2D^o_{5/2}$	$4s^24p^2\ (^1S)\ 4d\ ^2D_{3/2}$	35522	487294	2	69
220.530	5/2	5/2	35522	489003	4	69
166.831	$4s^24p^3\ ^2P^o_{3/2}$	$4s^24p^25s\ ^2P_{3/2}$	70544	669948	6000	76°
165.106	1/2	1/2	55313	660981	15000	68, 76°
162.698	1/2	3/2	55313	669948	40000p	68, 76°
163.369	$4s^24p^3\ ^2D^o_{3/2}$	$4s^24p^25s\ ^4P_{1/2}$	26886	638999	6000	68, 76°
161.442	5/2	3/2	35522	654947	6000	68, 76°
159.219	3/2	3/2	26886	654947	8000	68, 76°
159.049	5/2	5/2	35522	664258	50000	68, 76°
160.745	$4s^24p^3\ ^2P^o_{3/2}$	$4s^24p^25s\ ^2D_{5/2}$	70544	692660	30000p	68, 76°
160.075	3/2	3/2	70544	695263	100000	68, 76°
156.257	1/2	3/2	55313	695263	1500	76
157.706	$4s^24p^3\ ^2D^o_{3/2}$	$4s^24p^25s\ ^2P_{1/2}$	26886	660981	100000	68, 76°

Mo X (As-Sequence) IP=1526200 cm^{-1} (189・2 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
157・624	5/2	3/2	35522	669948	120000	68, 76°
155・506	3/2	3/2	26886	669948	20000	76
156・494	$4s^24p^3\ ^4S^\circ_{3/2}$	$4s^24p^25s\ ^4P_{1/2}$	0	638999	100000	68, 76°
152・683	3/2	3/2	0	654947	100000	68, 76°
150・544	3/2	5/2	0	664258	100000	68, 76°
153・242	$4s^24p^3\ ^2P^\circ_{3/2}$	$4s^24p^25s\ ^2S_{1/2}$	70544	723115	20000	68, 76°
149・743	1/2	1/2	55313	723115	10000	68, 76°
152・175	$4s^24p^3\ ^2D^\circ_{5/2}$	$4s^24p^25s\ ^2D_{5/2}$	35522	692660	100000	76
151・575	5/2	3/2	35522	695263	8000	76
150・201	3/2	5/2	26886	692660	30000	76
149・618	3/2	3/2	26886	695263	10000	76
144・370	$4s^24p^3\ ^4S^\circ_{3/2}$	$4s^24p^25s\ ^2D_{5/2}$	0	692660	2000	76
143・631	$4s^24p^3\ ^2D^\circ_{3/2}$	$4s^24p^25s\ ^2S_{1/2}$	26886	723115	200	76

Mo XI (Ge-Sequence) IP=1748100 cm^{-1} (216·7 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
360·518	$4s^24p^2\ ^1S_0$	$4s4p^3\ ^1P^\circ_1$	84808	362196	3	69
325·231	$4s^24p^2\ ^1D_2$	$4s4p^3\ ^1P^\circ_1$	54719	362196	16	69
324·642	$4s^24p^2\ ^3P_2$	$4s4p^3\ ^3S^\circ_1$	27136	335178	18	69
314·868	1	1	17590	335178	9	69
298·345	0	1	0	335178	5	69
306·637	$4s^24p^2\ ^1D_2$	$4s^24p4d\ ^3F^\circ_2$	54719	380832	2	69
298·242	2	3	54719	390018	2	69
290·177	$4s^24p^2\ ^3P_1$	$4s4p^3\ ^1P^\circ_1$	17590	362196	9	69
282·728	$4s^24p^2\ ^3P_2$	$4s^24p4d\ ^3F^\circ_2$	27136	380832	8	69
275·572	2	3	27136	390018	6	69
275·305	1	2	17590	380832	3	69
277·103	$4s^24p^2\ ^1D_2$	$4s^24p4d\ ^1D^\circ_2$	54719	415602	5	69
270·497	$4s^24p^2\ ^1D_2$	$4s^24p4d\ ^3P^\circ_1$	54719	424400	7	69
266·365	2	2	54719	430145	12	69
258·410	$4s^24p^2\ ^1D_2$	$4s^24p4d\ ^3D^\circ_1$	54719	441686	4	69
256·749	2	3	54719	444196	6	69

Mo XI (Ge-Sequence) IP=1748100 cm^{-1} (216·7 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
256·015	2	2	54719	445333	18	69
257·418	$4s^24p^2\ ^3P_2$	$4s^24p4d\ ^1D^\circ_2$	27136	415602	23	69
251·250	1	2	17590	415602	24	69
251·725	$4s^24p^2\ ^3P_2$	$4s^24p4d\ ^3P^\circ_1$	27136	424400	8	69
248·134	2	2	27136	430145	8	69
245·817	1	1	17590	424400	8	69
242·390	1	2	17590	430145	16	69
239·253	1	0	17590	435558	8	69
235·629	0	1	0	424400	12	69
251·351	$4s^24p^2\ ^1S_0$	$4s^24p4d\ ^1P^\circ_1$	84808	482661	14	69
241·228	$4s^24p^2\ ^3P_2$	$4s^24p4d\ ^3D^\circ_1$	27136	441686	8	69
239·778	2	3	27136	444196	25	69
239·121	2	2	27136	445333	22	69
233·780	1	2	17590	445333	16	69
226·406	0	1	0	441686	2	69
237·765	$4s^24p^2\ ^1D_2$	$4s^24p4d\ ^1F^\circ_3$	54719	475300	24	69
235·802	$4s^24p^2\ ^2P_1$	$4s^24p4d\ ^3D^\circ_1$		441686	12	69

Mo XI (Ge-Sequence) IP=1748100 cm^{-1} (216・7 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
233・684	$4s^24p^2\ ^1D_2$	$4s^24p4d\ ^1P^o_1$	54719	482661	3	69
223・134	$4s^24p^2\ ^3P_2$	$4s^24p4d\ ^1F^o_3$	27136	475300	8	69
219・526	$4s^24p^2\ ^3P_2$	$4s^24p4d\ ^1P^o_1$	27136	482661	3	69
207・179	0	1	0	482661	8	69
160・188	$4s^24p^2\ ^1S_0$	$4s^24p5s\ ^3P^o_1$	84808	709077	2	68°, 69
152・818	$4s^24p^2\ ^1D_2$	$4s^24p5s\ ^3P^o_1$	54719	709077	3	68°, 69
146・955	2	2	54719	735196	15	68°, 69
152・723	$4s^24p^2\ ^1S_0$	$4s^24p5s\ ^1P^o_1$	84808	739589	10	68°, 69
146・016	$4s^24p^2\ ^1D_2$	$4s^24p5s\ ^1P^o_1$	54719	739589	22	68°, 69
146・641	$4s^24p^2\ ^3P_2$	$4s^24p5s\ ^3P^o_1$	27136	709077	18	68°, 69
145・009	1	0	17590	707202	12	68°, 69
144・616	1	1	17590	709077	10	68°, 69
141・030	0	1	0	709077	15	68°, 69
141・231	2	2	27136	735196	20	68°, 69
139・353	1	2	17590	735196	18	68°, 69
140・357	$4s^24p^2\ ^3P_2$	$4s^24p5s\ ^1P^o_1$	27136	739589	5	68°, 69

Mo XII (Ga-Sequence) IP=1925500 cm^{-1} (238.7 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
336.64	$4s^2 4p\ ^2P^o_{3/2}$	$4s4p^2\ ^2P_{1/2}$	28359	325500		42
329.41	3/2	3/2	28359	332000		42
126.242	$4s^2 4p\ ^2P^o_{3/2}$	$4s^2 5d\ ^2D_{5/2}$	28359	820489	3	4
122.727	1/2	3/2	0	814820	2	4

Mo XIII (Zn-Sequence) IP=2324000 cm^{-1} (288·1 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
481·02	$3d^{10}4s^2\ ^1S_0$	$3d^{10}4s4p\ ^3P^\circ_1$	0	207900		42
460·9	0	2	0	217000		42
385·1	$4s4p\ ^3P^\circ_1$	$4p^2\ ^3P_0$	207900	468000		42
381·4	1	1	207900	470000		42
353·6	2	2	217000	500000		42
340·909	$4s^2\ ^1S_0$	$4s4p\ ^1P^\circ_1$	0	293330	100	1, 42, 48, 49, 72°
131·375	$4s4p\ ^3P^\circ_2$	$4s5s\ ^3S_1$			2	4
127·966	1	1			1	4
126·675	0	1			0	4
87·788	$4s^2\ ^1S_0$	$4s5p\ ^1P^\circ_1$	0	1139110	2	4
88·770	$4s^2\ ^1S_0$	$4s5p\ ^3P^\circ_2$	0	1126510	1	4
54·101	$3d^{10}4s^2\ ^1S_0$	$3d^94s^24p\ ^1P^\circ_1$	0	1848390	20	19, 93°
53·551	$3d^{10}4s^2\ ^1S_0$	$3d^94s^24p\ ^3D^\circ_1$	0	1867370	10	19, 93°

Mo XIV (Cu-Sequence) IP=2520900 cm^{-1} (312・5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
423・576	4s $^2S_{1/2}$	4p $^2P^o_{1/2}$	0	236085	2000	42, 49, 72, 73°
373・647	1/2	3/2	0	267632	10000	42, 49, 72, 73°
295・366	4f $^2F^o_{5/2}$	5d $^2D_{3/2}$	1033850	1372413	10	73
293・374	7/2	5/2	1033968	1374830	15	73
264・126	4d $^2D_{5/2}$	4f $^2F^o_{5/2}$	655242	1033850	40	73
264・043	5/2	7/2	655242	1033968	400	73
260・501	3/2	5/2	649976	1033850	300	73
261・544	4p $^2P^o_{3/2}$	4d $^2D_{3/2}$	267632	649976	200	73
257・993	3/2	5/2	267632	655242	800	73
241・609	1/2	3/2	236085	649976	800	73
184・481	4d $^2D_{3/2}$	5p $^2P^o_{1/2}$	649976	1192036	300	29, 73°
181・817	5/2	3/2	655242	1205254	600	29, 73°
180・087	3/2	3/2	649976	1205254	85	29, 73°
183・949	4f $^2F^o_{7/2}$	5g $^2G_{7/2}$	1033968	1577546	1200h	29, 73°
183・949	7/2	9/2	1033968	1577546	1200h	29, 73°
123・902	4f $^2F^o_{7/2}$	6g $^2G_{7/2}$	1033968	1841006	150h	29, 73°
123・902	7/2	9/2	1033968	1841006	150h	29, 73°
123・902	5/2	7/2	1033850	1841006	150h	29, 73°

Mo XIV (Cu-Sequence) IP=2520900 cm^{-1} (312・5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
121・647	4p $^2P^\circ_{3/2}$	5s $^2S_{1/2}$	267632	1089691	1500	4, 72, 73°
117・149	1/2	1/2	236085	1089691	1000	4, 72, 73°
112・973	4d $^2D_{5/2}$	5f $^2F^\circ_{5/2}$	655242	1540440	30u	73
112・952	5/2	7/2	655242	1540574	300	4, 73°
112・300	3/2	5/2	649976	1540440	150	4, 73°
103・500	4f $^2F^\circ_{7/2}$	7g $^2G_{7/2}$	1033968	2000101	40h	73
103・500	7/2	9/2	1033968	2000101	40h	73
103・500	5/2	7/2	1033850	2000101	40h	73
101・699	4d $^2D_{3/2}$	6p $^2P^\circ_{1/2}$	649976	1633270	30	73, 74°
101・543	5/2	3/2	655242	1640046	70	73
101・004	3/2	3/2	649976	1640046	5	73
90・519	4p $^2P^\circ_{3/2}$	5d $^2D_{3/2}$	267632	1372413	70	73
90・319	3/2	5/2	267632	1374830	400	4, 73°
88・000	1/2	3/2	236085	1372413	150	4, 73°
85・979	4d $^2D_{5/2}$	6f $^2F^\circ_{5/2}$	655242	1818317	100p	73
85・597	5/2	7/2	649976	1818244	70	73
83・890	4s $^2S_{1/2}$	5p $^2P^\circ_{1/2}$	0	1192036	400	4, 73°
82・971	1/2	3/2	0	1205254	600	4, 73°

Mo XIV (Cu-Sequence) IP=2520900 cm^{-1} (312.5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
76.216	$4p\ ^2P^o_{3/2}$	$6s\ ^2S_{1/2}$	267632	1579705	50	29, 73°
74.425	1/2	1/2	236085	1579705	20	29, 73°
63.45	$4p\ ^2P^o_{3/2}$	$7s\ ^2S_{1/2}$	267632	1843580		29
62.21	1/2	1/2	236085	1843580		29
61.201	$4s\ ^2S_{1/2}$	$6p\ ^2P^o_{1/2}$	0	1633270	40	4°, 74
60.957	1/2	3/2	0	1640046	60	4°, 73
57.65	$4p\ ^2P^o_{3/2}$	$8s\ ^2S_{1/2}$	267632	2002340		29
56.61	1/2	1/2	236085	2002340		29
53.729	$3d^{10}4s\ ^2S_{1/2}$	$3d^9\ (^2D)\ 4s4p\ (^3P)\ ^4P^o_{3/2}$	0	1861190	5	19, 93, 97°
53.100	1/2	1/2	0	1883240	3	19, 93, 97°
53.341	$4s\ ^2S_{1/2}$	$7p\ ^2P^o_{1/2}$	0	1874730	3	29, 93°, 97
53.228	1/2	3/2	0	1878710		29, 93°, 97
53.341	$3d^{10}4s\ ^2S_{1/2}$	$3d^9\ (^2D)\ 4s4p\ (^3P)\ ^4F^o_{3/2}$	0	1874730	3	19, 93, 97°
53.048	$3d^{10}4s\ ^2S_{1/2}$	$3d^9\ (^2D)\ 4s4p\ (^3P)\ ^2D^o_{3/2}$	0	1885090	10	19, 72, 93, 97°
52.753	$3d^{10}4s\ ^2S_{1/2}$	$3d^9\ (^2D)\ 4s4p\ (^3P)\ ^2P^o_{3/2}$	0	1895630	20	19, 72, 93, 97°
52.690	$3d^{10}4s\ ^2S_{1/2}$	1/2	0	1897890	10	19, 72, 93, 97°

Mo XIV (Cu-Sequence) IP=2520900 cm^{-1} (312・5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
52・476	$3d^{10}4s\ ^2S_{1/2}$	$3d^9\ (^2D)\ 4s4p\ (^3P)\ ^4D^o_{1/2}$	0	1905630	5	19, 93, 97°
52・228	1/2	3/2	0	1914680	5	19, 93, 97°
52・476	$3d^{10}4p\ ^2P^o_{3/2}$	$3d^9\ (^2D)\ 4p^2\ (^3P)\ ^4F_{5/2}$	267632	2173140	5	97
51・668	1/2	3/2	236085	2171600	5	93, 97°
52・460	$3d^{10}4p\ ^2P^o_{1/2}$	$3d^9\ (^2D)\ 4p^2\ (^1D)\ ^2S_{1/2}$	236085	2142670	2	93, 97°
52・420	$3d^{10}4p\ ^2P^o_{1/2}$	$3d^9\ (^2D)\ 4p^2\ (^1D)\ ^2P_{3/2}$	236085	2143750	2	93, 97°
52・024	$3d^{10}4p\ ^2P^o_{1/2}$	$3d^9\ (^2D)\ 4p^2\ (^3P)\ ^2D_{3/2}$	236085	2158460	8u	93, 97°
52・015	3/2	5/2	267632	2190210	10u	93, 97°
52・00	$3d^{10}4p\ ^2P^o_{3/2}$	$3d^9\ (^2D)\ 4p^2\ (^3P)\ ^2P_{1/2}$	267632	2190700	2u	93°, 97
51・895	3/2	3/2	267632	2194630	8	93, 97°
51・161	1/2	1/2	236085	2190700	1	93, 97°
51・531	$3d^{10}4p\ ^2P^o_{3/2}$	$3d^9\ (^2D)\ 4p^2\ (^1D)\ ^2F_{5/2}$	267632	2208270	1	93°, 97
51・434	$3d^{10}4p\ ^2P^o_{1/2}$	$3d^9\ (^2D)\ 4p^2\ (^1D)\ ^2D_{3/2}$	236085	2180320	1	93°, 97
51・398	$3d^{10}4s\ ^2S_{1/2}$	$3d^9\ (^2D)\ 4s4p\ (^1P)\ ^2P^o_{3/2}$	0	1945600	20	19, 72, 93°, 97
50・788	1/2	1/2	0	1968970	10	19, 72, 93°, 97

Mo XIV (Cu-Sequence) IP=2520900 cm^{-1} (312·5 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
50·956	$3d^{10}4p\ ^2P^{\circ}_{3/2}$	$3d^9(^2D)4p^2(^1S)\ ^2D_{5/2}$	267632	2230110	1	93, 97°

Mo XV (Ni−Sequence) IP=4076200 cm^{-1} (505・3 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
58・832	$3d^{10}\ ^1S_0$	$3d^94s\ ^3D_2$	0	1699750		59°, 65
57・927	$3d^{10}\ ^1S_0$	$3d^94s\ ^1D_2$	0	1726310	2	59°, 65, 97^{Δ}
50・956	$3d^{10}\ ^1S_0$	$3d^94p\ ^3P^{\circ}_1$	0	1962470	3	4, 19, 83^{Δ}, 93°
50・448	$3d^{10}\ ^1S_0$	$3d^94p\ ^1P^{\circ}_1$	0	1982230	150	4, 19, 59, 65, 83, 85, 93°, 97^{Δ}
49・914	$3d^{10}\ ^1S_0$	$3d^94p\ ^3D^{\circ}_1$	0	2003440	100	4, 19, 59, 65, 83, 85, 93°, 97^{Δ}
36・376	$3d^{10}\ ^1S_0$	$3d^94f\ (\frac{5}{2}, \frac{5}{2})^{\circ}_1$	0	2749060	2・5	83
36・060	$3d^{10}\ ^1S_0$	$3d^94f\ ^3D^{\circ}_1$	0	2773150	6・5	19, 83°
35・368	$3d^{10}\ ^1S_0$	$3d^94f\ ^1P^{\circ}_1$	0	2827410	12	19, 65, 83°, 85
29・774	$3d^{10}\ ^1S_0$	$3d^95f\ (\frac{5}{2}, \frac{7}{2})^{\circ}_1$	0	3358630	1	83
29・458	$3d^{10}\ ^1S_0$	$3d^95f\ (\frac{3}{2}, \frac{5}{2})^{\circ}_1$	0	3394660	2	83

Mo XVI (Co-Sequence) IP=4604500 cm^{-1} (570·8 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
3708·1	$3p^6 3d^9\ ^2D_{5/2}$	$3p^6 3d^9\ ^2D_{3/2}$	0	27020		89
77·456	$3p^6 3d^9\ ^2D_{3/2}$	$3p^5 3d^{10}\ ^2P^\circ_{3/2}$	27020	1318070	8	4, 19, 65, 82°
75·869	5/2	3/2	0	1318070	25	4, 19, 65, 82°
69·596	3/2	1/2	27020	1463880	15	4, 19, 65, 82°
47·959	$3d^9\ ^2D_{5/2}$	$3d^8\ (^3F)\ 4p\ ^4D^\circ_{7/2}$	0	2085110	90	5, 19, 82°, 94
47·382	5/2	5/2	0	2110510	30	82
47·871	$3d^9\ ^2D_{3/2}$	$3d^8\ (^3F)\ 4p\ ^4F^\circ_{3/2}$	27020	2115970	150	5, 65, 82°, 94
47·068	3/2	5/2	27020	2151610	90	5, 19, 65, 82°, 94
46·478	5/2	5/2	0	2151610	1000	4, 19, 65, 82°, 94
46·378	5/2	5/2	0	2156190	260	4, 19, 65, 82°, 94
47·302	$3d^9\ ^2D_{5/2}$	$3d^8\ (^3F)\ 4p\ ^4G^\circ_{7/2}$	0	2114080	20	5, 82°
47·262	5/2	5/2	0	2115860	180	4, 5, 19, 82°, 94
47·186	$3d^9\ ^2D_{3/2}$	$3d^8\ (^3P)\ 4p\ ^4P^\circ_{3/2}$	27020	2146290	140	4, 5, 19, 65, 82°, 94
47·165	3/2	5/2	27020	2147240	170	5, 19, 82°, 94
46·592	5/2	3/2	0	2146290	80	19, 82°
46·573	5/2	5/2	0	2147240	750	4, 19, 65, 82°, 94
46·859	$3d^9\ ^2D_{5/2}$	$3d^8\ (^3F)\ 4p\ ^2F^\circ_{7/2}$	0	2134060	1000	4, 65, 82°, 94

Mo XVI (Co-Sequence) IP=4604500 cm^{-1} (570·8 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
46·877	3/2	5/2	27020	2160260	150	82
46·291	5/2	5/2	0	2160260	650	4, 19, 65, 82°, 94
46·841	$3d^9\ ^2D_{5/2}$	$3d^8\ (^3F)\ 4p\ ^2D^o_{5/2}$	0	2134880	900	19, 82°, 94
46·781	3/2	3/2	27020	2164640	120	19, 65, 82°, 94
46·197	5/2	3/2	0	2164640	110	82°, 94
46·712	$3d^9\ ^2D_{3/2}$	$3d^8\ (^1D)\ 4p\ ^2F^o_{5/2}$	27020	2167770	130	4, 19, 65, 82°, 94
46·131	5/2	5/2	0	2167770	600	4, 19, 65, 82°, 94
45·250	5/2	7/2	0	2209940	30	19, 82°
46·623	$3d^9\ ^2D_{3/2}$	$3d^8\ (^1D)\ 4p\ ^2D^o_{3/2}$	27020	2171880	250	19, 65, 82°, 94
46·463	3/2	5/2	27020	2179270	440	19, 82°, 94
46·043	5/2	3/2	0	2171880	1000	4, 19, 65, 82°, 94
45·887	5/2	5/2	0	2179270	200	19, 82°, 94
46·573	$3d^9\ ^2D_{3/2}$	$3d^8\ (^3P)\ 4p\ ^4D^o_{1/2}$	27020	2174190	750	19, 82°, 94
46·478	3/2	3/2	27020	2178580	1000	19, 82°, 94
46·113	3/2	5/2	27020	2195620	300	19, 82°, 94
45·809	5/2	7/2	0	2182980	500	4, 19, 65, 82°, 94
45·545	5/2	5/2	0	2195620	250	4, 65, 82°, 94
46·352	$3d^9\ ^2D_{5/2}$	$3d^8\ (^3F)\ 4p\ ^2G^o_{7/2}$	0	2157400	450	19, 82°, 94

Mo XVI (Co-Sequence) IP=4604500 cm^{-1} (570·8 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
46·229	$3d^9\ ^2D_{3/2}$	$3d^8\ (^1D)\ 4p\ ^2P^o_{3/2}$	27020	2190160	220	4, 19, 65, 82°, 94
45·659	5/2	3/2	0	2190160	300	4, 19, 65, 82°, 94
46·043	$3d^9\ ^2D_{3/2}$	$3d^8\ (^3P)\ 4p\ ^2P^o_{3/2}$	27020	2198620	1000	19, 82°
45·553	3/2	1/2	27020	2222270	300	4, 19, 65, 82°, 94
45·483	5/2	3/2	0	2198620	220	4, 19, 65, 82°, 94
46·024	$3d^9\ ^2D_{5/2}$	$3d^8\ (^1G)\ 4p\ ^2F^o_{7/2}$	0	2172780	1600	4, 19, 65, 82°, 94
45·756	3/2	5/2	27020	2212530	700	19, 82°, 94
45·938	$3d^9\ ^2D_{3/2}$	$3d^8\ (^3P)\ 4p\ ^2D^o_{5/2}$	27020	2203870	500	4, 19, 65, 82°, 94
45·853	3/2	3/2	27020	2207940	170	19, 82°, 94
45·290	5/2	3/2	0	2207940	60	19, 65, 82°, 94
45·867	$3d^9\ ^2D_{3/2}$	$3p^8\ (^3P)\ 4p\ ^2S^o_{1/2}$	27020	2207240	150	65, 82°, 94
45·000	$3d^9\ ^2D_{5/2}$	$3d^8\ (^1G)\ 4p\ ^2G^o_{7/2}$	0	2222220	220	4, 19, 65, 82°, 94
44·509	$3d^9\ ^2D_{3/2}$	$3d^8\ (^1S)\ 4p\ ^2P^o_{1/2}$	27020	2273760	100	19, 65, 82°, 94
43·837	3/2	3/2	27020	2308200	30	19, 82°
43·324	5/2	3/2	0	2308200	60	19, 82°, 94
33·992	$3d^9\ ^2D_{3/2}$	$3d^84f\ (^3F_3)\ (2)_{5/2}$	27020	2969100	60	6°, 19
33·680	5/2	5/2	0	2969100	35	6°, 19

Mo XVI (Co-Sequence) IP=4604500 cm^{-1} (570・8 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
33・992	$3d^9\ ^2D_{3/2}$	$3d^84f\ (^3F_2)\ [1]_{3/2}$	27020	2969100	60	6°, 19
33・982	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^3F_4)\ [4]_{5/2}$	0	2942700	40	6
33・982	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^3F_4)\ [2]_{5/2}$	0	2942700	40	6
33・982	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^3F_4)\ [3]_{5/2}$	0	2942700	40	6
33・853	$3d^9\ ^2D_{3/2}$	$3d^84f\ (^3F_2)\ [2]_{5/2}$	27020	2981300	10	6
33・543	5/2	5/2	0	2981300	50	6°, 19
33・812	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^3F_3)\ [4]_{7/2}$	0	2957500	20	6
33・800	$3d^9\ ^2D_{3/2}$	$3d^84f\ (^3P_2)\ [2]_{3/2}$	27020	2985800	30	6°, 19
33・800	3/2	5/2	27020	2985800	30	6°, 19
33・479	5/2	5/2	0	2985800	25	6
33・760	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^3F_3)\ [3]_{7/2}$	0	2962100	20	6
33・740	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^3F_3)\ [1]_{3/2}$	0	2963800	35	6
33・591	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^3P_2)\ [4]_{7/2}$	0	2977000	45	6°, 19
33・479	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^3F_2)\ [3]_{7/2}$	0	2985800	25	6

Mo XVI (Co-Sequence) IP=4604500 cm^{-1} (570·8 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
33·429	$3d^9\ ^2D_{3/2}$	$3d^84d\ (^1D_2)\ [2]_{3/2}$	27020	3018600	20	6
33·429	$3d^9\ ^2D_{5/2}$	$3d^84d\ (^3P_2)\ [3]_{5/2}$	0	2991400	20	6
33·347	5/2	7/2	0	2998800	40	6°, 19
33·293	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^3P_0)\ [3]_{7/2}$	0	3003600	45	6°, 19
33·264	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^3P_1)\ [2]_{5/2}$	0	3006300	10	6
33·235	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^3P_1)\ [4]_{7/2}$	0	3008900	10	6°, 19
33·211	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^1D_2)\ [4]_{7/2}$	0	3011100	15	6°, 19
33·211	$3d^9\ ^2D_{3/2}$	$3d^84f\ (^1G_4)\ [1]_{3/2}$	27020	3038000	15	6°, 19
33·100	3/2	1/2	27020	3048400	35	6°, 19
32·916	5/2	3/2	0	3038000	50	6°, 19, 65
33·185	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^3P_1)\ [3]_{5/2}$	0	3013400	25	6
33·161	$3d^9\ ^2D_{3/2}$	$3d^84f\ (^1G_4)\ [2]_{5/2}$	27020	3043200	25	6
33·120	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^1D_2)\ [3]_{7/2}$	0	3019300	35	6
32·981	3/2	5/2	27020	3059000	70	6°, 19, 65
32·691	5/2	5/2	0	3059000	20	6°, 19, 65

Mo XVI (Co-Sequence) IP=4604500 cm^{-1} (570·8 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
33·067	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^1D_2)\ [1]_{3/2}$	0	3024200	25	6
32·981	$3d^9\ ^2D_{3/2}$	$3d^84f\ (^1G_4)\ [2]_{3/2}$	27020	3059000	70	6°, 19, 65
32·860	5/2	5/2	0	3043200	75	6°, 19, 65
32·691	5/2	3/2	0	3059000	20	6°, 19, 65
32·860	$3d^9\ ^2D_{5/2}$	$3d^84f\ (^1G_4)\ [3]_{7/2}$	0	3043200	75	6°, 19, 65
32·323	$3d^9\ ^2D_{3/2}$	$3d^84f\ (^1S_0)\ [3]_{5/2}$	27020	3119100	40	6°, 19, 65
32·078	5/2	7/2	0	3117400	30	6°, 19, 65
32·061	5/2	5/2	0	3119100	15	6

Mo XVII (Fe-Sequence) IP=5132100 cm^{-1} (636·2 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
4123·5	$3d^8\ ^3F_4$	$3d^8\ ^3F_3$	0	24250		89
83·079	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^1D^\circ_2$	77960	1281600	50	12, 75°
82·556	$3p^63d^8\ ^3P_1$	$3p^53d^9\ ^1D^\circ_2$	70310	1281600	20	75
81·261	2	2	51000	1281600	100	12, 75°
82·317	$3p^63d^8\ ^1S_0$	$3p^53d^9\ ^3D^\circ_1$	176680	1391470	10	75, 80°
81·382	$3p^63d^8\ ^1G_4$	$3p^53d^9\ ^3F^\circ_3$	82420	1311160	20	75
81·080	$3p^63d^8\ ^1D_2$	$3p^53d^9\ ^3F^\circ_3$	77960	1311160	20p	75
73·122	2	2	77960	1445570	150	12, 19, 75°
80·734	$3p^63d^8\ ^3F_3$	$3p^53d^9\ ^3F^\circ_4$	24250	1262860	30	75
79·186	4	4	0	1262860	1500	12, 19, 75°
77·706	3	3	24250	1311160	20	75
76·269	4	3	0	1311160	600	12, 19, 75°
70·494	2	2	27030	1445570	5	75
70·367	3	2	24250	1445570	3	75
79·711	$3p^63d^8\ ^3F_2$	$3p^53d^9\ ^1D^\circ_2$	27030	1281600	700	12, 19, 75°
79·532	3	2	24250	1281600	5	75

Mo XVII (Fe-Sequence) IP=5132100 cm^{-1} (636·2 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
79·359	$3p^6 3d^8\ ^3P_2$	$3p^5 3d^9\ ^3F^\circ_3$	51000	1311160	5	75
71·705	2	2	51000	1445570	7	75
79·062	$3p^6 3d^8\ ^1D_2$	$3p^5 3d^9\ ^3D^\circ_2$	77960	1342800	100	12, 75°
77·396	2	3	77960	1370010	5p	75
78·019	$3p^6 3d^8\ ^3P_1$	$3p^5 3d^9\ ^3P^\circ_1$	70310	1352050	40	12, 75°
77·898	0	1	68350	1352050	15	75
77·727	1	0	70310	1356860	30	75
76·863	2	1	51000	1352050	200h	12, 75°
71·359	1	2	70310	1471690	30	12, 19, 75°
70·386	2	2	51000	1471690	15	12, 19, 75°
77·666	$3p^6 3d^8\ ^1G_4$	$3p^5 3d^9\ ^3D^\circ_3$	82420	1370010	30	12, 75°
77·410	$3p^6 3d^8\ ^3P_2$	$3p^5 3d^9\ ^3D^\circ_2$	51000	1342800	20	12, 75°
75·816	2	3	51000	1370010	15	75
75·580	0	1	68350	1391470	15	75
74·600	2	1	51000	1391470	5	75
75·840	$3p^6 3d^8\ ^3F_3$	$3p^5 3d^9\ ^3D^\circ_2$	24250	1342800	150	12, 75°
74·306	3	3	24250	1370010	200	12, 19, 75°
73·289	2	1	27030	1391470	200	12, 19, 75°
72·990	4	3	0	1370010	300	12, 19, 75°

Mo XVII (Fe-Sequence) IP=5132100 cm^{-1} (636·2 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
72·092	$3p^6 3d^8\ ^1S_0$	$3p^5 3d^9\ ^1P^\circ_1$	176680	1563830	20	75, 80°
71·750	$3p^6 3d^8\ ^1D_2$	$3p^5 3d^9\ ^3P^\circ_2$	77960	1471690	5	75
69·088	$3p^6 3d^8\ ^3F_3$	$3p^5 3d^9\ ^3P^\circ_2$	24250	1471690	30	75
68·390	$3p^6 3d^8\ ^1G_4$	$3p^5 3d^9\ ^1F^\circ_3$	82420	1544660	800	12, 19, 75°
68·188	$3p^6 3d^8\ ^1D_2$	$3p^5 3d^9\ ^1F^\circ_3$	77960	1544660	3h	75
67·302	$3p^6 3d^8\ ^1D_2$	$3p^5 3d^9\ ^1P^\circ_1$	77960	1563830	15	12, 19, 75°
66·100	$3p^6 3d^8\ ^3P_2$	$3p^5 3d^9\ ^1P^\circ_1$	51000	1563830	3	75
65·891	$3p^6 3d^8\ ^3F_2$	$3p^5 3d^9\ ^1F^\circ_3$	27030	1544660	1h	75
65·770	$_3$	$_3$	24250	1544660	4	75
44·045	$3d^8\ ^3F_4$	$3d^7 4p\ (1)_4$	0	2270430	5	95
43·992	$3d^8\ ^3P_2$	$3d^7 4p\ (3)_3$	51000	2324090	10	95
43·802	$3d^8\ ^3P_2$	$3d^7 4p\ (4)_3$	51000	2334250	5	95
43·553	$3d^8\ ^3P_1$	$3d^7 4p\ (9)_2$	70310	2366360	10	95

Mo XVII (Fe−Sequence) IP=5132100 cm^{-1} (636·2 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
43·529	$3d^8\ ^3F_4$	$3d^74p\ (2)_4$	0	2297320	15	95
43·510	$3d^8\ ^3P_2$	$3d^74p\ (6)_3$	51000	2349350	8	95
43·446	$3d^8\ ^1G_4$	$3d^74p\ (7)_5$	82420	2383840	15	95
43·362	$3d^8\ ^3P_1$	$3d^74p\ (10)_2$	70310	2376490	15	95
43·340	$3d^8\ ^3F_2$	$3d^74p\ (4)_3$	27030	2334250	5	95
43·285	$3d^8\ ^1G_4$	$3d^74p\ (11)_4$	82420	2393213	25	95
43·256	$3d^8\ ^3F_4$	$3d^74p\ (2)_5$	0	2311790	20	95
43·224	$3d^8\ ^3P_1$	$3d^74p\ (8)_1$	70310	2383830	5	95
43·198	$3d^8\ ^3P_2$	$3d^74p\ (9)_2$	51000	2366360	20	95
43·144	$3d^8\ ^3P_1$	$3d^74p\ (9)_1$	70310	2388150	5	95
43·105	$3d^8\ ^3F_4$	$3d^74p\ (3)_4$	0	2319900	25	95
43·029	$3d^8\ ^3F_4$	$3d^74p\ (3)_3$	0	2324090	5	95

Mo XVII (Fe-Sequence) IP=5132100 cm^{-1} (636·2 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
42·980	$3d^8\ ^3F_2$	$3d^74p\ (4)_1$	27030	2353690	5	95
42·939	$3d^8\ ^1G_4$	$3d^74p\ (9)_5$	82420	2411280	15	95
42·891	$3d^8\ ^1G_4$	$3d^74p\ (13)_4$	82420	2413910	50	95
42·846	$3d^8\ ^3F_4$	$3d^74p\ (4)_3$	0	2334250	30	95
42·817	$3d^8\ ^1D_2$	$3d^74p\ (16)_3$	77960	2413480	5	95
42·802	$3d^8\ ^3F_3$	$3d^74p\ (8)_3$	24250	2360950	5	95
42·767	$3d^8\ ^3F_4$	$3d^74p\ (4)_5$	0	2338250	5	95
42·704	$3d^8\ ^3F_4$	$3d^74p\ (5)_4$	0	2341690	35	95
42·647	$3d^8\ ^3F_3$	$3d^74p\ (9)_3$	24250	2368938	5	95
42·603	$3d^8\ ^3P_2$	$3d^74p\ (14)_3$	51000	2398907	30	95
42·564	$3d^8\ ^3F_4$	$3d^74p\ (6)_4$	0	2349981	5	95
42·543	$3d^8\ ^1D_2$	$3d^74p\ (14)_1$	77960	2429152	25	95

Mo XVII (Fe−Sequence) IP=5132100 cm^{-1} (636·2 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
42·489	$3d^8\ ^1S_0$	$3d^74p\ (19)_1$	176680	2530230	30	95
42·473	$3d^8\ ^1G_4$	$3d^74p\ (10)_5$	82420	2436880	40	95
42·400	$3d^8\ ^3F_4$	$3d^74p\ (5)_5$	0	2358500	50	95
42·387	$3d^8\ ^3F_3$	$3d^74p\ (10)_4$	24250	2383490	50	95
42·290	$3d^8\ ^3P_1$	$3d^74p\ (19)_2$	70310	2434930	5	95
42·245	$3d^8\ ^3F_3$	$3d^74p\ (13)_3$	24250	2391778	30	95
42·200	$3d^8\ ^3F_3$	$3d^74p\ (14)_2$	24250	2394635	5	95
42·163	$3d^8\ ^1D_2$	$3d^74p\ (20)_3$	77960	2449993	5	95
42·116	$3d^8\ ^3F_4$	$3d^74p\ (10)_3$	0	2374600	15	95
42·089	$3d^8\ ^3P_2$	$3d^74p\ (18)_3$	51000	2426890	25	95
42·061	$3d^8\ ^3F_4$	$3d^74p\ (6)_5$	0	2377729	5	95
41·954	$3d^8\ ^3F_4$	$3d^74p\ (7)_5$	0	2383840	19	95

Mo XVII (Fe-Sequence) IP=5132100 cm^{-1} (636·2 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
41·908	$3d^8\ ^3F_4$	$3d^74p\ (12)_3$	0	2386200	30	95
41·844	$3d^8\ ^1G_4$	$3d^74p\ (21)_3$	82420	2472230	20	95
41·767	$3d^8\ ^3P_2$	$3d^74p\ (20)_2$	51000	2445644	5	95
41·576	$3d^8\ ^3F_3$	$3d^74p\ (15)_4$	24250	2430370	5	95
41·490	$3d^8\ ^3F_4$	$3d^74p\ (9)_5$	0	2411280	5	95
41·446	$3d^8\ ^3P_1$	$3d^74p\ (23)_2$	70310	2483140	5	95
41·040	$3d^8\ ^1G_4$	$3d^74p\ (23)_3$	82420	2519060	10	95

Mo XVIII (Mn-Sequence) IP=5660500 cm^{-1} (701.7 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
83.428	$3p^6 3d^7\ {}^4F_{9/2}$	$3p^5 3d^8\ (1)_{11/2}$	0	1198630	10	96
81.988	$3p^6 3d^7\ {}^4P_{5/2}$	$3p^5 3d^8\ (2)_{7/2}$	60740	1280420	10	96
81.859	$3p^6 3d^7\ {}^2G_{9/2}$	$3p^5 3d^8\ (2)_{9/2}$	62500	1284110	25	96
80.686	$3p^6 3d^7\ {}^2G_{7/2}$	$3p^5 3d^8\ (4)_{7/2}$	81500	1320790	30	96
80.492	$3p^6 3d^7\ {}^4F_{9/2}$	$3p^5 3d^8\ (1)_{9/2}$	0	1242360	45	96
80.364	$3p^6 3d^7\ {}^2G_{9/2}$	$3p^5 3d^8\ (3)_{7/2}$	62500	1306770	20	96
80.201	$3p^6 3d^7\ {}^4P_{5/2}$	$3p^5 3d^8\ (3)_{5/2}$	60740	1307600	30	96
79.653	$3p^6 3d^7\ {}^2H_{9/2}$	$3p^5 3d^8\ (5)_{7/2}$	107650	1362690	20	96
79.457	$3p^6 3d^7\ {}^4F_{7/2}$	$3p^5 3d^8\ (2)_{7/2}$	21850	1280420	30	96
78.735	$3p^6 3d^7\ {}^2H_{11/2}$	$3p^5 3d^8\ (3)_{9/2}$	84900	1354790	40	96
78.255	$3p^6 3d^7\ {}^2_3D_{5/2}$	$3p^5 3d^8\ (4)_{3/2}$	94000	1372180	10	96
78.053	$3p^6 3d^7\ {}^2G_{7/2}$	$3p^5 3d^8\ (5)_{7/2}$	81500	1362690	25	96

Mo XVIII (Mn-Sequence) IP=5660500 cm^{-1} (701.7 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
77.875	$3p^6 3d^7\ {}^4F_{9/2}$	$3p^5 3d^8\ (2)_{9/2}$	0	1284110	40	96
77.552	$3p^6 3d^7\ {}^2_3D_{5/2}$	$3p^5 3d^8\ (6)_{5/2}$	94000	1383380	10	96
77.415	$3p^6 3d^7\ {}^2G_{9/2}$	$3p^5 3d^8\ (3)_{9/2}$	62500	1354790	45	96
76.992	$3p^6 3d^7\ {}^4F_{7/2}$	$3p^5 3d^8\ (4)_{7/2}$	21850	1320790	10	96
76.870	$3p^6 3d^7\ {}^4F_{7/2}$	$3p^5 3d^8\ (4)_{5/2}$	21850	1322740	45	96
76.812	$3p^6 3d^7\ {}^4P_{5/2}$	$3p^5 3d^8\ (5)_{7/2}$	60740	1362690	15	96
76.647	$3p^6 3d^7\ {}^4F_{5/2}$	$3p^5 3d^8\ (3)_{3/2}$	31440	1336120	25	96
76.529	$3p^6 3d^7\ {}^4F_{9/2}$	$3p^5 3d^8\ (3)_{7/2}$	0	1306770	30	96
75.712	$3p^6 3d^7\ {}^4F_{9/2}$	$3p^5 3d^8\ (4)_{7/2}$	0	1320790	20	96
75.309	$3p^6 3d^7\ {}^4P_{5/2}$	$3p^5 3d^8\ (5)_{3/2}$	60740	1388018	20	96
74.407	$3p^6 3d^7\ {}^2G_{9/2}$	$3p^5 3d^8\ (6)_{7/2}$	62500	1406680	30	96
74.303	$3p^6 3d^7\ {}^4P_{5/2}$	$3p^5 3d^8\ (6)_{7/2}$	60740	1406680	45	96

Mo XVIII (Mn-Sequence) IP=5660500 cm^{-1} (701.7 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
74.280	$3p^6 3d^7\ {}^4F_{5/2}$	$3p^5 3d^8\ (5)_{5/2}$	31440	1377840	25	96
74.020	$3p^6 3d^7\ {}^2F_{7/2}$	$3p^5 3d^8\ (7)_{7/2}$	141650	1492600	15	96
73.944	$3p^6 3d^7\ {}^4F_{3/2}$	$3p^5 3d^8\ (5)_{3/2}$	35936	1388018	10	96
73.812	$3p^6 3d^7\ {}^4F_{9/2}$	$3p^5 3d^8\ (3)_{9/2}$	0	1354790	15	96
73.747	$3p^6 3d^7\ {}^4F_{7/2}$	$3p^5 3d^8\ (5)_{5/2}$	21850	1377840	20	96
73.676	$3p^6 3d^7\ {}^4F_{5/2}$	$3p^5 3d^8\ (5)_{3/2}$	31440	1388018	15	96
73.446	$3p^6 3d^7\ {}^4F_{7/2}$	$3p^5 3d^8\ (6)_{5/2}$	21850	1383380	10	96
73.380	$3p^6 3d^7\ {}^4F_{9/2}$	$3p^5 3d^8\ (5)_{7/2}$	0	1362690	20	96
72.679	$3p^6 3d^7\ {}^2F_{7/2}$	$3p^5 3d^8\ (8)_{7/2}$	141650	1517570	15	96
72.211	$3p^6 3d^7\ {}^4F_{7/2}$	$3p^5 3d^8\ (6)_{7/2}$	21850	1406680	30	96
72.171	$3p^6 3d^7\ {}^2_3D_{5/2}$	$3p^5 3d^8\ (9)_{5/2}$	94000	1479650	25	96
72.089	$3p^6 3d^7\ {}^2H_{9/2}$	$3p^5 3d^8\ (4)_{9/2}$	107650	1494810	35	96

Mo XVIII (Mn-Sequence) IP=5660500 cm^{-1} (701.7 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
71.523	$3p^6 3d^7\ {}^2G_{7/2}$	$3p^5 3d^8\ (9)_{5/2}$	81500	1479650	25	96
71.461	$3p^6 3d^7\ {}^2_1D_{5/2}$	$3p^5 3d^8\ (9)_{7/2}$	210770	1610200	25	96
71.196	$3p^6 3d^7\ {}^2_1D_{5/2}$	$3p^5 3d^8\ (11)_{5/2}$	210770	1615600	20	96
71.089	$3p^6 3d^7\ {}^4F_{9/2}$	$3p^5 3d^8\ (6)_{7/2}$	0	1406680	25	96
70.926	$3p^6 3d^7\ {}^2H_{9/2}$	$3p^5 3d^8\ (8)_{7/2}$	107650	1517570	30	96
70.121	$3p^6 3d^7\ {}^2F_{5/2}$	$3p^5 3d^8\ (9)_{3/2}$	129033	1553198	15	96
69.929	$3p^6 3d^7\ {}^2G_{9/2}$	$3p^5 3d^8\ (7)_{7/2}$	62500	1492600	35	96
69.675	$3p^6 3d^7\ {}^2G_{7/2}$	$3p^5 3d^8\ (8)_{7/2}$	81500	1517570	25	96
69.212	$3p^6 3d^7\ {}^2_1D_{3/2}$	$3p^5 3d^8\ (7)_{1/2}$	199694	1643278	25	96
68.727	$3p^6 3d^7\ {}^2G_{9/2}$	$3p^5 3d^8\ (8)_{7/2}$	62500	1517570	30	96
68.128	$3p^6 3d^7\ {}^2F_{5/2}$	$3p^5 3d^8\ (10)_{3/2}$	129033	1597386	30	96
67.984	$3p^6 3d^7\ {}^4F_{7/2}$	$3p^5 3d^8\ (7)_{7/2}$	21850	1492600	22	96

Mo XVIII (Mn−Sequence) IP=5660500 cm^{-1} (701・7 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
67・845	$3p^6 3d^7\ ^2F_{7/2}$	$3p^5 3d^8\ (11)_{5/2}$	141650	1615600	40	19, 96°
67・648	$3p^6 3d^7\ ^2G_{7/2}$	$3p^5 3d^8\ (10)_{5/2}$	81500	1559730	40	19, 96°
67・141	$3p^6 3d^7\ ^2H_{11/2}$	$3p^5 3d^8\ (5)_{9/2}$	84900	1574310	48	19, 96°
66・536	$3p^6 3d^7\ ^2H_{9/2}$	$3p^5 3d^8\ (9)_{7/2}$	107650	1610200	55	19, 96°
66・146	$3p^6 3d^7\ ^2G_{9/2}$	$3p^5 3d^8\ (5)_{9/2}$	62500	1574310	25	96

Mo XXIII (Ca-Sequence) IP=8341100 cm^{-1} (1034 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
3553·3	$3p^6 3d^2\ ^3F_2$	$3p^6 3d^2\ ^3F_3$	0	28140		89
3319·8	3	4	28140	58260		89

Mo XXIV (K-Sequence) IP=8881500 cm^{-1} (1101 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
2686·5	3d $^2D_{3/2}$	3d $^2D_{5/2}$	0	37220		89
21·854	3d $^2D_{5/2}$	4f $^2F^{o}_{7/2}$	37220	4613040	5	85
21·684	3/2	5/2	0	4611690	5	85

Mo XXV (Ar-Sequence) IP=10527000 cm^{-1} (1305 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
18·500	$3p^6\ ^1S_0$	$3p^5 4d\ ^1P^o_1$	0	5405400	5	85
17·979	$3p^6\ ^1S_0$	$3p^5 4d\ ^3D^o_1$	0	5562000	6	85

Mo XXVI (Cl-Sequence) IP=11035000 cm^{-1} (1368 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
534.9	$3s^2 3p^5\ {}^2P^o_{3/2}$	$3s^2 3p^5\ {}^2P^o_{1/2}$	0	186950		33

Mo XXVII (S-Sequence) IP=11544000 cm^{-1} (1431 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
2348·P	$3s^2 3p^4\ ^3P_1$	$3s^2 3p^4\ ^1D_2$	175500	218050		33° 90
458·6	2	2	0	218050		33
889·2	$3s^2 3p^4\ ^3P_0$	$3s^2 3p^4\ ^3P_1$	63040	175500		33
569·8	2	1	0	175500		33
395·7	$3s^2 3p^4\ ^3P_1$	$3s^2 3p^4\ ^1S_0$	175500	428220		33

Mo XXVIII (P-Sequence) IP=12052000 cm^{-1} (1494 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
2285·4	$3s^2 3p^3\ ^2D^o_{3/2}$	$3s^2 3p^3\ ^2D^o_{5/2}$	156960	200720		33, 34°
643·0	$3s^2 3p^3\ ^2P^o_{1/2}$	$3s^2 3p^3\ ^2P^o_{3/2}$	257930	413450		34
637·1	$3s^2 3p^3\ ^4S^o_{3/2}$	$3s^2 3p^3\ ^2D^o_{3/2}$	0	156960		34
498·2	3/2	5/2	0	200720		34
988·6[P]	$3s^2 3p^3\ ^2D^o_{3/2}$	$3s^2 3p^3\ ^2P^o_{1/2}$	156960	257930		34, 90°
470·0	$3s^2 3p^3\ ^2D^o_{5/2}$	$3s^2 3p^3\ ^2P^o_{3/2}$	200720	413450		34
389·9	3/2	3/2	156960	413450		34
387·7	$3s^2 3p^3\ ^4S^o_{3/2}$	$3s^2 3p^3\ ^2P^o_{1/2}$	0	257930		34
241·8[P]	3/2	3/2	0	413450		34, 90°

Mo XXIX (Si-Sequence) IP=12834000 cm^{-1} (1591 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
2841·1	$3s^2 3p^2\ ^3P_1$	$3s^2 3p^2\ ^3P_2$	161680	196880		33, 89°
618·5	0	1	0	161680		33
530·3P	$3s^2 3p^2\ ^3P_2$	$3s^2 3p^2\ ^1D_2$	196880	385500		33, 90°
446·8P	1	2	161680	385500		33, 90°
325·3	$3s^2 3p^2\ ^3P_1$	$3s^2 3p^2\ ^1S_0$	161680	469080		33

Mo XXX (Al-Sequence) IP=13351000 cm^{-1} (1655 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
490·1	$3s^2 3p\ ^2P^o_{1/2}$	$3s^2 3p\ ^2P^o_{3/2}$	0	204040		33
115·11	$3s^2 3p\ [(\frac{1}{2})^2, \frac{3}{2}]^o_{3/2}$	$3s^2 3d\ [(\frac{1}{2})^2, \frac{3}{2}]_{3/2}$	204040	1072800	3	65
100·58	$3s^2 3p\ [(\frac{1}{2})^2, \frac{3}{2}]^o_{3/2}$	$3s^2 3d\ [(\frac{1}{2})^2, \frac{5}{2}]_{5/2}$	204040	1198300	7	65
92·53	$3s^2 3p\ [(\frac{1}{2})^2, \frac{1}{2}]^o_{1/2}$	$3s^2 3d\ [(\frac{1}{2})^2, \frac{3}{2}]_{3/2}$	0	1080700	4	65
113·50	$3s^2 3p\ [(\frac{1}{2})^2, \frac{3}{2}]^o_{3/2}$	$3s3p^2\ [\frac{1}{2}(\frac{3}{2})^2, (0)]_{1/2}$	204040	1085100	2	65
112·95	$3s^2 3p\ [(\frac{1}{2})^2, \frac{1}{2}]^o_{1/2}$	$3s3p^2\ [\frac{1}{2}\frac{1}{2}(1)\frac{3}{2}]_{1/2}$	0	885350	3	65
105·58	$3s^2 3p\ [(\frac{1}{2})^2, \frac{3}{2}]^o_{3/2}$	$3s3p^2\ [\frac{1}{2}(\frac{3}{2})^2, (2)]_{3/2}$	204040	1151200	4	65
18·056	$3s^2 3d\ ^2D_{5/2}$	$3s^2 4f\ ^2F^o_{7/2}$	1198300	6736600		17
17·964	3/2	5/2	1072800	6639500		17
18·004	$3s^2 3p\ ^2P^o_{3/2}$	$3s^2 4s\ ^2S_{1/2}$	204040	5762000		17
17·355	1/2	1/2	0	5762000		17
16·122	$3s^2 3p\ ^2P^o_{3/2}$	$3s^2 4d\ ^2D_{3/2}$	204040	6399200		17
16·073	3/2	5/2	204040	6425700		17
15·627	1/2	3/2	0	6399200		17

Mo XXXI (Mg-Sequence) IP=14561000 cm^{-1} (1805 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
577·5	$3s3p\ ^3P^o_1$	$3s3p\ ^3P^o_2$	524930	698090		33
190·5	$3s^2\ ^1S_0$	$3s3p\ ^3P^o_1$	0	524930		43
115·991	$3s^2\ ^1S_0$	$3s3p\ ^1P^o_1$	0	862140	9	17, 49, 65, 79°
113·896	$3s3p\ ^1P^o_1$	$3s3d\ ^1D_2$	862140	1740130	10	17, 65, 79°
112·654	$3s3p\ ^3P^o_2$	$3s3d\ ^3D_3$	698090	1585770	10	17, 65, 79°
136·06	$3s3d\ (\frac{1}{2}, \frac{5}{2})_3$	$3p3d\ (\frac{3}{2}, \frac{5}{2})_4$			3	65
133·10	2	3			6	65
124·69	3	2			1	65
124·48	$3s3d\ (\frac{1}{2}, \frac{3}{2})_2$	$3p3d\ (\frac{3}{2}, \frac{3}{2})_3$			1	65
121·70	1	0			3	65
120·86	1	1			2	65
124·19	$3s3p\ (\frac{1}{2}, \frac{3}{2})_1$	$3p^2\ (\frac{3}{2}, \frac{3}{2})_0$			1	65
122·36	2	2			2	65
121·30	$3p^2\ (\frac{1}{2}, \frac{3}{2})_2$	$3p3d\ (\frac{1}{2}, \frac{5}{2})_3$			3	65
118·96	2	2			1	65
118·48	1	2			2	65

Mo XXXI (Mg-Sequence) IP=14561000 cm^{-1} (1805 eV)

λ (A)	Configurations		Energy levels (cm^{-1})	Int	References
121·07	$3s3d\ (\frac{1}{2},\frac{3}{2})_2$	$3p3d\ (\frac{3}{2},\frac{5}{2})_2$		3	65
118·74	$3p^2\ (\frac{3}{2},\frac{3}{2})_2$	$3p3d\ (\frac{3}{2},\frac{3}{2})_1$		1	65
117·90	2	3		3	65
117·66	$3s3p\ (\frac{1}{2},\frac{1}{2})_0$	$3p^2\ (\frac{1}{2},\frac{3}{2})_1$		1	65
116·91	$3p^2\ (\frac{3}{2},\frac{3}{2})_0$	$3p3d\ (\frac{3}{2},\frac{5}{2})_1$		2	65
115·53	2	2		2	65
103·33	2	3		1	65
115·27	$3s3p\ (\frac{1}{2},\frac{3}{2})_2$	$3s3d\ (\frac{1}{2},\frac{3}{2})_2$		2	65
101·97	$3p^2\ (\frac{1}{2},\frac{3}{2})_2$	$3p3d\ (\frac{3}{2},\frac{3}{2})_2$		3	65
101·63	1	2		4	65
97·93	1	1		4	65
96·82	2	3		3	65
100·39	$3s3p\ (\frac{1}{2},\frac{1}{2})_1$	$3p^2\ (\frac{3}{2},\frac{3}{2})_2$		3	65
98·20	$3s3p\ (\frac{1}{2},\frac{1}{2})_1$	$3s3d\ (\frac{1}{2},\frac{3}{2})_1$		3	65
96·52	1	2		4	65
94·95	0	1		3	65

Mo XXXI (Mg−Sequence) IP=14561000 cm^{-1} (1805 eV)

λ (A)	Configurations		Energy levels (cm^{-1})	Int	References
94.71	$3p^2$ $(\frac{1}{2}, \frac{1}{2})_0$	$3p3d$ $(\frac{1}{2}, \frac{3}{2})_1$		4	65
17.871	$3s3d$ $^1D_2$	$3s4f$ $^1F^o_3$			17
17.380	$3s3d$ $(\frac{1}{2}, \frac{3}{2})_2$	$3s4f$ $(\frac{1}{2}, \frac{7}{2})_3$		2	65
17.578	$3s3d$ $^3D_3$	$3s4f$ $^3F^o_3$			17
17.556	3	4			17
17.500	2	3			17
17.445	1	2			17
16.046	$3s3d$ $(\frac{1}{2}, \frac{3}{2})_1$	$3s4d$ $(\frac{1}{2}, \frac{5}{2})_2$		4	65
16.003	$3p^2$ $(\frac{3}{2}, \frac{3}{2})_0$	$3p4d$ $(\frac{3}{2}, \frac{5}{2})_1$		2	65
15.193	$3s3p$ $(\frac{1}{2}, \frac{1}{2})_0$	$3s4d$ $(\frac{1}{2}, \frac{3}{2})_1$		3	65
14.922	$3s^2$ $(\frac{1}{2}, \frac{1}{2})_0$	$3s4p$ $(\frac{1}{2}, \frac{1}{2})_1$		3	17, 65°
14.852	$3p^2$ $(\frac{1}{2}, \frac{1}{2})_0$	$3p4d$ $(\frac{3}{2}, \frac{5}{2})_1$		3	65
14.743	$3s^2$ $(\frac{1}{2}, \frac{1}{2})_0$	$3s4p$ $(\frac{1}{2}, \frac{3}{2})_1$		5	17, 65°, 85
11.482	$3s3p$ $(\frac{1}{2}, \frac{3}{2})_1$	$3s5d$ $(\frac{1}{2}, \frac{5}{2})_2$		1	65

Mo XXXII (Na-Sequence) IP=15077000 cm^{-1} (1869 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
176·67	3s $^2S_{1/2}$	3p $^2P^o_{1/2}$	0	566030	4	17, 49, 65°
127·81	1/2	3/2	0	782410	10	17, 49, 65°
126·94	3p $^2P^o_{3/2}$	3d $^2D_{5/2}$	782410	1570200	9	17, 65°
104·26	1/2	3/2	566030	1525200	9	17, 65°
18·72	3d $^2D_{3/2}$	4p $^2P^o_{1/2}$	1525200	6868100	1	17
18·591	5/2	3/2	1570200	6956000	3	17, 65°
18·431	3/2	3/2	1525200	6956000	5	17
17·165	3d $^2D_{5/2}$	4f $^2F^o_{5/2}$	1570200	7391300	3	17
17·148	5/2	7/2	1570200	7401700	8	17, 65°, 85
17·047	3/2	5/2	1525200	7391300	7	17, 65°
17·099	3p $^2P^o_{3/2}$	4s $^2S_{1/2}$	782410	6630700	2	17, 65°, 85
16·496	1/2	1/2	566030	6630700	2	17, 65°
15·509	3p $^2P^o_{3/2}$	4d $^2D_{3/2}$	782410	7230300	2	17, 65°
15·460	3/2	5/2	782410	7250700	10	17, 65°
15·002	1/2	3/2	566030	7230300	6	17, 65°
14·560	3s $^2S_{1/2}$	4p $^2P^o_{1/2}$	0	6868100	6	17, 65°
14·376	1/2	3/2	0	6956000	10	17, 65°, 85
10·323	1/2	1/2	0		2	65

Mo XXXII (Na-Sequence) IP=15077000 cm^{-1} (1869 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
12·284	3d $^2D_{5/2}$	5p $^2P^o_{3/2}$	1570200	9735200	1	17
11·931	3d $^2D_{5/2}$	5f $^2F^o_{7/2}$	1570200	9951700	6	17, 65°
11·875	3/2	5/2	1525200	9946200	5	17, 65°
10·994	3p $^2P^o_{3/2}$	5d $^2D_{5/2}$	782410	9878300	7	17, 65°
10·749	1/2	3/2	566030	9869200	4	17, 65°
10·272	3s $^2S_{1/2}$	5p $^2P^o_{3/2}$	0	9735200	3	65
10·241	3d $^2D_{5/2}$	6f $^2F^o_{7/2}$	1570200	11335000	3	65
10·197	3/2	5/2	1525200	11332000	2	65

Mo XXXIII (Ne-Sequence) IP=32187000 cm^{-1} (3990 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
5.204	$2p^6\ ^1S_0$	$[2p^5(^2P_{3/2}), 3s]_1$	0	19216000	9	2, 16, 47°, 85
4.980	$2p^6\ ^1S_0$	$[2p^5(^2P_{1/2}), 3s]_1$	0	20080000	6	2, 16, 47°, 85
4.8516	$2p^6\ ^1S_0$	$[2p^5(^2P_{3/2}), 3d(^2D_{3/2})]_1$	0	20612000	7	3°, 16, 47△
4.8044	$2p^6\ ^1S_0$	$[2p^5(^2P_{3/2}), 3d(^2D_{5/2})]_1$	0	20814000	10	2, 3°, 16, 47△, 85
4.6312	$2p^6\ ^1S_0$	$[2p^5(^2P_{1/2}), 3d(^2D_{3/2})]_1$	0	21593000	8	2, 3°, 16, 47△
4.4647	$2s^22p^6\ ^1S_0$	$[2s2p^63p(^2P_{1/2})]_1$	0	22398000	5	2, 3°, 16, 47△
4.4181	$2s^22p^6\ ^1S_0$	$[2s2p^63p(^2P_{3/2})]_1$	0	22634000	4	2, 3°, 16, 47△
3.85	$2p^6\ ^1S_0$	$[2p^5(^2P_{3/2}), 4s]_1$	0	25970000	2	16, 18°
3.76	$2p^6\ ^1S_0$	$[2p^5(^2P_{3/2}), 4d(^2D_{5/2})]_1$	0	26600000	12	16, 18°
3.74	$2p^6\ ^1S_0$	$[2p^5(^2P_{1/2}), 4s]_1$	0	26740000	1.2	16, 18°
3.64	$2p^6\ ^1S_0$	$[2p^5(^2P_{1/2}), 4d(^2D_{3/2})]_1$	0	27470000	7	16, 18°
3.42	$2p^6\ ^1S_0$	$[2p^5(^2P_{3/2}), 5d(^2D_{5/2})]_1$	0	29240000	3.5	18

Mo XXXIII (Ne-Sequence) IP=32187000 cm^{-1} (3990 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
3·32	$2p^6\ ^1S_0$	$[2p^5(^2P_{1/2}), 5d(^2D_{3/2})]_1$	0	30120000	2·3	18
3·26	$2p^6\ ^1S_0$	$[2p^5(^2P_{3/2}), 6d(^2D_{5/2})]_1$	0	30670000	1·8	18
3·18	$2p^6\ ^1S_0$	$[2p^5(^2P_{1/2}), 6d(^2D_{3/2})]_1$	0	31450000	1·1	18
3·18	$2p^6\ ^1S_0$	$[2p^5(^2P_{3/2}), 7d(^2D_{5/2})]_1$	0	31450000	1·1	18
3·09	$2p^6\ ^1S_0$	$[2p^5(^2P_{1/2}), 7d(^2D_{3/2})]_1$	0	32360000	0·8	18

Mo XXXIV (F-Sequence) IP=33808000 cm^{-1} (4191 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
112.84^{P}	$2p^5\ ^2P^o_{3/2}$	$2p^5\ ^2P^o_{1/2}$	0	880000		35, 77°
58.^{P}	$2s^22p^5\ ^2P^o_{1/2}$	$2s2p^6\ ^2S_{1/2}$	880000	2600000		35
38.^{P}	3/2	1/2	0	2600000		35
4.536	$2p^5\ ^2P^o_{3/2}$	$2p^4\ (^3P)\ 3d\ ^2F_{5/2}$	0	22046000		14
4.506	$2p^5\ ^2P^o_{3/2}$	$4p^4\ (^1D)\ 3d\ ^2F_{5/2}$	0	22193000		14
4.550	$2p^5\ ^2P^o_{3/2}$	$2p^4\ (^3P)\ 3d\ ^2D_{3/2}$	0	21978000		14
4.521	3/2	5/2	0	22119000		14
4.503	$2p^5\ ^2P^o_{3/2}$	$2p^4\ (^1D)\ 3d\ ^2D_{5/2}$	0	22207000		14
4.480	3/2	3/2	0	22321000		14
4.493	$2p^5\ ^2P^o_{1/2}$	$2p^4\ (^1S)\ 3d\ ^2D_{3/2}$	880000	23100000		14
4.512	$2p^5\ ^2P^o_{3/2}$	$2p^4\ (^1D)\ 3d\ ^2S_{1/2}$	0	22163000		14
4.506	$2p^5\ ^2P^o_{3/2}$	$2p^4\ (^1D)\ 3d\ ^2P_{3/2}$	0	22193000		14
4.472	3/2	1/2	0	22361000		14

Mo XL (Li-Sequence) IP=45053000 cm^{-1} (5585 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
0.6912	$1s^2 2p\ ^2P^o_{1/2}$	$1s2p^2\ ^4P_{3/2}$				10
0.6859	1/2	5/2				10
0.6893	$1s^2 2p\ ^2P^o_{1/2}$	$1s2p^2\ ^2P_{3/2}$				10
0.6893	$1s^2 2s\ ^2S_{1/2}$	$1s2s\ (^3S)\ 2p\ ^2P^o_{3/2}$	0	145075000		10
0.6893	$1s^2 2p\ ^2P^o_{1/2}$	$1s2p^2\ ^2D_{3/2}$				10
0.6885	$1s^2 2p\ ^2P^o_{3/2}$	$1s2p^2\ ^2S_{1/2}$				10
0.6885	$1s^2 2s\ ^2S_{1/2}$	$1s2s\ (^1S)\ 2p\ ^2P^o_{1/2}$	0	145243000		10
0.6859	$1s^2 2s\ ^2S_{1/2}$	$1s2s2p\ ^4P^o_{5/2}$	0	145793000		10

Mo XLI (He-Sequence) IP=18650000 cm^{-1} (2312 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
0·6923	$1s^2\ ^1S_0$	$1s2p\ ^3P^\circ_1$	0	144450000		10°, 92
0·6878	0	2	0	145390000		10°, 92
0·6870	$1s^2\ ^1S_0$	$1s2p\ ^1P^\circ_1$	0	145560000		10°, 92
0·672	$1s2p\ ^1P^\circ_1$	$2p^2\ ^1S_0$	145560000	294400000		92
0·672	$1s2p\ ^1P^\circ_1$	$2p^2\ ^1D_2$	145560000	294400000		92
0·672	$1s2s\ ^3S_1$	$2s2p\ ^3P^\circ_2$				92

Mo XLII (H-Sequence) IP=19271600 cm^{-1} (2389 eV)

λ (A)	Configurations		Energy levels (cm^{-1})		Int	References
0·6685	1s $^2S_{1/2}$	2p $^2P^o_{3/2}$	0	149600000		92
0·5701	1s $^2S_{1/2}$	3p $^2P^o_{3/2}$	0	175200000		92
0·5701	1/2	1/2	0	175200000		92

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