

# Chemistry–A European Journal

Supporting Information

## Synthesis of Unprecedented 4d/4f-Polypnictogens

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## General Methods:

All manipulations of water- and air-sensitive compounds were performed with exclusion of moisture and oxygen in flame-dried Schlenk-type glassware either on a dual manifold Schlenk line, interfaced to a high vacuum ( $10^{-3}$  mbar) line or in an argon-filled MBraun glove box.

Tetrahydrofuran was distilled under nitrogen from potassium benzophenoneketyl before storage in vacuo over  $\text{LiAlH}_4$ . Hydrocarbon solvents were dried by using an MBraun solvent purification system (SPS 800), degassed and stored *in vacuo* over  $\text{LiAlH}_4$ . Elemental analysis were carried out with an Elementar Vario Micro cube. IR spectra were obtained on a Bruker Tensor 37 spectrometer equipped with a room temperature DLaTGS detector and a diamond ATR (attenuated total reflection) unit.

$[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu, \eta^{2:2}\text{-As}_2)]$  and  $[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu, \eta^{2:2}\text{-Sb}_2)]$  were synthesized at the University of Regensburg using following analytical equipment:

The IR spectra were recorded as solids using a ThermoFisher Nicolet iS5 FT-IR spectrometer with an iD7 ATR module and an ITX Germanium or Diamond crystal. The mass spectra and elemental analyses were performed by the analytical laboratories of the University of Regensburg. NMR spectra were recorded in  $\text{C}_6\text{D}_6$  on a Bruker Avance 300 MHz NMR spectrometer ( $^1\text{H}$ : 300.132 MHz,  $^{13}\text{C}$ : 75.468 MHz) or a Bruker Avance 400 MHz NMR spectrometer ( $^1\text{H}$ : 400.130 MHz,  $^{13}\text{C}$ : 100.613 MHz) with external references of  $\text{SiMe}_4$  ( $^1\text{H}$ ,  $^{13}\text{C}$ ).

$[(\text{Cp}^*)_2\text{Sm}(\text{thf})_2]$  and  $[(\text{Cp}^{\text{Me}4\text{nPr}})_2\text{Sm}]$  were prepared following literature procedures.<sup>1,2</sup>  $[(\text{Cp}^*)_2\text{Sm}(\text{thf})_2]$  was sublimed to generate solvent free  $[(\text{Cp}^*)_2\text{Sm}]$ .

**Synthesis of  $[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu, \eta^{2:2}\text{-As}_2)]$ :**

250 ml of a saturated solution of yellow arsenic in boiling xylene were transferred onto  $[\text{Cp}^t(\text{CO})_2\text{Mo}]_2$  (0.81 g, 1.48 mmol) and refluxed for 4 h yielding an orange brown solution. The xylene was condensed off, the residue dissolved in 15 mL  $\text{CH}_2\text{Cl}_2$ , combined with 10 g silica gel and dried till a flowing dark brown powder was formed. Chromatographic work-up (4 x 15 cm; silica gel) with pure *n*-hexane affords a yellow fraction of  $[\text{Cp}^t(\text{CO})_2\text{Mo}(\eta^3\text{-As}_3)]$ . After elution with a mixture of *n*-hexane/toluene of 5:1 an orange-red fraction of  $[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu, \eta^{2:2}\text{-As}_2)]$  and a small unidentified green fraction (maybe  $[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_3\text{As}]$ ) were obtained.

**$[\text{Cp}^t(\text{CO})_2\text{Mo}(\eta^3\text{-As}_3)]$ :** Yield: 195 mg (0.39 mmol, 13 % referred to one  $[\text{Cp}^t(\text{CO})_2\text{Mo}]$  fragment)

Anal. calcd. (%) for  $[\text{C}_{11}\text{H}_{13}\text{As}_3\text{MoO}_2]$ : C: 26.53, H: 2.63; found (%): C: 26.68, H: 2.53.

NMR:  $^1\text{H}$  NMR (400 MHz,  $\text{C}_6\text{D}_6$ , 300 K)  $\delta/\text{ppm}$  = 0.93 (s, *t*Bu, 9H), 4.36 (t, 2.4 Hz, Cp, 2H), 4.39 (t, 2.4 Hz, Cp, 2H);  $^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{C}_6\text{D}_6$ , 300 K)  $\delta/\text{ppm}$  = 31.1 (s, *t*Bu), 31.6 (s, Me), 81.6 (s, Cp (C-H)), 81.8 (s, Cp (C-H)), 120.3 (s, Cp (quart.)), 223.4 (s, CO)

FD-MS ( $\text{CH}_2\text{Cl}_2$ ): Cation  $m/z$  (%): 499.81 (100)

**$[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu, \eta^{2:2}\text{-As}_2)]$ :** Yield: 55 mg (0.08 mmol, 5.4 % referred  $[\text{Cp}^t(\text{CO})_2\text{Mo}]_2$ )

IR (ATR):  $\tilde{\nu}/\text{cm}^{-1}$  = 2098 (w), 2955 (m), 2864 (w), 1965 (vs), 1934 (vs), 1893 (vs), 1872 (vs), 1478 (m), 1461 (m), 1444 (w), 1398 (w), 1360 (m), 1269 (m), 1197 (w), 1148 (m), 1060 (w), 1040 (w), 1019 (w), 921 (w), 906 (w), 880 (w), 842 (m), 830 (m), 815 (s), 801 (s), 673 (w)

Anal. calcd. (%) for  $[\text{C}_{22}\text{H}_{26}\text{As}_2\text{Mo}_2\text{O}_4]$ : C: 37.96, H: 3.76; found (%): C: 37.42, H: 3.50.

NMR:  $^1\text{H}$  NMR (300 MHz,  $\text{C}_6\text{D}_6$ , 300 K)  $\delta/\text{ppm}$  = 1.06 (s, *t*Bu, 18H), 4.61 (t, 2.4 Hz, Cp, 4H), 4.75 (t, 2.4 Hz, Cp, 4H);  $^{13}\text{C}\{^1\text{H}\}$  NMR (75 MHz,  $\text{C}_6\text{D}_6$ , 300 K)  $\delta/\text{ppm}$  = 31.3 (s, *t*Bu), 31.8 (s, Me), 83.0 (s, Cp (C-H)), 84.8 (s, Cp (C-H)), 119.0 (s, Cp (quart.)), 228.5 (s, CO)

FD-MS ( $\text{CH}_2\text{Cl}_2$ ): Cation  $m/z$  (%): 695.86 (100)  $[\text{M}^+]$ ; 789.72 (55) [not assignable]

### Synthesis of $[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu, \eta^{2:2}\text{-Sb}_2)]$ :

Yellow  $(t\text{BuSb})_4$  (1.25 g, 1.75 mmol) and dark brown  $[\text{Cp}^t(\text{CO})_2\text{Mo}]_2$  (1.30 g, 2.38 mmol) were weighted into a 250 mL round flask and dissolved in 100 mL toluene. The dark orange brown solution was stirred under reflux for 6 h. Afterwards the solvent was removed, the residue dissolved in 15 mL  $\text{CH}_2\text{Cl}_2$ , combined with 10 g silica gel, dried to a flowing dark brown powder under reduced pressure, and placed on a chromatography column (4 x 20 cm; silica gel). Elution with *n*-hexane yields a light yellow fraction of unreacted  $(t\text{BuSb})_4$ . Thereafter, a dark red fraction of  $[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu, \eta^{2:2}\text{-Sb}_2)]$  was isolated by elution with a mixture of *n*-hexane and toluene (3:1). The solvent was removed and recrystallisation in 5 mL  $\text{CH}_2\text{Cl}_2$  at  $-30\text{ }^\circ\text{C}$  for 5 days afforded dark red crystals.

Yield: 106 mg (0.14 mmol, 6 %)

IR (ATR):  $\tilde{\nu}/\text{cm}^{-1} = 2983$  (w), 2965 (w), 2943 (w), 2902 (w), 1918 (vs), 1890 (vs), 1866 (vs), 1842 (w), 1476 (w), 1462 (w), 1443 (w), 1400 (w), 1362 (w), 1269 (w), 1147 (w), 1058 (w), 1041 (w), 1020 (w), 904 (w), 883 (w), 842 (w), 831 (w), 818 (w), 804 (w), 682 (w)

Anal. calcd. (%) for  $[\{\text{C}_9\text{H}_{13}(\text{CO})_2\text{Mo}\}_2\text{Sb}_2]$ : C: 33.45, H: 3.32; found (%): C: 33.61, H: 3.34.

NMR:  $^1\text{H}$  NMR (400 MHz,  $\text{C}_6\text{D}_6$ , 300 K)  $\delta/\text{ppm} = 1.08$  (s, *t*Bu, 9H), 4.43 (t, 2.4 Hz, Cp, 2H), 4.75 (t, 2.4 Hz, Cp, 2H);  $^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{C}_6\text{D}_6$ , 300 K)  $\delta/\text{ppm} = 31.4$  (s, *t*Bu), 31.9 (s, Me), 81.1 (s, Cp (C-H)), 81.4 (s, Cp (C-H)), 116.8 (s, Cp (quart.)), 228.7 (s, CO)

LIFDI-MS (toluene): Cation  $m/z$  (%): 789.78 (100)

### Synthesis of $[(\text{Cp}^*{}_2\text{Sm})_2\text{As}_2(\text{Cp}^t\text{Mo}(\text{CO})_2)_2]$ (**1**):

*n*-Hexane (10 mL) was condensed onto a mixture of  $[\text{Cp}^*{}_2\text{Sm}]$  (52.0 mg, 0.12 mmol, 2.00 equiv.) and  $[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu, \eta^{2:2}\text{-As}_2)]$  (45.0 mg, 0.062 mmol, 1.00 equiv.) at  $-78\text{ }^\circ\text{C}$  in a double ampule. The resulting reaction mixture was heated to  $65\text{ }^\circ\text{C}$  in an oven and after 3 days hot decanted. Crystals of **1** were obtained by slow evaporation of the solvent at ambient temperature to the other section of the ampule. Yield: 33.0 mg (34 %) of crystals.

IR (ATR):  $\tilde{\nu}/\text{cm}^{-1} = 2958$  (s), 2929 (s), 2904 (s), 2853 (s), 1968 (m), 1944 (s), 1896 (vs), 1859 (s), 1620 (m), 1575 (m), 1482 (vw), 1463 (vw), 1445 (w), 1437 (w), 1378 (vw), 1362 (w), 1271 (vw), 1149 (vw), 1082 (vw), 1061 (vw), 1019 (vw), 841 (vw), 814 (vw), 792 (w), 677 (vw), 589 (vw), 558 (vw), 533 (vw), 485 (vw), 459 (vw).

NMR:  $^1\text{H}$  NMR (400 MHz,  $\text{C}_6\text{D}_6$ , 300 K)  $\delta/\text{ppm}$  = -1.11 (s, *t*Bu, 9H), 1.08 (s, Cp-*Me*, 60H), 3.81 (t, 2.2 Hz, Cp, 2H), 5.35 (t, 2.2 Hz, Cp, 2H);  $^{13}\text{C}\{^1\text{H}\}$  NMR (101 MHz,  $\text{C}_6\text{D}_6$ , 300 K)  $\delta/\text{ppm}$  = 20.6 (s, Cp-*Me*), 30.0 (s, *CMe*<sub>3</sub>), 30.1 (s, *CMe*<sub>3</sub>), 88.5 (s, Cp (C-H)), 96.0 (s, Cp (C-H)), 118.7 (s, Cp\*), 119.7 (s, Cp (quart.)), 274.8 (s, CO)

Anal. calcd. (%) for [ $\text{C}_{62}\text{H}_{86}\text{Mo}_2\text{O}_4\text{As}_2\text{Sm}_2$ ] (1537.81 g/mol<sup>-1</sup>): C 48.42, H 5.64; found C 48.95, H 5.68.

### Synthesis of $[(\text{Cp}^{\text{Me4nPr}})_2\text{Sm}]_2\text{As}_2(\text{Cp}^t\text{Mo}(\text{CO})_2)_2$ and $[(\text{Cp}^{\text{Me4nPr}})_2\text{Sm}]_2\text{As}_4(\text{Cp}^t\text{Mo}(\text{CO})_2)_2$ (**2,3**):

*n*-Heptane (10 mL) was added onto a mixture of [ $\text{Cp}^{\text{Me4nPr}}_2\text{Sm}$ ] (65.6 mg, 0.137 mmol, 2.00 equiv.) and  $[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu, \eta^{2:2}\text{-As}_2)]$  (50.0 mg, 0.069 mmol, 1.00 equiv.). The resulting reaction mixture was heated to 65 °C and stirred for 72 h. After cooling to rt the mixture was filtered. A crystal mixture of **2** and **3** was obtained by slow evaporation of the solvent at ambient temperature. Yield: 60.0 mg of mixed crystals of **2** and **3**.

Separation and further analytics of the two products (**2, 3**) was not feasible due to similar solubility behavior.

### Synthesis of $[(\text{Cp}^*_2\text{Sm})_2\text{Sb}_4(\text{Cp}^t\text{Mo}(\text{CO})_2)_2]$ (**4**):

#### Method A:

*n*-Hexane (10 mL) was condensed onto a mixture of [ $\text{Cp}^*_2\text{Sm}$ ] (32.0 mg, 0.076 mmol, 2.00 equiv.) and  $[\{\text{Cp}^t\text{Mo}(\text{CO})_2\}_2(\mu, \eta^{2:2}\text{-Sb}_2)]$  (30.0 mg, 0.038 mmol, 1.00 equiv.) at -78 °C in a double ampule. The resulting reaction mixture was heated to 60 °C in an oven and hot decanted after 3 days. After cooling to room temperature crystals of **4** were obtained. Yield: 48.0 mg (67%) of crystals.

#### Method B:

Toluene (10 mL) was condensed onto a mixture of [ $\text{Cp}^*_2\text{Sm}$ ] (42.0 mg, 0.10 mmol, 2.00 equiv.) and  $[\{\text{Cp}^t\text{Mo}(\text{CO})_2\}_2(\mu, \eta^{2:2}\text{-Sb}_2)]$  (40.0 mg, 0.05 mmol, 1.00 equiv.) at -78 °C in a double ampule. The resulting reaction mixture was heated to 60 °C in an oven and after 3 days hot decanted. Crystals of **4** were obtained by slow evaporation of the solvent at ambient temperature to the other section of the ampule. Yield: 52.0 mg (52%) of crystals.

IR (ATR):  $\tilde{\nu}/\text{cm}^{-1}$  = 3243 (vw), 2955 (s), 2900 (s), 2855 (s), 2725 (w), 1898 (vs), 1889 (vs), 1858 (m), 1701 (vw), 1633 (s), 1480 (m), 1445 (m), 1435 (m), 1378 (m), 1358 (m), 1272 (m), 1148 (w), 1060 (vw), 1038 (vw), 1019 (w), 903 (w), 858 (w), 811 (w), 792 (m), 612 (w), 577 (w), 556 (m), 477 (w), 459 (w).

Anal. calcd. (%) for  $[\text{C}_{62}\text{H}_{86}\text{Mo}_2\text{O}_4\text{Sb}_4\text{Sm}_2]$  (1874.88 g/mol<sup>-1</sup>): C 39.72, H 4.62; found C 39.70, H 4.87.

Due to paramagnetism and decomposition upon redissolving single crystals of **4**, no suitable NMR spectra were obtainable.

#### **Synthesis of $[[(\text{Cp}^{\text{Me}4\text{nPr}})_2\text{Sm}]_2\text{Sb}_4(\text{Cp}^{\text{t}}\text{Mo}(\text{CO})_2)_2]$ (**5**):**

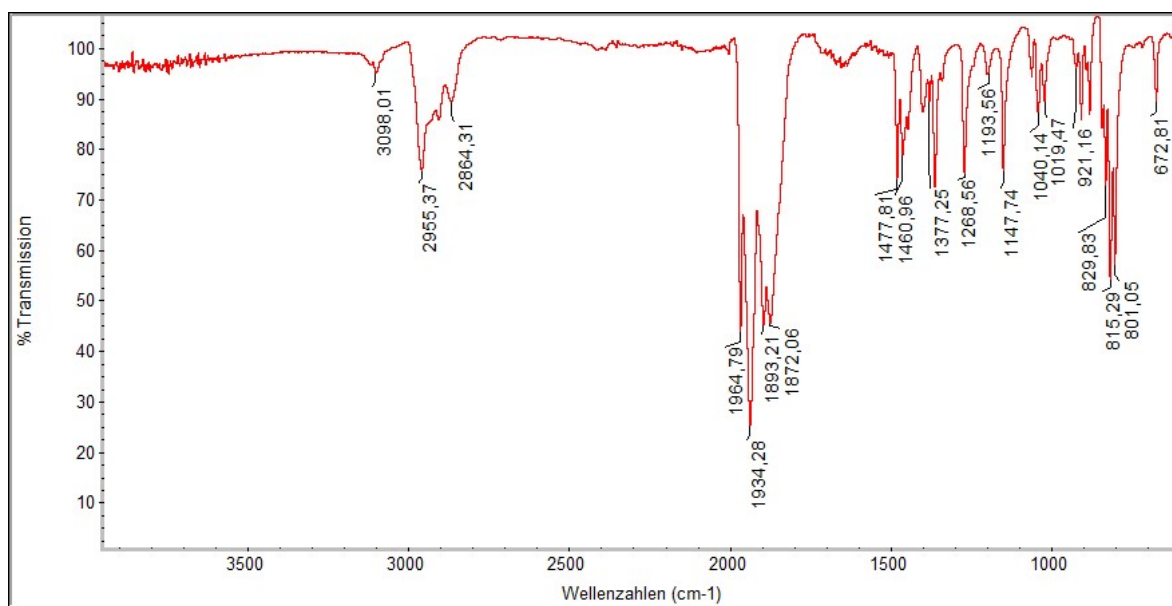
Toluene (10 mL) was added onto a mixture of  $[\text{Cp}^{\text{Me}4\text{nPr}}_2\text{Sm}]$  (60.4 mg, 0.127 mmol, 2.00 equiv.) and  $[\{\text{Cp}^{\text{t}}\text{Mo}(\text{CO})_2\}_2(\mu,\eta^{2:2}\text{-Sb}_2)]$  (50.0 mg, 0.063 mmol, 1.00 equiv.). The resulting reaction mixture was heated to 75 °C and stirred for 72 h. After cooling to rt the solvent was removed under reduced pressure and the solid subsequently recrystallized from hot *n*-heptane. Yield: 20 mg (31 %) of crystals.

IR (ATR):  $\tilde{\nu}/\text{cm}^{-1}$  = 2955 (s), 2928 (s), 2899 (s), 2868 (s), 2851 (s), 2724 (w), 1896 (vs), 1857 (m), 1630 (s), 1481 (m), 1464 (m), 1434 (m), 1380 (m), 1360 (m), 1268 (w), 1147 (w), 1089 (w), 1038 (w), 1019 (w), 907 (w), 886 (w), 808 (w), 785 (m), 614 (w), 575 (w), 555 (m), 478 (w), 455 (m).

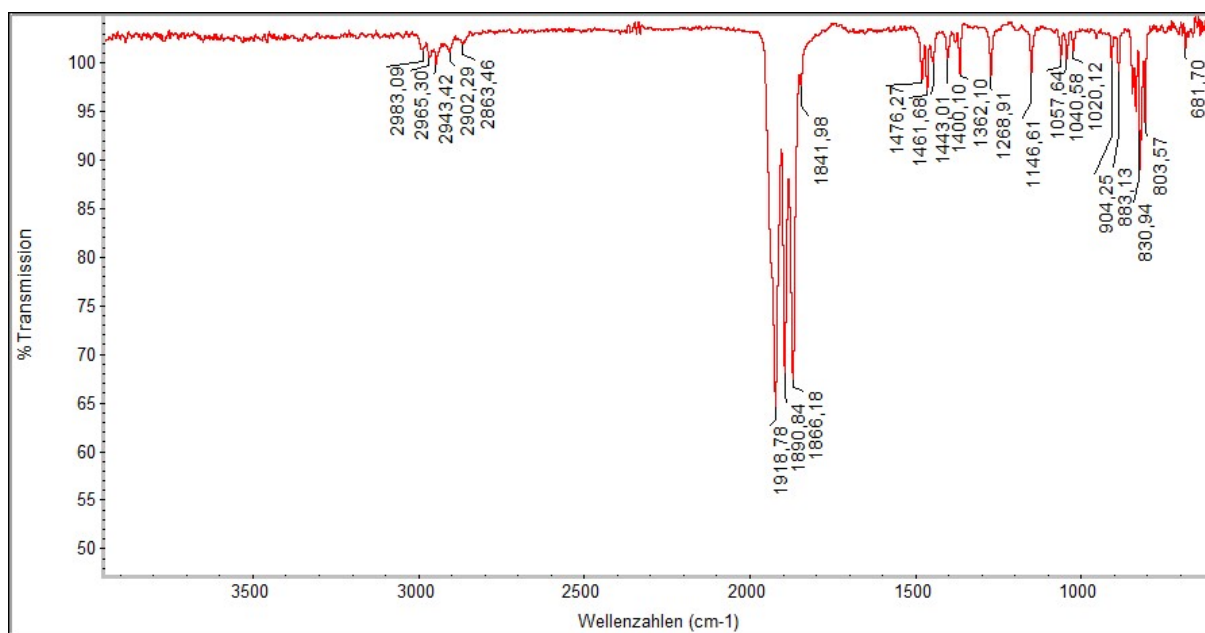
Anal. calcd. (%) for  $[\text{C}_{70}\text{H}_{102}\text{Mo}_2\text{O}_4\text{Sb}_4\text{Sm}_2]$  (1987.20 g/mol<sup>-1</sup>): C 42.31, H 5.17; found C 41.73, H 5.05.

Due to paramagnetism and decomposition upon redissolving single crystals of **5**, no suitable NMR spectra were obtainable.

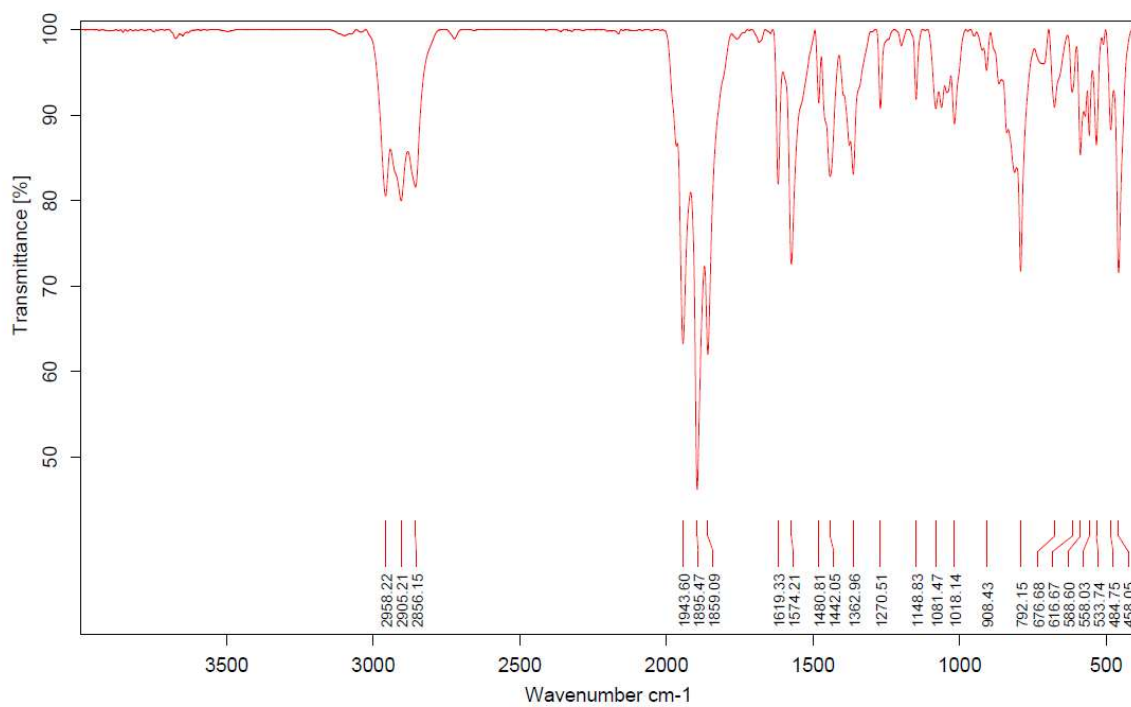
## IR Spectra:



**Fig. S1.** IR Spectrum of  $[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu, \eta^{2:2}\text{-As}_2)]$ .

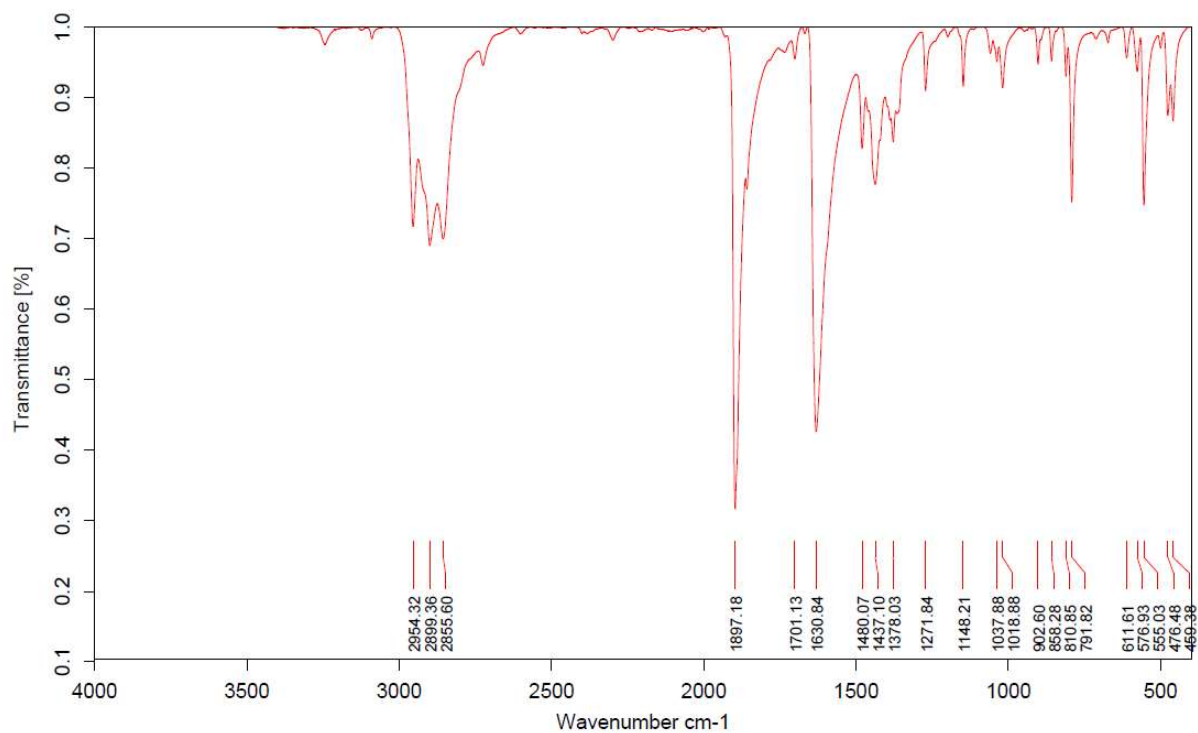


**Fig. S2.** IR Spectrum of  $[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu, \eta^{2:2}\text{-Sb}_2)]$ .

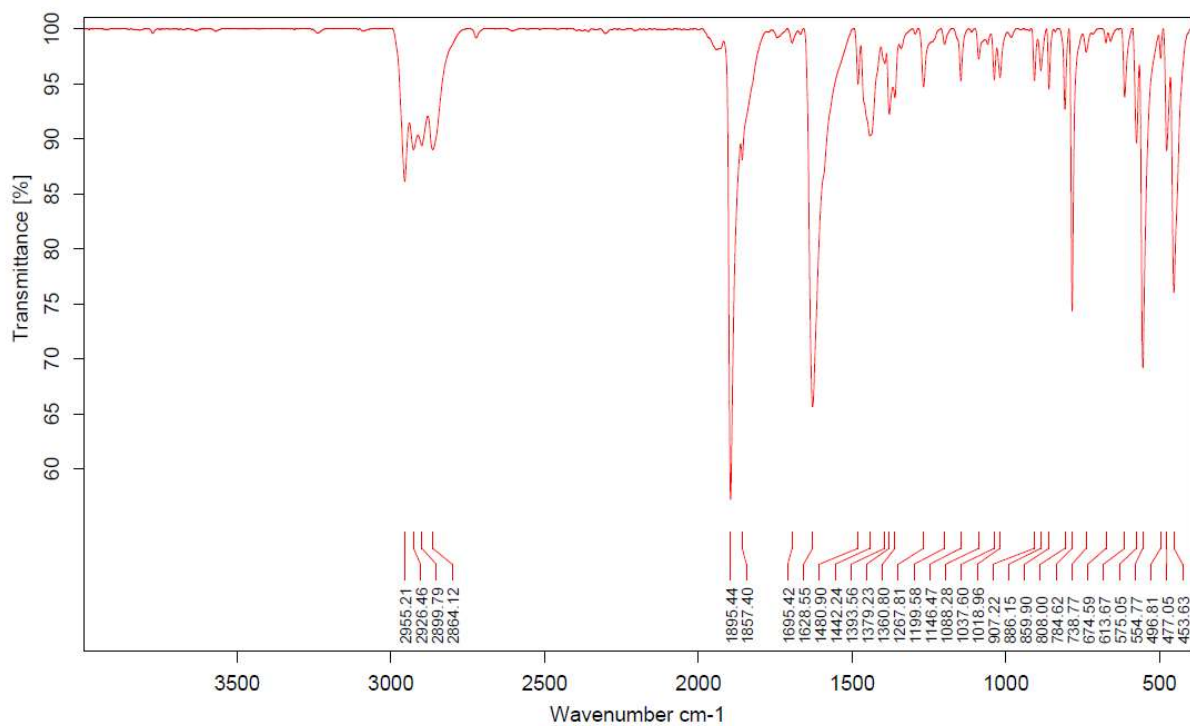


**Fig. S3.** IR Spectrum of **1** ( $[(Cp^*_2Sm)_2As_2(Cp^tMo(CO)_2)_2]$ ).



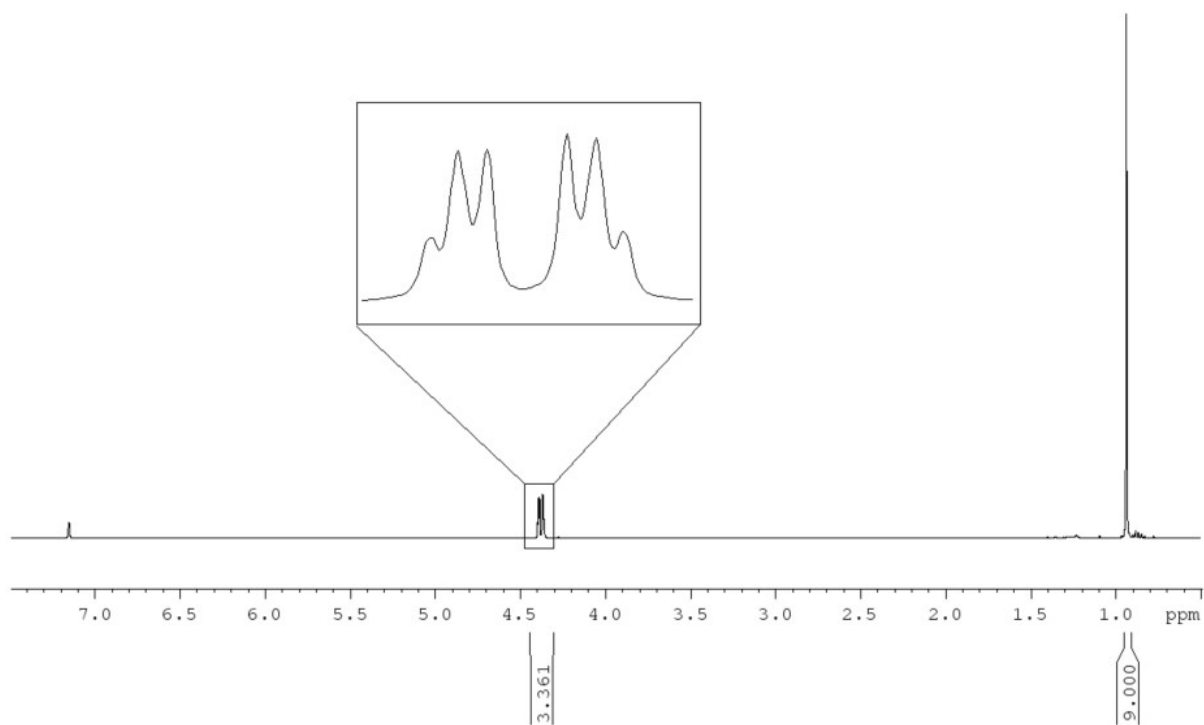


**Fig. S4.** IR Spectrum of **4** ( $[(Cp^*_2Sm)_2Sb_4(Cp^tMo(CO)_2)_2]$ ).

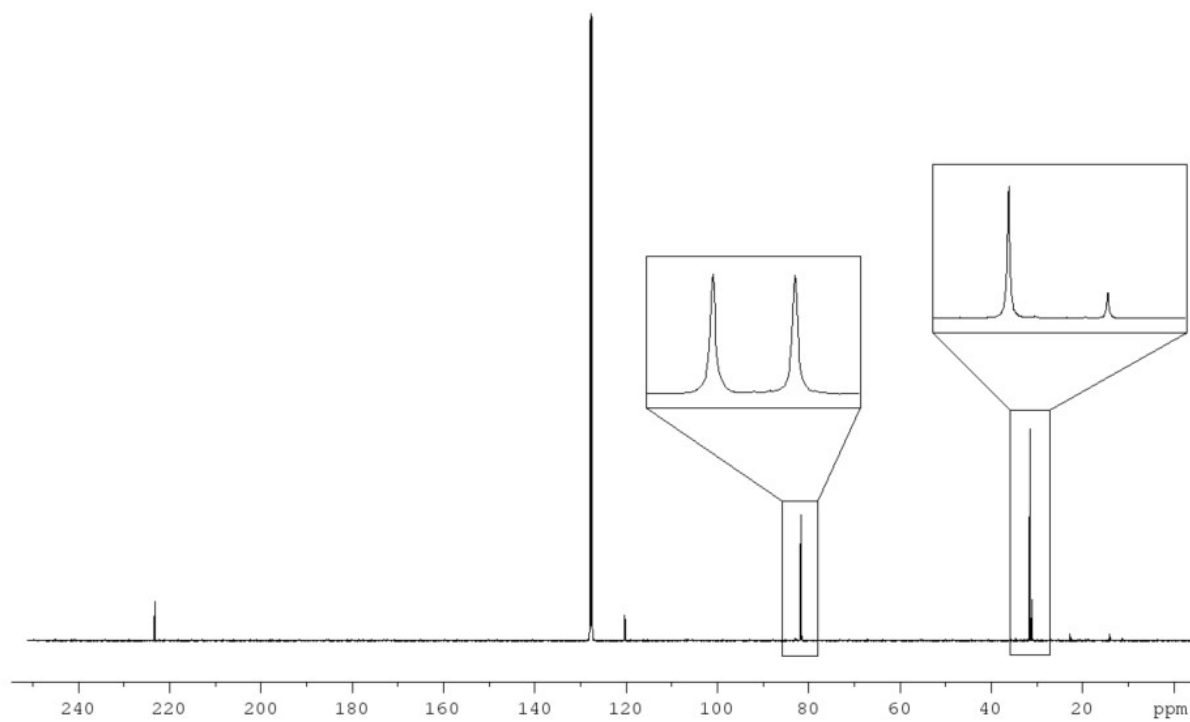


**Fig. S5.** IR Spectrum of **5** ( $[(Cp^{Me4nPr})_2Sm)_2Sb_4(Cp^tMo(CO)_2)_2]$ ).

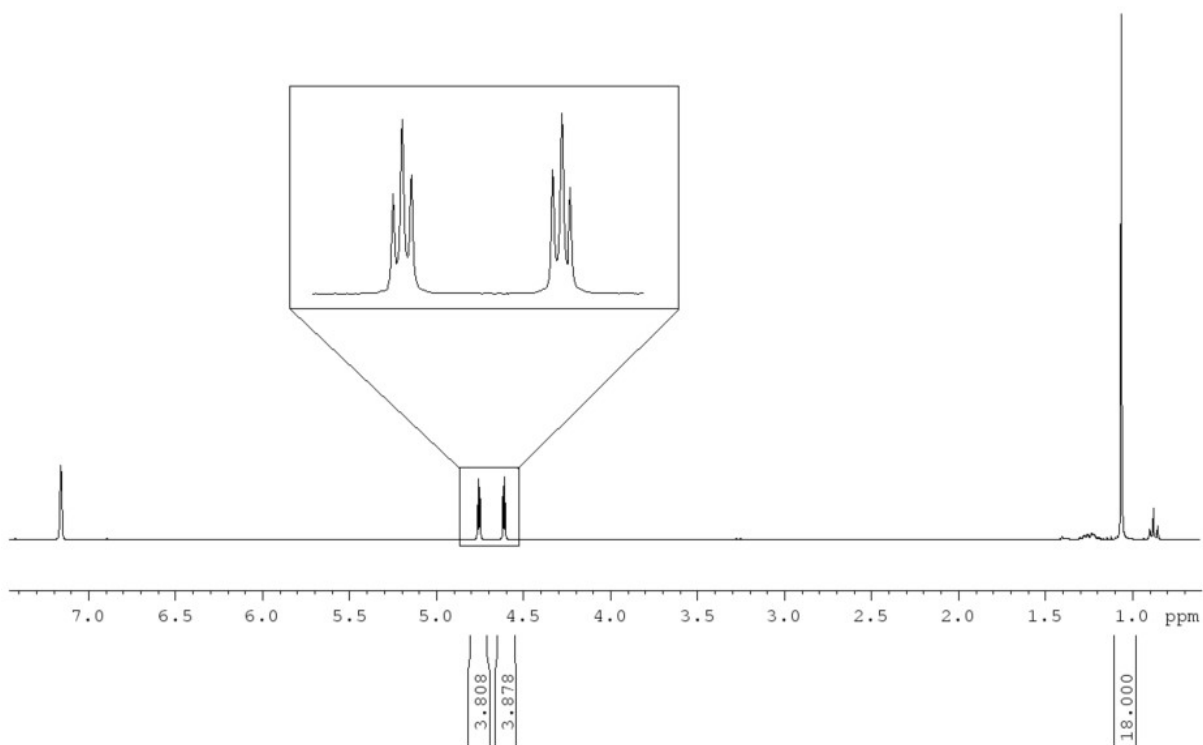
**NMR Spectra:**



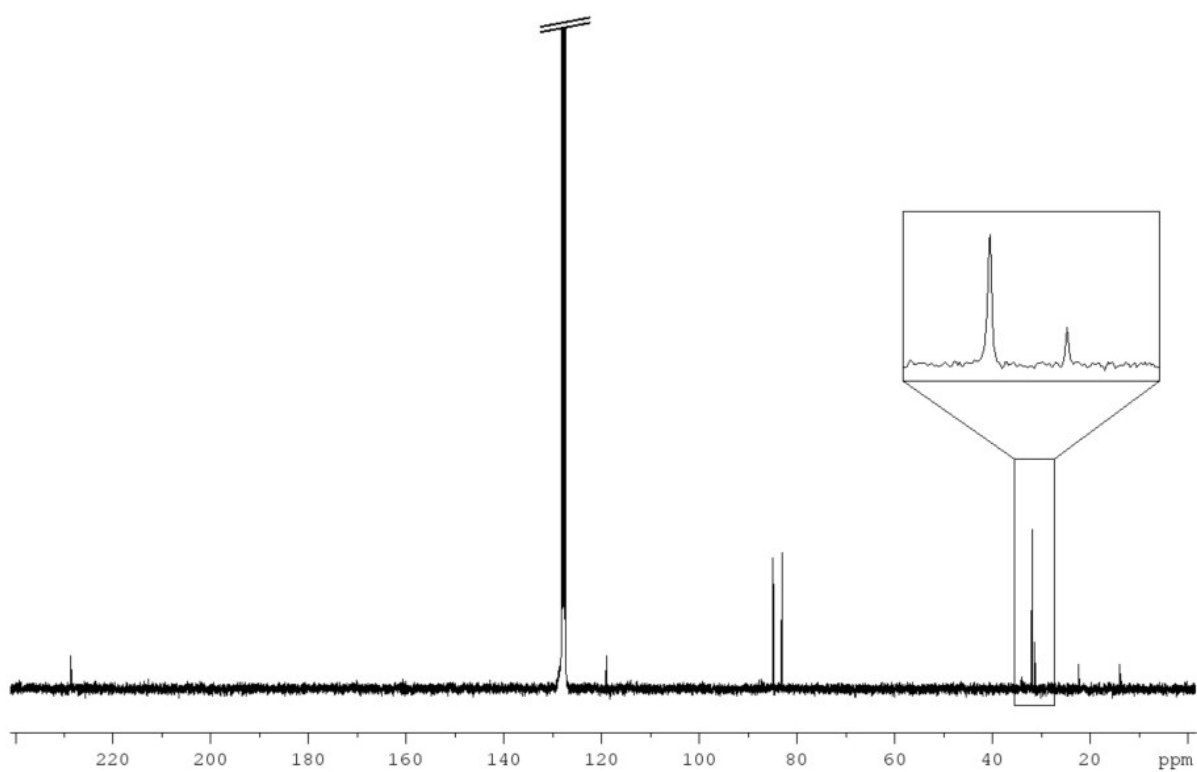
**Fig. S6.**  $^1\text{H}$ -NMR Spectrum of  $[\text{Cp}^t(\text{CO})_2\text{Mo}(\eta^3\text{-As}_3)]$ .



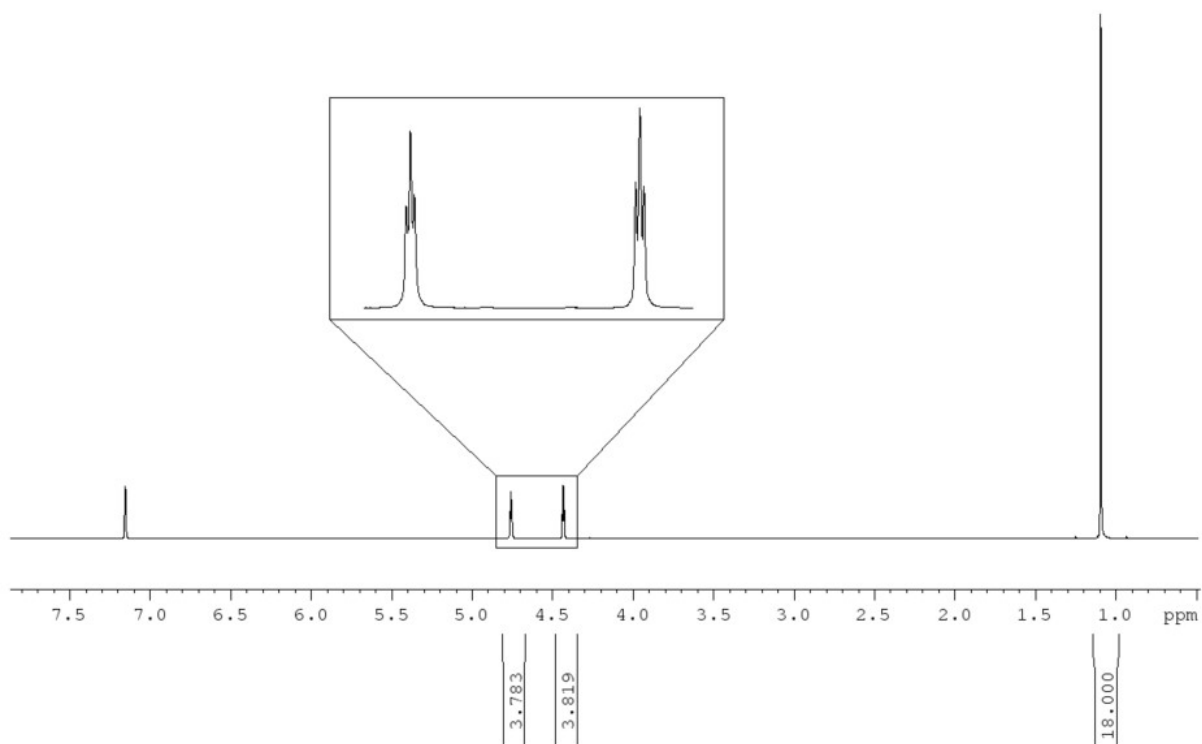
**Fig. S7.**  $^{13}\text{C}\{^1\text{H}\}$ -NMR Spectrum of  $[\text{Cp}^t(\text{CO})_2\text{Mo}(\eta^3\text{-As}_3)]$ .



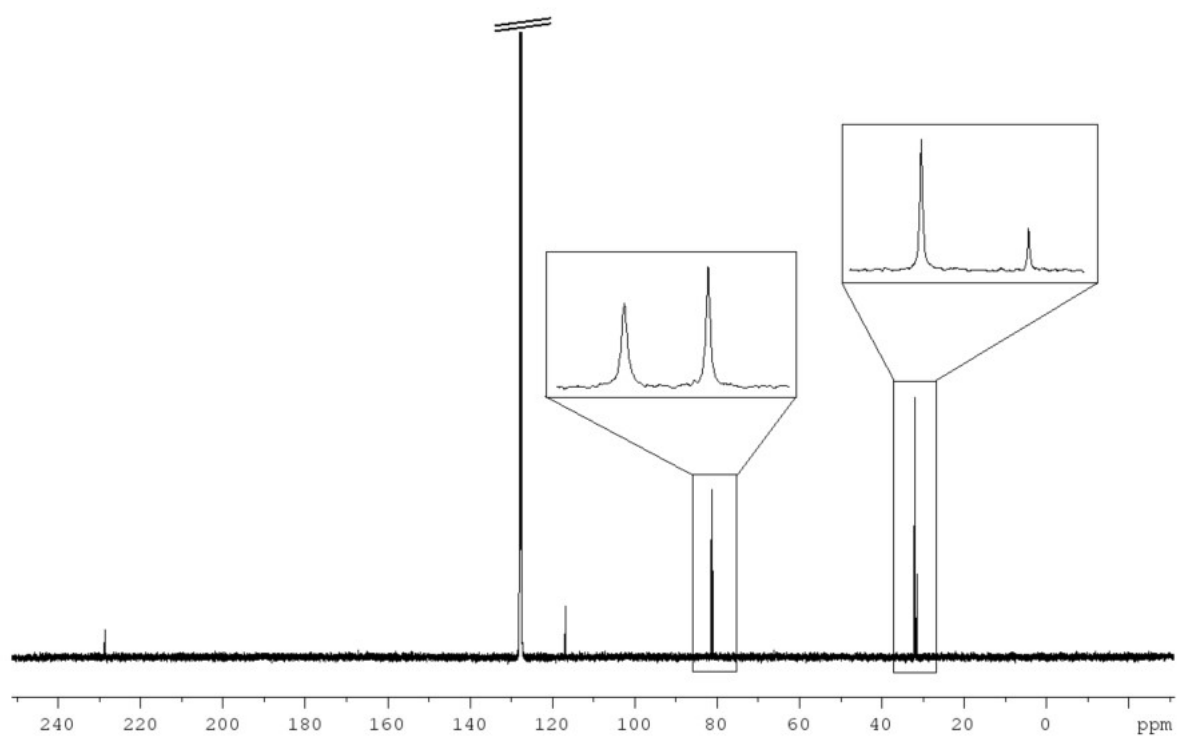
**Fig. S8.**  $^1\text{H-NMR}$  Spectrum of  $[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu,\eta^{2:2}\text{-As}_2)]$ .



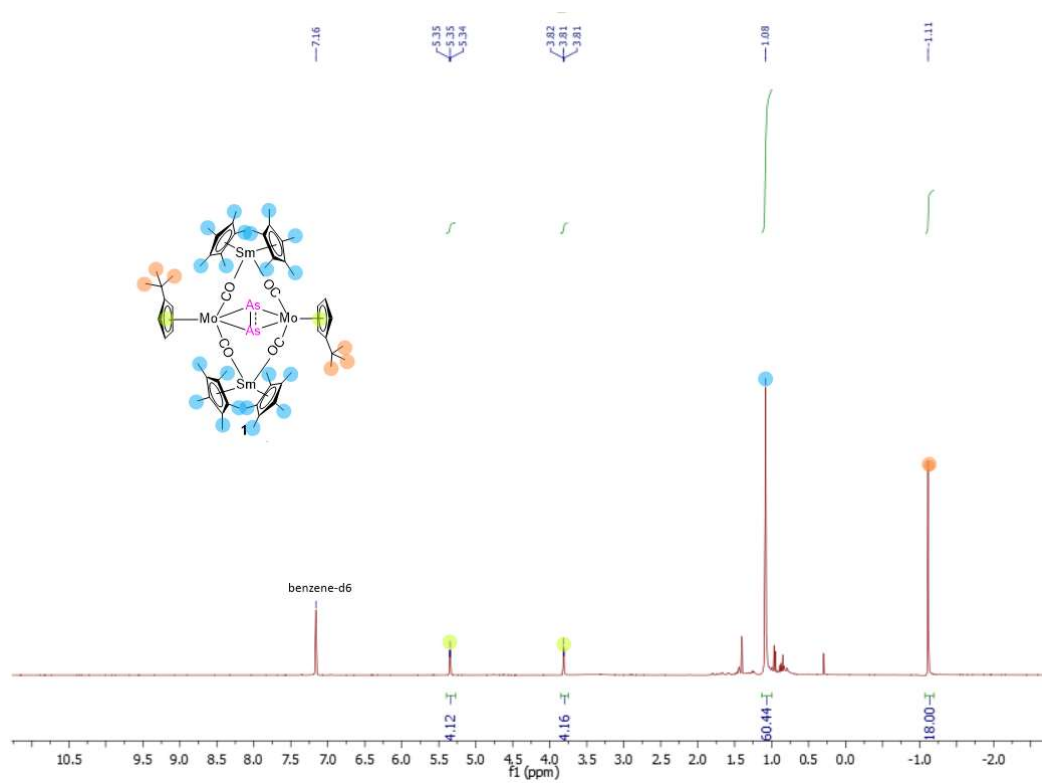
**Fig. S9.**  $^{13}\text{C}\{^1\text{H}\}$ -NMR Spectrum of  $[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu,\eta^{2:2}\text{-As}_2)]$ .



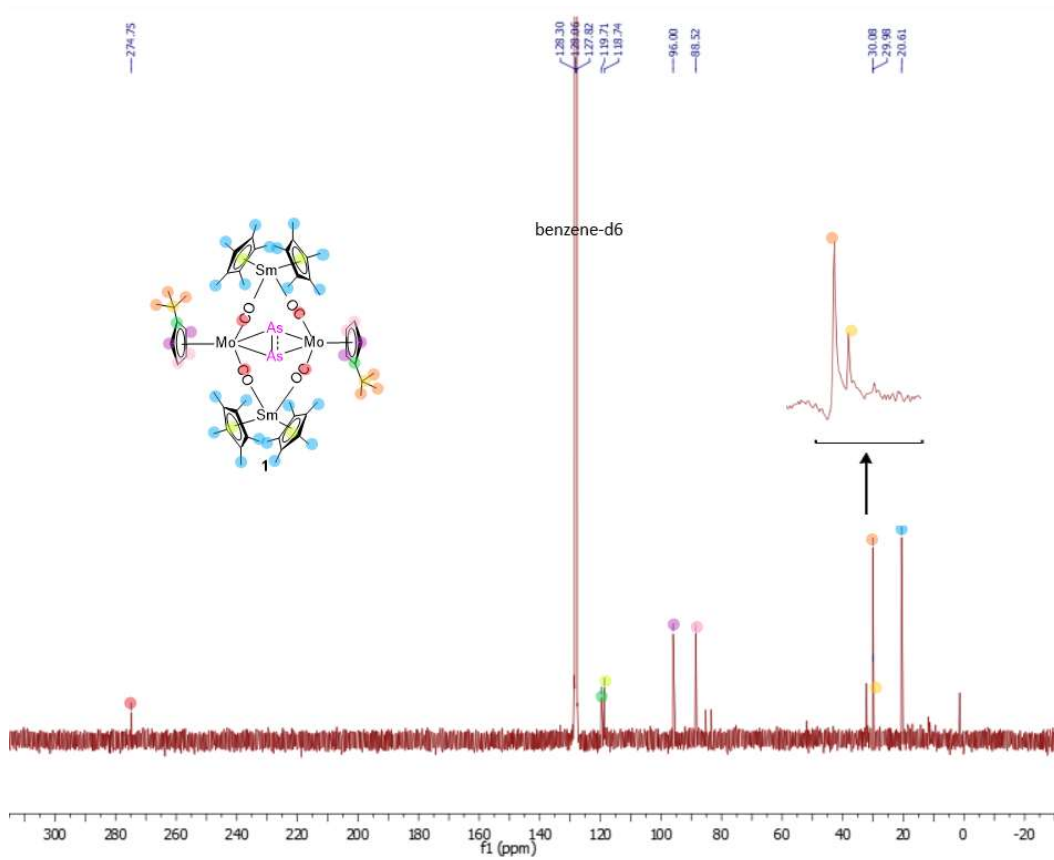
**Fig. S10.**  $^1\text{H}$ -NMR Spectrum of  $[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu,\eta^{2:2}\text{-Sb}_2)]$ .



**Fig. S11.**  $^{13}\text{C}\{^1\text{H}\}$ -NMR Spectrum of  $[\{\text{Cp}^t(\text{CO})_2\text{Mo}\}_2(\mu,\eta^{2:2}\text{-Sb}_2)]$ .



**Fig. S12.**  $^1\text{H-NMR}$  Spectrum of **1**.



**Fig. S13.**  $^{13}\text{C}\{^1\text{H}\}$ -NMR Spectrum of **1**. All unsigned peaks are traces of decomposition of **1** in solution. Single crystals were dissolved for recording the spectrum.

### **X-ray Crystallographic Studies of (1), (2), (3), (4) and (5):**

A suitable crystal was covered in mineral oil (Aldrich) and mounted on a glass fiber. The crystal was transferred directly to the cold stream of a STOE IPDS 2 or a STOE StadiVari diffractometer. All structures were solved by using the program SHELXS/T<sup>3</sup> and Olex2.<sup>4</sup> The remaining non-hydrogen atoms were located from successive difference Fourier map calculations. The refinements were carried out by using full-matrix least-squares techniques on  $F^2$  by using the program SHELXL.<sup>3</sup> In each case, the locations of the largest peaks in the final difference Fourier map calculations, as well as the magnitude of the residual electron densities, were of no chemical significance.

Crystallographic data (excluding structure factors) for the structures reported in this paper have been deposited with the Cambridge Crystallographic Data Centre as a supplementary publication no. 2015996-2016000. Copies of the data can be obtained free of charge on application to CCDC, 12 Union Road, Cambridge CB21EZ, UK (fax: +(44)1223-336-033; email: [deposit@ccdc.cam.ac.uk](mailto:deposit@ccdc.cam.ac.uk)).

### **Refinement Details**

The crystal structure of **1** contains 1.75 molecules of *n*-hexane per molecule. The molecules could not be modeled satisfactorily and were therefore removed from the electron density map using the OLEX2 solvent mask.

The crystal structure of **5** is reproducibly slightly twinned and disordered. No crystals of better quality could be grown. The twinning could not be solved by using twin integration nor applying a twin-matrix. This results in A and B alerts in the cif check. One of the two half molecules in the asymmetric units is disordered by the turning of the Sb<sub>4</sub> unit in a 45 to 55 ratio. This is leading to a disorder with the CO moieties which could be modeled. Additionally,

the crystal structure contains one disordered molecule of toluene in the asymmetric unit which causes alerts dealing with short inter H...H contacts.

**Table S1:** Crystal data and structure refinement of **1**, **2** and **3**.

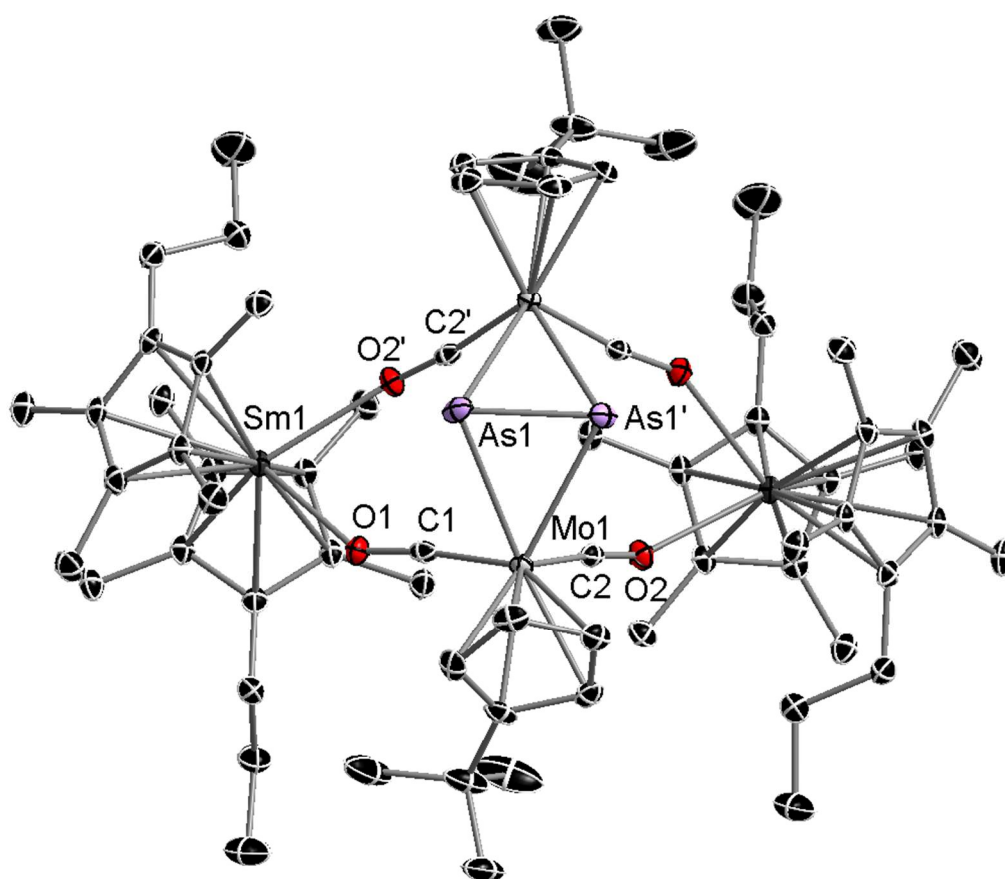
Compound	<b>1</b>	<b>2</b>	<b>3</b>
<b>Formula</b>	C <sub>62</sub> H <sub>86</sub> Mo <sub>2</sub> O <sub>4</sub> As <sub>2</sub> Sm <sub>2</sub> · 1.75 <i>n</i> -hexane	C <sub>70</sub> H <sub>102</sub> Mo <sub>2</sub> O <sub>4</sub> As <sub>2</sub> Sm <sub>2</sub>	C <sub>70</sub> H <sub>102</sub> Mo <sub>2</sub> O <sub>4</sub> As <sub>4</sub> Sm <sub>2</sub>
<i>D</i> <sub>calc.</sub> / g cm <sup>-3</sup>	1.272	1.570	1.750
<i>μ</i> /mm <sup>-1</sup>	2.598	2.994	4.022
<b>Formula Weight</b>	1537.72	1649.93	1799.77
<b>Colour</b>	clear red	red	clear reddish orange
<b>Shape</b>	irregular	irregular	plank
<b>Size/mm<sup>3</sup></b>	0.43×0.38×0.34	0.38×0.26×0.12	0.36×0.16×0.05
<b>T/K</b>	150	100	100
<b>Crystal System</b>	orthorhombic	monoclinic	monoclinic
<b>Space Group</b>	<i>Pccn</i>	<i>C2/c</i>	<i>P2<sub>1</sub>/n</i>
<i>a</i> /Å	25.760(5)	30.778(6)	17.800(4)
<i>b</i> /Å	32.030(6)	10.050(2)	9.500(2)
<i>c</i> /Å	19.460(4)	25.375(5)	20.200(4)
<i>α</i> <sup>°</sup>	90	90	90
<i>β</i> <sup>°</sup>	90	117.24(3)	91.10(3)
<i>γ</i> <sup>°</sup>	90	90	90
<i>V</i> /Å <sup>3</sup>	16056(6)	6978(3)	3415.2(12)
<b>Z</b>	8	4	2
<b>Z'</b>	1	0.5	0.5
<b>Wavelength/Å</b>	0.71073	0.71073	0.71073
<b>Radiation type</b>	MoK <sub>α</sub>	MoK <sub>α</sub>	MoK <sub>α</sub>
<i>θ</i> <sub>min</sub> <sup>°</sup>	1.271	2.587	2.623
<i>θ</i> <sub>max</sub> <sup>°</sup>	25.189	29.586	29.593
<b>Measured Refl.</b>	136018	43003	20036
<b>Independent Refl.</b>	14336	8944	8308
<b>Reflections with I &gt; 2(I)</b>	12308	7556	6633
<i>R</i> <sub>int</sub>	0.0322	0.0339	0.0219
<b>Parameters</b>	675	374	383
<b>Restraints</b>	0	0	0
<b>Largest Peak</b>	1.001	0.786	1.119
<b>Deepest Hole</b>	-0.753	-0.399	-0.417
<b>Goof</b>	1.164	1.000	0.996
<i>wR</i> <sub>2</sub> (all data)	0.1179	0.0508	0.0649
<i>wR</i> <sub>2</sub>	0.1155	0.0497	0.0605
<i>R</i> <sub>1</sub> (all data)	0.0521	0.0282	0.0428
<i>R</i> <sub>1</sub>	0.0464	0.0218	0.0279



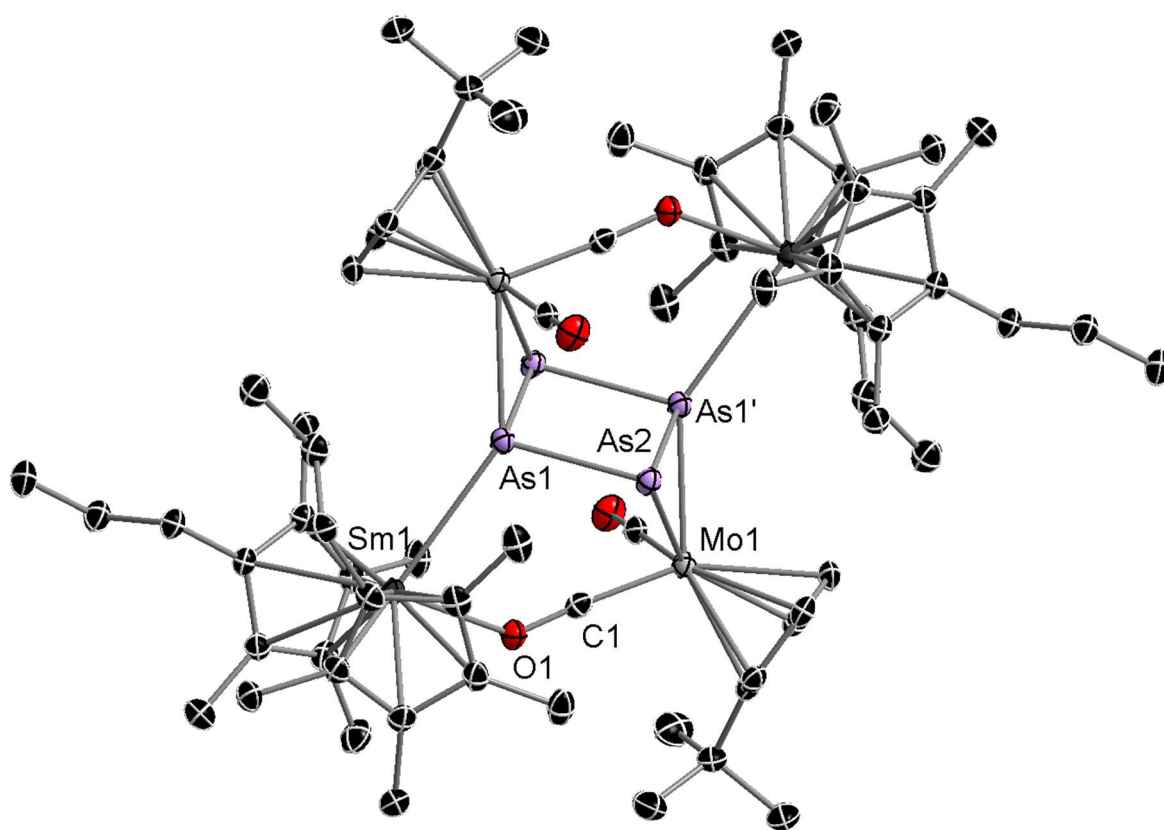
**Table S2:** Crystal data and structure refinement of **4** and **5**.

Compound	<b>4</b>	<b>5</b>
<b>Formula</b>	C <sub>62</sub> H <sub>86</sub> Mo <sub>2</sub> O <sub>4</sub> Sb <sub>4</sub> Sm <sub>2</sub>	C <sub>70</sub> H <sub>102</sub> Mo <sub>2</sub> O <sub>4</sub> Sb <sub>4</sub> Sm <sub>2</sub> · 0.25 toluene
<i>D</i> <sub>calc.</sub> / g cm <sup>-3</sup>	1.953	1.709
$\mu$ /mm <sup>-1</sup>	3.899	3.190
<b>Formula Weight</b>	1874.88	2010.12
<b>Colour</b>	clear orange	clear red
<b>Shape</b>	plate	plank
<b>Size/mm<sup>3</sup></b>	0.17×0.16×0.15	0.34×0.18×0.07
<i>T</i> /K	100	210
<b>Crystal System</b>	triclinic	triclinic
<b>Space Group</b>	<i>P</i> -1	<i>P</i> -1
<i>a</i> /Å	10.650(3)	14.6782(5)
<i>b</i> /Å	10.613(2)	16.5208(5)
<i>c</i> /Å	14.627(3)	18.0566(7)
$\alpha$ <sup>°</sup>	88.52(2)	83.156(3)
$\beta$ <sup>°</sup>	78.18(2)	78.367(3)
$\gamma$ <sup>°</sup>	80.17(2)	65.698(3)
<i>V</i> /Å <sup>3</sup>	1594.5(6)	3905.5(3)
<i>Z</i>	1	2
<i>Z'</i>	0.5	1
<b>Wavelength/Å</b>	0.71073	0.71073
<b>Radiation type</b>	MoK $\alpha$	MoK $\alpha$
$\theta$ <sub>min</sub> <sup>°</sup>	1.947	1.354
$\theta$ <sub>max</sub> <sup>°</sup>	26.133	27.175
<b>Measured Refl.</b>	11627	33430
<b>Independent Refl.</b>	6165	17178
<b>Reflections with I &gt; 2(I)</b>	4840	10444
<i>R</i> <sub>int</sub>	0.0686	0.0542
<b>Parameters</b>	347	841
<b>Restraints</b>	0	198
<b>Largest Peak</b>	2.367	5.390
<b>Deepest Hole</b>	-2.063	-3.119
<b>Goof</b>	1.019	1.040
<i>wR</i> <sub>2</sub> (all data)	0.1750	0.1807
<i>wR</i> <sub>2</sub>	0.1654	0.1586
<i>R</i> <sub>1</sub> (all data)	0.0771	0.1099
<i>R</i> <sub>1</sub>	0.0645	0.0601

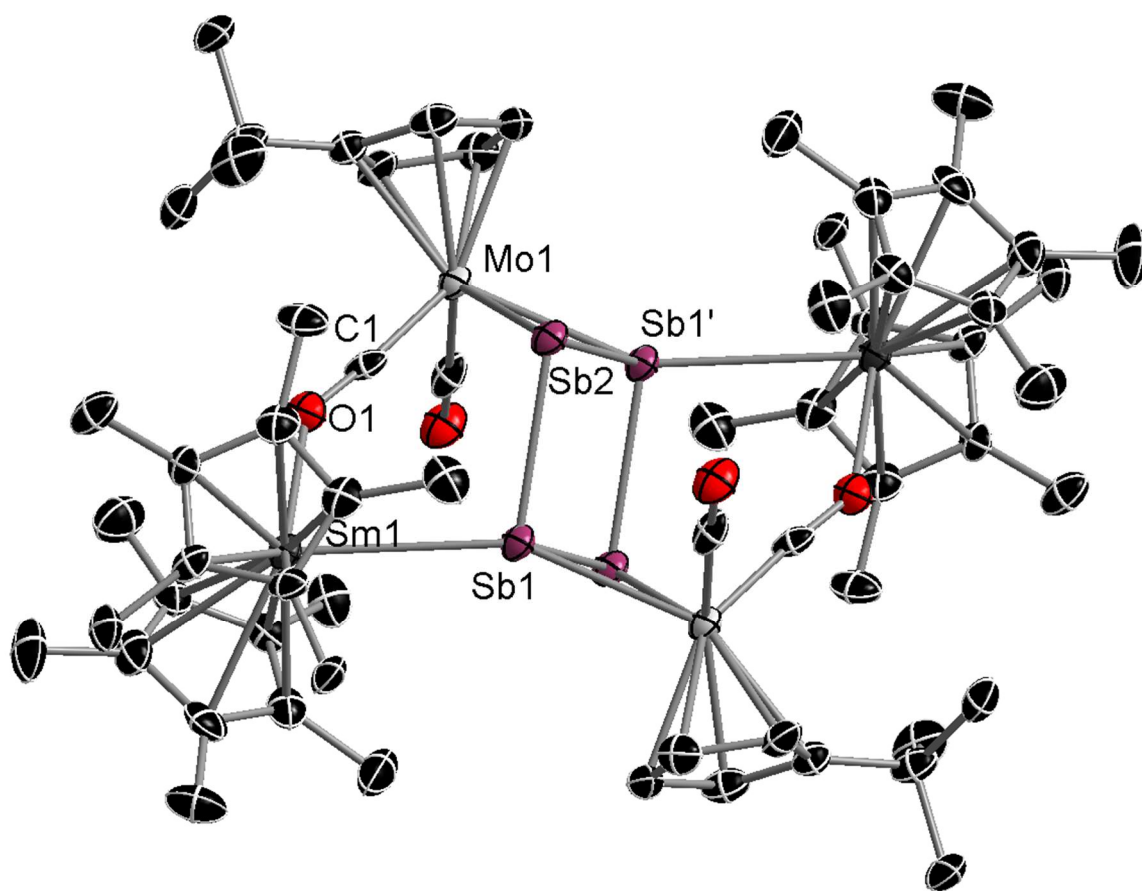




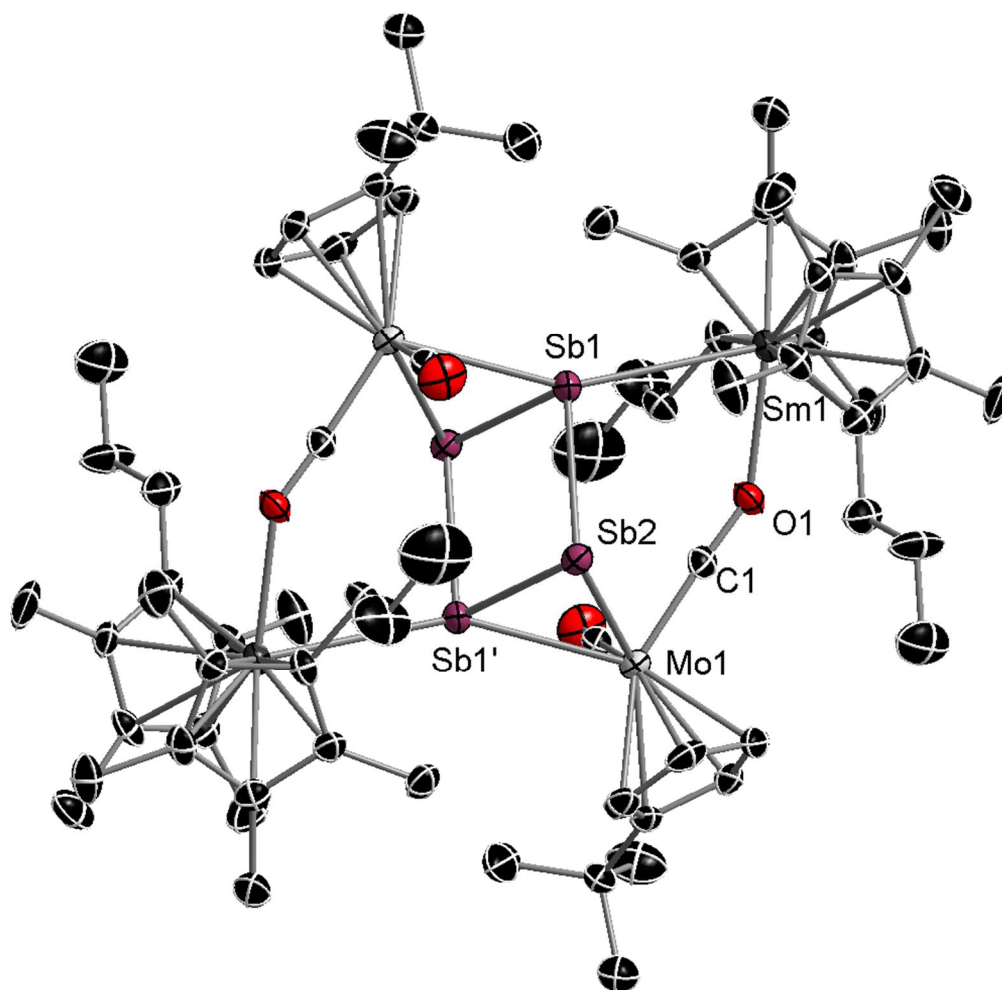
**Fig. S15.** Molecular structure of **2** in the solid state displayed with an ellipsoid probability of 50 %. Hydrogen atoms are omitted for clarity. Selected bond lengths [Å] and angles [°]: Sm1–O1 2.383(2), Sm1–O2' 2.413(2), Mo1–As1 2.7047(5), Mo1–As1' 2.7092(10), Mo1–C1 1.887(2), As1–As1' 2.2411(7), C1–O1 1.212(3), O1–Sm–O2' 74.47(5), Mo1–As1–Mo1' 103.02(2).



**Fig. S16.** Molecular structure of **3** in the solid state displayed with an ellipsoid probability of 50 %. Hydrogen atoms are omitted for clarity. Selected bond lengths [Å] and angles [°]: Sm1–As1 3.0300(8), Sm1–O1 2.380(2), Mo1–As2 2.6498(7), Mo1–As1' 2.6261(7), Mo1–C1 1.873(3), As1–As2 2.4862(7), As1'–As2 2.3503(6), C1–O1 1.206(4), O1–Sm–As1 76.99(6), As1'–Mo1–As2 52.91(2), Mo1–As1'–Sm1' 142.35(2), As1'–As2–Mo1 63.03(2), As1–As2–Mo1 105.01(3), As2–As1–As2' 91.16(2), As1–As2–As1' 88.84(2).



**Fig. S17.** Molecular structure of **4** in the solid state displayed with an ellipsoid probability of 50 %. Hydrogen atoms are omitted for clarity. Selected bond lengths [Å] and angles [°]: Sm1–Sb2' 3.2375(7), Sm1–O1 2.381(6), Mo1–Sb2 2.8146(9), Mo1–Sb1 2.8549(9), Mo1–C1 1.894(8), Sb1–Sb2 2.7313(8), Sb1–Sb2' 2.8608(7), C1–O1 1.209(10), O1–Sm–Sb2' 76.73(14), Sb1–Mo1–Sb2 57.59(2), Mo1–Sb2–Sm1' 153.18(2), Sb1–Sb2–Mo1 61.94(2), Sb2'–Sb1–Mo1 102.32(2), Sb2–Sb1–Sb2' 87.73(2), Sb1–Sb2–Sb1' 92.28(2).



**Fig. S18.** Molecular structure of **5** in the solid state displayed with an ellipsoid probability of 30 %. Hydrogen atoms are omitted for clarity. Selected bond lengths [Å] and angles [°]: Sm1–Sb1 3.2794(8), Sm1–O1 2.386(7), Mo1–Sb2 2.8464(11), Mo1–Sb1' 2.8315(11), Mo1–C1 1.888(10), Sb1–Sb2 2.8618(10), Sb1'–Sb2 2.7254(10), C1–O1 1.221(12), O1–Sm–Sb1 76.83(17), Sb1'–Mo1–Sb2 57.37(3), Mo1–Sb1'–Sm1' 152.00(3), Sb1'–Sb2–Mo1 61.59(3), Sb1–Sb2–Mo1 103.46(3), Sb2–Sb1–Sb2' 90.16(3), Sb1–Sb2–Sb1' 89.84(3).

## Theoretical calculations

### Computational Details:

The quantum chemical RI-DFT calculations were performed by means of the program system TURBOMOLE<sup>5</sup> using the RI-BP86 functional.<sup>6</sup> The basis sets for each atom were of def-SV(P) quality.<sup>7</sup> For Mo<sup>8</sup> or Sm<sup>9</sup> effective core potentials (ecp) containing 28 or 51 electrons including the f-electrons were taken. Population analyses based on occupation numbers were performed to calculate shared electron numbers (SEN) as reliable measures for covalent bonding.<sup>10</sup>

**Table S3:** Total energies (given in a.u.) of the molecules under discussion. The energy considerations of Fig. 5 are based on these values.

	symmetry	P	As	Sb
[{CpMo(CO) <sub>2</sub> ] <sub>2</sub> ( $\mu$ , $\eta^{2:2}$ -E <sub>2</sub> )]	C <sub>2</sub>	-1659.22071	-5448.4499	-987.61943
[(Cp* <sub>2</sub> Sm) <sub>2</sub> E <sub>2</sub> (CpMo(CO) <sub>2</sub> ) <sub>2</sub> ]	C <sub>i</sub>	-3288.27198	-7077.4962	-2616.6594
[(Cp* <sub>2</sub> Sm) <sub>2</sub> E <sub>4</sub> (CpMo(CO) <sub>2</sub> ) <sub>2</sub> ]	C <sub>i</sub>	-3970.90026	-11549.3500	-2627.6896
[(Cp* <sub>2</sub> Sm) <sub>2</sub> E <sub>2</sub> (CpMo(CO) <sub>2</sub> ) <sub>4</sub> ]	C <sub>2</sub>	-4264.9307	-8054.1418	-3593.2969
E <sub>2</sub>	D <sub>∞h</sub>	-682.563468	-4471.7904	-10.95832
E <sub>2</sub> H <sub>2</sub>	C <sub>2h</sub>			
E <sub>2</sub> H <sub>4</sub>	C <sub>2h</sub>			

**Table S4:** E-E Bond distances (pm) and SEN values obtained from theoretical calculations.

	P-P		As-As		Sb-Sb	
	d	SEN	d	SEN	d	SEN
[{CpMo(CO) <sub>2</sub> ] <sub>2</sub> ( $\mu$ , $\eta^{2:2}$ -E <sub>2</sub> )]	218.45	1.23	240.94	1.06	280.18	1.05
[(Cp* <sub>2</sub> Sm) <sub>2</sub> E <sub>2</sub> (CpMo(CO) <sub>2</sub> ) <sub>2</sub> ]	206.51	1.57	227.9	1.38	266.32	1.38
[(Cp* <sub>2</sub> Sm) <sub>2</sub> E <sub>4</sub> (CpMo(CO) <sub>2</sub> ) <sub>2</sub> ]	217.79/233.15	1.24/0.97	240.02/255.73	1.1/0.85	279.07/293.61	1.01/0.85
[(Cp* <sub>2</sub> Sm) <sub>2</sub> E <sub>2</sub> (CpMo(CO) <sub>2</sub> ) <sub>4</sub> ]	207.75	1.38	237.07	1.03	281.1	0.87
E <sub>2</sub>	191.6	2.46	212.25	2.28	253.72	2.21
E <sub>2</sub> H <sub>2</sub>	205.48	1.73	227.08	1.59	268.8	1.56
E <sub>2</sub> H <sub>4</sub>	227.66	1.08	249.41	0.99	290.05	0.97

**Cartesian Coordinates of the theoretically calculated Molecules  
(given in a. u.)**

**[ {CpMo (CO)<sub>2</sub> }<sub>2</sub> (μ, η<sup>2:2</sup>-P<sub>2</sub>) ]**

\$coord

-0.30834973622480	4.08196070174724	0.21989572725268	mo
0.30834973622480	-4.08196070174724	0.21989572725268	mo
3.22246887805232	5.11469331993020	0.99423286581254	c
-3.22246887805232	-5.11469331993020	0.99423286581254	c
0.86406397276028	3.07043633515838	-3.17279808796864	c
-0.86406397276028	-3.07043633515838	-3.17279808796864	c
5.24943953927126	5.88328400908424	1.41251924929999	o
-5.24943953927126	-5.88328400908424	1.41251924929999	o
1.52203364781404	2.62877701380224	-5.23450599479011	o
-1.52203364781404	-2.62877701380224	-5.23450599479011	o
-3.72588111475749	6.09967048683332	2.45529805208185	c
-4.66670155047934	5.38504589977637	0.01159876146113	c
-3.23141508213772	6.72757500131574	-1.85491072893377	c
-1.42355696996306	8.29467105979273	-0.57772957993773	c
-1.72471979585176	7.88532458875162	2.10145061390659	c
-4.42884968837578	5.40103053285627	4.27889195948667	h
-6.23096947074277	4.07609768699070	-0.36280548438742	h
-3.51299109290457	6.62203399810001	-3.90881766237223	h
-0.09906883857625	9.61421559841998	-1.47657788763415	h
-0.65601795160886	8.83411431593896	3.60630246063442	h
3.72588111475749	-6.09967048683332	2.45529805208185	c
1.72471979585176	-7.88532458875162	2.10145061390659	c
4.66670155047934	-5.38504589977637	0.01159876146113	c
1.42355696996306	-8.29467105979273	-0.57772957993773	c
3.23141508213772	-6.72757500131574	-1.85491072893377	c
4.42884968837578	-5.40103053285627	4.27889195948667	h
0.65601795160886	-8.83411431593896	3.60630246063442	h
6.23096947074277	-4.07609768699070	-0.36280548438742	h
0.09906883857625	-9.61421559841998	-1.47657788763415	h
3.51299109290457	-6.62203399810001	-3.90881766237223	h
2.06408773875717	-0.00613498001178	1.50795573608825	p
-2.06408773875717	0.00613498001178	1.50795573608825	p

\$end

**[ {CpMo (CO)<sub>2</sub> }<sub>2</sub> (μ, η<sup>2:2</sup>-As<sub>2</sub>) ]**

\$coord

-0.37006651411595	4.19446113049219	0.17685310610832	mo
0.37006651411595	-4.19446113049219	0.17685310610832	mo
3.17742963606254	5.23663666917989	0.81252768663992	c
-3.17742963606254	-5.23663666917989	0.81252768663992	c
0.65543901925306	3.17903158706586	-3.26146053558911	c
-0.65543901925306	-3.17903158706586	-3.26146053558911	c
5.20647849516273	6.04899382194473	1.14731076438739	o
-5.20647849516273	-6.04899382194473	1.14731076438739	o
1.21872500177326	2.76897866807403	-5.35854434585220	o
-1.21872500177326	-2.76897866807403	-5.35854434585220	o
-3.71797189227186	6.20292641853547	2.51985205846138	c
-4.71042870481563	5.55832892086894	0.07504744089007	c
-3.28690407393905	6.92401467710171	-1.78480202220594	c
-1.43607104108615	8.43366494707606	-0.50216565805544	c
-1.69982560258598	7.96971402684038	2.17330672669332	c
-4.40940890290394	5.48494117673408	4.34045485124214	h



-6.31135729257492	4.29532187263999	-0.30298184948094	h
-3.60596066437848	6.87311103621068	-3.83516009625259	h
-0.10820147339750	9.75546842058912	-1.39278954777306	h
-0.59297002975358	8.86977221657889	3.68047089214327	h
3.71797189227186	-6.20292641853547	2.51985205846138	c
1.69982560258598	-7.96971402684038	2.17330672669332	c
4.71042870481563	-5.55832892086894	0.07504744089007	c
1.43607104108615	-8.43366494707606	-0.50216565805544	c
3.28690407393905	-6.92401467710171	-1.78480202220594	c
4.40940890290394	-5.48494117673408	4.34045485124214	h
0.59297002975358	-8.86977221657889	3.68047089214327	h
6.31135729257492	-4.29532187263999	-0.30298184948094	h
0.10820147339750	-9.75546842058912	-1.39278954777306	h
3.60596066437848	-6.87311103621068	-3.83516009625259	h
2.27608940311289	0.04477197673941	1.51208052864353	as
-2.27608940311289	-0.04477197673941	1.51208052864353	as

\$end

**[ {CpMo (CO)<sub>2</sub> }<sub>2</sub> (μ, η<sup>2:2</sup>-Sb<sub>2</sub>) ]**

\$coord

-0.45345131803413	4.42800394865069	0.16176160803301	mo
0.45345131803413	-4.42800394865069	0.16176160803301	mo
3.09700858432799	5.50481188707297	0.65393444292648	c
-3.09700858432799	-5.50481188707297	0.65393444292648	c
0.40175703356391	3.34495297743235	-3.30124399999736	c
-0.40175703356391	-3.34495297743235	-3.30124399999736	c
5.10552475391943	6.41000555388012	0.89701406239714	o
-5.10552475391943	-6.41000555388012	0.89701406239714	o
0.84308393076595	2.93300288457553	-5.42917195990210	o
-0.84308393076595	-2.93300288457553	-5.42917195990210	o
-3.73097152278013	6.47104541741548	2.57573542923309	c
-4.77790492383457	5.85038197010962	0.14413404605557	c
-3.36443285867382	7.19903340870142	-1.73561343207828	c
-1.46570113681106	8.67139856270526	-0.48057491280442	c
-1.69448538569756	8.20847393958017	2.20003451490318	c
-4.41452656269867	5.77635537136996	4.40831583076423	h
-6.42397062249803	4.63953911640639	-0.20925053602742	h
-3.72326534033797	7.16503390082723	-3.77959686706325	h
-0.13526646074734	9.97802870009392	-1.38960836485444	h
-0.54772448690933	9.08727790885893	3.68976155943350	h
3.73097152278013	-6.47104541741548	2.57573542923309	c
1.69448538569756	-8.20847393958017	2.20003451490318	c
4.77790492383457	-5.85038197010962	0.14413404605557	c
1.46570113681106	-8.67139856270526	-0.48057491280442	c
3.36443285867382	-7.19903340870142	-1.73561343207828	c
4.41452656269867	-5.77635537136996	4.40831583076423	h
0.54772448690933	-9.08727790885893	3.68976155943350	h
6.42397062249803	-4.63953911640639	-0.20925053602742	h
0.13526646074734	-9.97802870009392	-1.38960836485444	h
3.72326534033797	-7.16503390082723	-3.77959686706325	h
2.64415732746676	0.12857455279356	1.59436857898121	sb
-2.64415732746676	-0.12857455279356	1.59436857898121	sb

\$end

**[ (Cp\*<sub>2</sub>Sm)<sub>2</sub>P<sub>2</sub>(CpMo (CO)<sub>2</sub>)<sub>2</sub> ]**

\$coord

-7.67113085999244	-0.80946155383979	-0.71715955024543	sm
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-4.19944720917236	0.68178687293195	-3.37853701525469	o
-4.38475387979769	0.34690380511289	2.35862543939967	o
-2.34403027854076	2.03806822948726	-3.48961921350678	c
-9.84623933852756	3.71518028850610	0.83804168929031	c
-11.63040899384906	1.91484923501928	-2.75273827783282	c
-11.56859835070598	1.76972179149900	1.63718393230009	c
-9.87383618545662	3.79882245986307	-1.87228015492134	c
-2.73023394249022	1.85594635644285	2.90009579079038	c
-5.27718987710786	-5.28789841080847	-1.80145652857965	c
-12.72208924093034	0.70335784620322	-0.57745863046797	c
-8.07555356589703	4.70108854598549	4.42647566003863	h
-9.65816089591586	-5.53684014682791	-2.05247834486509	c
-2.53160554431455	-5.23076452041737	-2.54606720279632	c
-1.42999209523568	-3.81299291679851	-1.45803291246466	h
-6.24153312054156	-5.59039848236718	0.71629576525730	c
-4.68272231103578	-5.95403880117953	3.07365376711951	c
-2.85794568402656	-4.92555633954667	2.97953103637963	h
-12.30475947020734	1.20310550256195	4.33421577947391	c
-7.38805126956673	-5.21746689447658	-3.50731884496549	c
-8.95349801304629	-5.72855034440282	0.56852313552390	c
-10.05642561246422	-5.46417636775576	4.54655316549091	h
-10.69405014447210	1.43363165162064	5.66533740717241	h
-10.83422471064482	1.81217099325665	-6.81039534787725	h
0.36900238993291	4.34698552222225	-4.00079221938703	mo
-8.54091871060639	5.55901399433160	2.56721392283781	c
-12.42889945743948	1.54507415469061	-5.46663340308924	c
-8.55081815598245	5.71929526949994	-3.50851517064921	c
-0.36909915463495	4.34993882192857	3.99122854198240	mo
-15.04725277544996	-0.93864935534958	-0.56453743256708	c
-12.21306670626869	-6.13151253681001	-3.16213200508734	c
-1.61503130699490	-7.10030487638874	-2.22142675972202	h
-2.29114084809121	-4.76324222177416	-4.57585283745836	h
-5.67965135583872	-5.28809697761922	4.79940406481573	h
-4.23400277309253	-7.99305706408630	3.38055805459781	h
-13.82851664164373	2.49856682192501	5.00868136993995	h
-13.03253498973445	-0.75449115625582	4.56364546359586	h
-7.25038702564870	-5.11881501383757	-6.35527329249052	c
-10.68543535511078	-6.35164325798928	2.74703000828753	c
-1.94523251558011	6.58103833036069	-0.19385886091674	p
1.93902462998208	6.58320098462072	0.18210005141541	p
2.72380885612789	1.84717339840892	-2.90709204499610	c
2.23397428433679	7.84192858285311	-6.37535457055061	c
3.57523562830843	9.15954441945118	-5.49755943267488	h
-0.45429292946788	8.14950788854219	-6.47922433884074	c
-1.52546553888553	9.74140262561789	-5.68786440249075	h
0.55363626265862	4.36907925475596	-8.46843736062661	c
2.85574539647667	5.51182226063320	-7.60034821033318	c
4.76652007938917	4.75122332081415	-7.87651760997873	h
-1.49338763224645	6.01792540366473	-7.77706205209704	c
-3.50117281275674	5.71338340707948	-8.20506144540514	h
-6.74856465574450	6.29039943661477	1.75547467901046	h
-9.78095686505626	7.22241397236491	2.95420455393082	h
-13.22000995277523	-0.37049898618965	-5.80916410580315	h
-13.92049441991042	2.92773362904707	-6.02896617513157	h
-8.11261020065162	4.96238383267736	-5.41907999735915	h
-9.75860343581808	7.42630413649490	-3.79233839720634	h
-6.74114316070773	6.37393280876070	-2.66679576144219	h
2.33226759269852	2.02761921897602	3.47964925762125	c
-2.24193624642725	7.83681124405380	6.37131442035601	c

-3.59739044783876	9.14402211825956	5.49977678910490	h
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1.50055776437280	9.75932251202387	5.65654688855538	h
-0.52579719173729	4.37898571182580	8.46006848437043	c
-2.84052925183941	5.50462380429514	7.60408691823971	c
-4.74447594263864	4.73157474906545	7.89306100370077	h
1.50618313240698	6.04015543873058	7.75341865306733	c
3.51850240082617	5.75003325095596	8.16978813509583	h
-14.98650186472003	-2.43936693059940	0.90511664310544	h
-16.75628503530888	0.22941513705398	-0.15573941764562	h
-15.37937996584412	-1.87187653073507	-2.41003024075793	h
-12.73054771553159	-4.86856842118415	-4.76091129777234	h
-12.23793695463686	-8.09931596008673	-3.92218979897071	h
-13.74761304164933	-6.01035710382074	-1.74176864457475	h
-9.00909692711264	-4.33963041464882	-7.20044466537061	h
-5.65273157895050	-3.93653468310472	-7.03711058514528	h
-6.98402481726670	-7.04150285420247	-7.18327502651049	h
-12.65953535867090	-5.72645079878570	2.40045645857099	h
-10.75837212800036	-8.43034158812904	3.10162569046552	h
7.66103062598247	-0.82621131126499	0.71486812490791	sm
4.37574668931679	0.33553424809524	-2.36506240536298	o
0.39548862291986	2.60756089227727	-9.55217922302365	h
4.17881149577491	0.65944737753360	3.36795834035260	o
-0.34935503445731	2.62043499063152	9.54576825920378	h
9.83404984138555	3.70346888238331	-0.83100699635892	c
11.60950124420456	1.90450618111117	2.76472820011385	c
11.56223234339487	1.76111793252180	-1.62529004590969	c
9.85260335683286	3.78587396391389	1.87930388883381	c
5.28514694225126	-5.31794986730601	1.78857617371774	c
12.71085993328802	0.69638279925380	0.59255913868706	c
8.07686960825908	4.68959133923817	-4.42562379094918	h
9.66619571865833	-5.54738539113189	2.05532873404429	c
2.53898834918278	-5.28712236718645	2.52804746445484	c
1.39679332984016	-4.01625424979968	1.31064888719814	h
6.25974422138325	-5.61366225031452	-0.72614249948839	c
4.71408535321068	-5.98324593045388	-3.09128706587488	c
2.88154781664118	-4.96800279170740	-3.00393038372039	h
12.30933662601203	1.19756897138425	-4.31995140986669	c
7.38963978621390	-5.23944465591375	3.50193687785797	c
8.97209559311206	-5.73888994032242	-0.56843252646079	c
10.09205761769739	-5.46062808718058	-4.54111933310643	h
10.70361426045305	1.42783958134758	-5.65711135293939	h
10.80099513204133	1.79866980844467	6.81985523255070	h
8.53341447470485	5.54686124575055	-2.56393299926090	c
12.40052720321835	1.53624383986970	5.48099098034973	c
8.52361232581742	5.70476658694768	3.51233771561098	c
15.04172664977734	-0.93749939589688	0.58608552370308	c
12.21891580325081	-6.13224136930930	3.17501033020010	c
1.68607201323480	-7.20918061237603	2.37630926583023	h
2.27354445705637	-4.64448740699499	4.50638622623947	h
5.71422673135175	-5.30647789894586	-4.81097464171052	h
4.28104742655737	-8.02457546933797	-3.40491290845191	h
13.83446961806021	2.49507414867379	-4.98735009025426	h
13.03985380785974	-0.75912739769296	-4.54826004699686	h
7.23920212869817	-5.14693226274200	6.34915629083726	c
10.71445027225508	-6.35235275735060	-2.74141892386609	c
6.73703407517522	6.27582102269319	-1.75912464934565	h
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13.19571420646202	-0.37723486261889	5.82560998098257	h

13.88662202071938	2.92281481798170	6.04817970309768	h
8.08148746471601	4.94702743186312	5.42165276768907	h
9.72933262228424	7.41268898526871	3.79947979813189	h
6.71552091427262	6.35817593483019	2.66636949011545	h
14.98971841315059	-2.43992915686551	-0.88205867864648	h
16.74707820352734	0.23666818520361	0.17949735380108	h
15.37365351202298	-1.86727974511568	2.43328893995686	h
12.72714829817765	-4.86493870420881	4.77327980704864	h
12.24622503822068	-8.09847599762803	3.93900451929722	h
13.75815653116652	-6.00972781384585	1.75998086479728	h
8.98678736747743	-4.35349069704234	7.20417568562813	h
5.62705083120546	-3.98104311278902	7.02542144627622	h
6.98577755357907	-7.07337783167514	7.17263821548219	h
12.68596860440589	-5.72498594994042	-2.38433719497031	h
10.79238293505039	-8.42985437299640	-3.10185705094920	h

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**[ (Cp\*<sub>2</sub>Sm)<sub>2</sub>As<sub>2</sub> (CpMo (CO)<sub>2</sub>)<sub>2</sub> ]**

Scoord			
-7.67822831763027	-0.77361739080089	-0.71201103009942	sm
-4.25499598821472	0.82834179105763	-3.37589528473779	o
-4.37975886618336	0.41540003722498	2.35407794743414	o
-2.37543727111019	2.15094571457145	-3.50356558485119	c
-9.98642810064453	3.65143714878697	0.94380988049128	c
-11.73752288336594	1.86992578288272	-2.67225982370261	c
-11.64444495837250	1.63832309527893	1.71266249834913	c
-10.03496056278244	3.78971129749312	-1.76428239843330	c
-2.72660096014314	1.91884303080245	2.92157842915490	c
-5.19919967079436	-5.18319829810707	-1.86444506805206	c
-12.78084201710067	0.58455927282873	-0.51650404118690	c
-8.24816898654297	4.61428861374519	4.55340016812628	h
-9.57115601928058	-5.51190974063852	-2.17113563163011	c
-2.44872598957480	-5.06575819180736	-2.57778166302014	c
-1.37387761980691	-3.68187285599875	-1.42271169007007	h
-6.18563173626906	-5.55519697184082	0.63553464104161	c
-4.64850251786375	-5.93229060090807	3.00466016073194	c
-2.88185773337087	-4.80344062065570	2.98944981754636	h
-12.34815271559500	0.99790065145475	4.40204479323391	c
-7.29172259552599	-5.11797774593664	-3.59240645319532	c
-8.89257515198571	-5.74428782029447	0.45325266287252	c
-10.06451088257527	-5.57129817317156	4.41806001281046	h
-10.72994015697025	1.22051975237994	5.72562387615678	h
-10.96116265720113	1.86160743857215	-6.73554304171668	h
0.37882236815394	4.40238115983719	-4.07409384211061	mo
-8.73125442472717	5.49522858367288	2.70956565687328	c
-12.54277439115447	1.53699216830925	-5.38887315216246	c
-8.79964946637421	5.78602805336683	-3.37729302695430	c
-0.37816500126365	4.40193739980046	4.07425112519274	mo
-15.06356636356976	-1.11597350985973	-0.52586063744219	c
-12.09910882097026	-6.13553966742641	-3.32594538180561	c
-1.51496370391856	-6.93671694634429	-2.31640022310036	h
-2.19209323032754	-4.51672990049403	-4.58492353734919	h
-5.71329771933565	-5.39622248602720	4.73501701514822	h
-4.09285137968666	-7.95464529157679	3.23696090362443	h
-13.88513893434898	2.25387529376759	5.11985204971829	h
-13.04439166056797	-0.97520237259460	4.59008050323020	h
-7.12403863210642	-4.95881557190875	-6.43581071508449	c
-10.63299331996579	-6.45645758794221	2.59726579067891	c

-2.14323683014585	6.78490752537472	-0.20519570296646	as
2.14388012095660	6.78586634326089	0.20549364304009	as
2.72639825587271	1.91846578637093	-2.92180780405794	c
2.23756352725977	7.84419941759530	-6.52152122674210	c
3.56755120834220	9.19873843486869	-5.68268532291318	h
-0.45110781179057	8.13366748125915	-6.65040362344199	c
-1.53471639610403	9.74544382379033	-5.91862640973567	h
0.59004577893740	4.30245359913792	-8.52699074960405	c
2.88045675363842	5.48288450465094	-7.67677437192815	c
4.79794466925818	4.72844227915747	-7.92204302768117	h
-1.47015141248598	5.95781211197879	-7.89245826044055	c
-3.47338706575094	5.63108929331942	-8.32578782341186	h
-6.95468549966842	6.28469846345412	1.91724042518745	h
-10.01061248320237	7.12142318838779	3.12445931320704	h
-13.29752905445736	-0.38671091420303	-5.76462614658654	h
-14.06412656808184	2.90082165175681	-5.91683466612853	h
-8.30755276670581	5.06851205253899	-5.28957874827929	h
-10.08967501455162	7.43227648744013	-3.65755281316791	h
-7.03106193920579	6.52332946511143	-2.51759898954506	h
2.37559817281601	2.14976497188979	3.50417804915564	c
-2.23877644393080	7.84383243519542	6.51968938351218	c
-3.56857181545260	9.19790838529175	5.67988553315229	h
0.44977343062245	8.13394794431504	6.65004922155013	c
1.53352142993949	9.74573433883998	5.91833175854933	h
-0.59151286512487	4.30305854605847	8.52711718030619	c
-2.88174062489848	5.48272505695199	7.67534315650753	c
-4.79907650312398	4.72782013658367	7.91992057352187	h
1.46867287226136	5.95867568889339	7.89327551487483	c
3.47189799959648	5.63268387141185	8.32758853258836	h
-14.95755677192454	-2.64586550873887	0.91035903677228	h
-16.79831712996737	0.00072798553774	-0.08282898109671	h
-15.38358845121998	-2.01653384738305	-2.38945331619921	h
-12.63437328261569	-4.83618793155626	-4.88934887190245	h
-12.06545021850398	-8.07806314945327	-4.14802994316774	h
-13.64970211276940	-6.10016408408273	-1.91822625624178	h
-8.88783978450956	-4.19618837212028	-7.28539110058552	h
-5.54196723379510	-3.73264573565542	-7.07457157341066	h
-6.81129226992142	-6.85896666371078	-7.29872632676297	h
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-10.63639304475595	-8.54096050628219	2.92368452517065	h
7.67854936701042	-0.77314003248441	0.71221777039072	sm
4.37985160274630	0.41440541091060	-2.35464613134040	o
0.44913805704790	2.51241245806841	-9.56521731077978	h
4.25568206782340	0.82719920901458	3.37694166015518	o
-0.45062632687623	2.51325372383212	9.56591996418513	h
9.98742274362851	3.65164183640591	-0.94364970013324	c
11.73823103536210	1.86955577122133	2.67233505616435	c
11.64509148787167	1.63827943952740	-1.71262560399226	c
10.03604986660450	3.78976185637886	1.76449962224057	c
5.19910914930123	-5.18235080462211	1.86453557965827	c
12.78122893071782	0.58410634607523	0.51646870218496	c
8.24877924429551	4.61474894886477	-4.55309530633702	h
9.57103695881336	-5.51158383706374	2.17117695489194	c
2.44857205046702	-5.06462091817834	2.57784521893478	c
1.37424154579505	-3.67991206920059	1.42319705461175	h
6.18549530079661	-5.55432735425855	-0.63547954025934	c
4.64825922991027	-5.93108069486738	-3.00467085085014	c
2.88185528461053	-4.80178411848487	-2.98932718588224	h
12.34854432787931	0.99791874554942	-4.40215334071144	c

7.29165495962623	-5.11746440014341	3.59248611959287	c
8.89241139199583	-5.74374988617693	-0.45321381598545	c
10.06428004994744	-5.57058163113816	-4.41804518427878	h
10.73013505613732	1.22093484744174	-5.72556824616403	h
10.96166847550311	1.86123550450688	6.73559438349864	h
8.73207599223265	5.49569061823058	-2.70923088341714	c
12.54337226503293	1.53632502653278	5.38901728039764	c
8.80074945973060	5.78613424162929	3.37772952203223	c
15.06386915820650	-1.11664054827009	0.52567053184839	c
12.09892211540430	-6.13567713077602	3.32600030331293	c
1.51450125226742	-6.93529111172543	2.31573870769674	h
2.19207778949835	-4.51609469915438	4.58516973005322	h
5.71316792501932	-5.39495549358556	-4.73498568976264	h
4.09227647325976	-7.95331698400819	-3.23710537413223	h
13.88568504728185	2.25373517447690	-5.11996014756318	h
13.04440119785253	-0.97532712124085	-4.59040001019631	h
7.12393856322044	-4.95822248571318	6.43595124690767	c
10.63274789142469	-6.45598582257345	-2.59732786733398	c
6.95536085513912	6.28477490079714	-1.91657544109864	h
10.01134064502020	7.12200595938569	-3.12397729138930	h
13.29764170547698	-0.38760342879696	5.76473390059276	h
14.06499847712470	2.89984097404713	5.91707320863735	h
8.30835745075866	5.06827218220857	5.28989494880605	h
10.09083306776776	7.43233141402149	3.65816908020049	h
7.03207440401308	6.52342720458751	2.51792529888278	h
14.95770106402964	-2.64644822316768	-0.91065459280579	h
16.79865625811535	0.00003152991763	0.08264438253573	h
15.38388221726235	-2.01733754464290	2.38921935923808	h
12.63436055661373	-4.83639637357572	4.88943633609325	h
12.06488858043229	-8.07821465246060	4.14805437348612	h
13.64953925183266	-6.10052367670712	1.91827787158938	h
8.88789670862420	-4.19585880522469	7.28553472923850	h
5.54209402780932	-3.73158947205333	7.07454062366235	h
6.81075858432903	-6.85837568507001	7.29892628882088	h
12.62179246020345	-5.89676334152338	-2.22783407658114	h
10.63591538716890	-8.54046857996392	-2.92391719356334	h

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**[ (Cp\*<sub>2</sub>Sm)<sub>2</sub>Sb<sub>2</sub> (CpMo (CO)<sub>2</sub>)<sub>2</sub> ]**

Scoord

-7.69897106839056	-0.67584863990343	-0.73007612526701	sm
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-4.38514752497266	0.56939904695288	2.32707283591345	o
-2.42262503026516	2.37519618485328	-3.53573105618317	c
-10.24321573735476	3.56173934691955	1.09612440075850	c
-11.96871872239513	1.76459878618704	-2.52437172952309	c
-11.75074268734446	1.42517297618339	1.84660903871544	c
-10.37054450255754	3.76804748595766	-1.60497655590355	c
-2.73864554808057	2.06410536810430	2.94446530496133	c
-5.05903682443352	-4.94579273775069	-1.99679399554579	c
-12.88106416145273	0.36521026849119	-0.38151080020017	c
-8.30873594075096	4.49594341688918	4.61794558518966	h
-9.40922112680644	-5.42835724311758	-2.40043400467800	c
-2.30337545869034	-4.71174103149723	-2.65233077490385	c
-1.30697418260378	-3.28367910735436	-1.48073472302696	h
-6.07660412671894	-5.44643454703276	0.46814761595488	c
-4.57579824615010	-5.84900560476723	2.85616173365410	c
-2.94450503284599	-4.53966148121108	3.00139251265292	h

-12.34584288726320	0.68288833745697	4.53618349352951	c
-7.12096218794378	-4.89251320105782	-3.76073614592510	c
-8.76969960934912	-5.73714782474666	0.22501576880665	c
-10.08646739125253	-5.72112193643169	4.15328585592833	h
-10.69552770074437	0.92537232744096	5.81641474955233	h
-11.29292038095772	1.89391773664998	-6.60428395479753	h
0.40874911248899	4.50709647776242	-4.23533034657897	mo
-9.08776938576627	5.42901831193066	2.90481631804264	c
-12.82685684593698	1.47192901379507	-5.22934340019177	c
-9.34377919905469	5.88215628114137	-3.21388946429885	c
-0.40901507981643	4.50709841603318	4.23561259816815	mo
-15.06725422816836	-1.45748549331346	-0.38589598418656	c
-11.88578948216147	-6.10467202815212	-3.63486927942362	c
-1.30370325516910	-6.54361350155562	-2.36655324649775	h
-2.02823543403665	-4.15598297807936	-4.65498754920721	h
-5.74961045583167	-5.57649565611865	4.57690518641562	h
-3.80606191448863	-7.81100971777148	2.95041920289926	h
-13.90162392259135	1.86262771870836	5.33818435114444	h
-12.96712599490534	-1.31805190110667	4.68523225792675	h
-6.91091858613856	-4.61714749689320	-6.59212816791128	c
-10.50696513623711	-6.62911417273325	2.30336657937225	c
-2.50599897340993	7.16098314403511	-0.23172070725410	sb
2.50528963883180	7.16100518688539	0.23210574217833	sb
2.73773419799279	2.06378851826116	-2.94431682748135	c
2.27704888962847	7.80320330010261	-6.85489297833822	c
3.58855152391316	9.22784138789376	-6.10763799640484	h
-0.41136143232272	8.06384267670149	-7.03853800781426	c
-1.51431486399543	9.71866512075679	-6.44560055425879	h
0.68169164228559	4.12422070280336	-8.65184163467626	c
2.95262327987522	5.37678339306946	-7.84856290142752	c
4.87950570647019	4.62697896312877	-8.02519668741315	h
-1.39759499317779	5.80154052895481	-8.15093043503240	c
-3.39172193392998	5.43291362067180	-8.59265869519515	h
-7.51970946672418	6.52002736757029	2.03537407317089	h
-10.53018483701748	6.82002709472097	3.56591442824509	h
-13.51708159676729	-0.46824959527006	-5.63986244090941	h
-14.41145745917954	2.79002842617592	-5.68326945176370	h
-8.71258764302290	5.21350527169051	-5.10355688929176	h
-10.81716814553331	7.35419184333579	-3.55093263883027	h
-7.70120124319480	6.83743712756571	-2.32087582342117	h
2.42219947643000	2.37462337718699	3.53614295165674	c
-2.27683182692453	7.80350271805696	6.85534822721257	c
-3.58780838013389	9.22863081725393	6.10814118027968	h
0.41163169226733	8.06335838677260	7.03930210848125	c
1.51527056352900	9.71798067316691	6.44665535941936	h
-0.68283638103330	4.12381019370164	8.65201557794852	c
-2.95325946071266	5.37717511248532	7.84861890189004	c
-4.88036125116820	4.62801546221240	8.02504332337593	h
1.39703263693705	5.80057507439317	8.15158089940235	c
3.39118052983272	5.43116026958257	8.59342585331992	h
-14.84477830639881	-3.01624164663195	1.00361976219358	h
-16.84747625500437	-0.44756442780197	0.12778834384985	h
-15.38445223778249	-2.32195699084498	-2.26684081842123	h
-12.47222500053156	-4.73366004300470	-5.11677388571674	h
-11.73813447179156	-7.98275131415653	-4.58460984402184	h
-13.45201385621630	-6.24821494854652	-2.25152878449239	h
-8.68517638090909	-3.88017540453715	-7.44295908313062	h
-5.36075297446780	-3.31547514149535	-7.15345986604463	h
-6.52129528586861	-6.47155889538056	-7.52093434889963	h

-12.52368419249052	-6.24801458403614	1.87052178293850	h
-10.32951775658888	-8.70945434125438	2.60608563680054	h
7.69913329336100	-0.67616096812497	0.73033000123397	sm
4.38487911450852	0.56905468007574	-2.32664970573287	o
0.56856492507641	2.27356556908179	-9.58187402364820	h
4.33689537734198	1.10080231179679	3.37942284998791	o
-0.57028507902736	2.27295816912961	9.58192351184858	h
10.24270834702934	3.56152901527869	-1.09662337883800	c
11.96895840120882	1.76460687780351	2.52365804120052	c
11.75016135019351	1.42492600402160	-1.84725922227697	c
10.37053371365969	3.76796573209734	1.60449280468994	c
5.05951316828909	-4.94600903948166	1.99761959997956	c
12.88091471371970	0.36511907439385	0.38070205087887	c
8.30750478796233	4.49586761902833	-4.61819606117125	h
9.40980611080494	-5.42849343861540	2.40047353608640	c
2.30386090975030	-4.71182993471847	2.65358033837285	c
1.30779577494831	-3.28249168658213	1.48315202150184	h
6.07667516055566	-5.44662865235882	-0.46751305389279	c
4.57549191744203	-5.84890921150133	-2.85540716302401	c
2.94434334262174	-4.53927972761104	-3.00029957176669	h
12.34468557384855	0.68252562814491	-4.53699173116299	c
7.12177384748371	-4.89271375379633	3.76117886939491	c
8.76981285570076	-5.73734186088963	-0.22485355184782	c
10.08581531704051	-5.72123155430487	-4.15342390141328	h
10.69398110129425	0.92499446834000	-5.81681241884516	h
11.29370773318389	1.89423104804573	6.60370387845156	h
9.08712613395445	5.42898980493948	-2.90524703420843	c
12.82755359224616	1.47211448948301	5.22857988296652	c
9.34401195222687	5.88226294831259	3.21359772314238	c
15.06725724202942	-1.45746857465586	0.38479477681492	c
11.88660644688703	-6.10481152747575	3.63453284789046	c
1.30375638937228	-6.54324417816852	2.36644179085350	h
2.02909340087172	-4.15747240870345	4.65673484446363	h
5.74915653964193	-5.57631226071697	-4.57629170478945	h
3.80554459863796	-7.81083620014950	-2.94972731532848	h
13.90032589288436	1.86225655591847	-5.33936705020598	h
12.96590253974183	-1.31847395802751	-4.68611834117524	h
6.91222684934244	-4.61719229555687	6.59266786393939	c
10.50671085788103	-6.62928304319791	-2.30357540280482	c
7.51930874481729	6.52021008036991	-2.03535797909677	h
10.52969846565782	6.81976699552990	-3.56664227658706	h
13.51779276914000	-0.46809954412871	5.63915101230992	h
14.41226327995600	2.79026703464849	5.68214796254858	h
8.71322646296556	5.21353730936845	5.10351802537003	h
10.81747937407932	7.35441287909073	3.55018236575899	h
7.70101209475190	6.83734834544332	2.32080757623428	h
14.84462186588559	-3.01630303725589	-1.00465695423515	h
16.84734396636424	-0.44742101133252	-0.12923011979465	h
15.38481234678876	-2.32184321390478	2.26576350326590	h
12.47324198153071	-4.73374589354223	5.11636967708585	h
11.73910641409598	-7.98290885910682	4.58430209233882	h
13.45263230808724	-6.24831604173023	2.25091892606847	h
8.68667062585904	-3.88010221331881	7.44314138303545	h
5.36208938831488	-3.31542515599341	7.15416845794803	h
6.52278397114760	-6.47158953027911	7.52164315438673	h
12.52353501137584	-6.24814107552923	-1.87110638145010	h
10.32921551277306	-8.70963884691168	-2.60627319265705	h

Send



[ (Cp\*<sub>2</sub>Sm)<sub>2</sub>P<sub>4</sub>(CpMo(CO)<sub>2</sub>)<sub>2</sub> ]

\$coord

-1.78318930514332	-3.30200957414324	7.16763886349667	sm
0.83938174338763	-1.81153844775478	2.21085332064709	p
-4.07709212774888	0.45731218354638	5.74759536805681	o
-3.95010901976866	1.75315603956886	3.85598093479960	c
-0.40795397338395	-2.18453943025486	12.07873698785783	c
0.07770128321246	0.09986174230099	10.69051279011860	c
2.17575650589761	-0.34400293845232	9.03135901435163	c
2.96862495906891	-2.92337806925662	9.35890419440760	c
1.39450970367666	-4.05754161134582	11.26034567740833	c
-2.17265642986943	-2.37553255196255	14.31020805081359	c
-4.06896667688130	-1.54658916540217	13.92783047454714	h
-5.01166817180806	-7.02416867477306	9.04747113422561	c
-6.60112232592085	-5.24101975043352	7.74965263201640	c
-6.09346984423898	-5.44102773515431	5.09040867286935	c
-4.16669815937705	-7.31732441659832	4.74387445190720	c
-3.47367795887806	-8.28311311288499	7.19037144678284	c
-6.30151262952021	-3.78758117624112	1.31866403056142	h
-3.35980923432758	-8.37410012918407	2.22500965481500	c
-1.61343921050214	-9.52597021245538	2.37979837258176	h
-0.10076073139300	-10.56145718230255	6.39996945398965	h
0.91585050987271	2.52623233084345	1.44244978336300	p
-0.91585050987271	-2.52623233084345	-1.44244978336300	p
3.74022089304202	-3.94719297475086	-1.03630980118932	mo
-3.74022089304202	3.94719297475086	1.03630980118932	mo
-1.20205527705110	2.60676913646137	11.13108939159972	c
3.54037090653826	1.65408925850197	7.53178116228782	c
5.24884940984899	-4.13737352952838	8.15038245633127	c
1.89023170756321	-6.58040263120611	12.48852125013313	c
-1.39286980806141	-1.33462027378946	15.97121255222883	h
-2.46724935394189	-4.35912978906613	14.91622286173705	h
-5.32944873433165	-7.81797217415682	11.76385801668370	c
-8.63777003844294	-3.63944411794481	8.93982046783552	c
-7.51305364711749	-4.14418642540478	2.99424076809535	c
-1.77773474027829	-10.52665089473395	7.66982352044432	c
-3.02251941421462	-6.87407994909831	0.78811952497691	h
-4.85304170093745	-9.64294039780382	1.44062560932387	h
-0.83938174338763	1.81153844775478	-2.21085332064709	p
3.95010901976866	-1.75315603956886	-3.85598093479960	c
6.11644642827739	-1.64210494389267	0.64981374771606	c
2.44706387876696	-8.30585347566677	-1.64457052819649	c
0.47707041690388	-8.83783735250669	-2.01281512364543	h
3.64161071621466	-8.20056137347696	0.78270319358570	c
2.74719105875373	-8.63012773877591	2.60471756982906	h
6.21268573044872	-7.45054244117200	0.42082639919161	c
7.63766326814662	-7.22602129578714	1.91304621352235	h
6.62606787976016	-7.09471170839160	-2.23976376905471	c
4.28506536004158	-7.62991923430946	-3.51417063432596	c
3.97931959805432	-7.59447061429995	-5.56608942177062	h
-6.11644642827739	1.64210494389267	-0.64981374771606	c
-2.44706387876696	8.30585347566677	1.64457052819649	c
-0.47707041690388	8.83783735250669	2.01281512364543	h
-3.64161071621466	8.20056137347696	-0.78270319358570	c
-2.74719105875373	8.63012773877591	-2.60471756982906	h
-6.21268573044872	7.45054244117200	-0.42082639919161	c
-7.63766326814662	7.22602129578714	-1.91304621352235	h
-6.62606787976016	7.09471170839160	2.23976376905471	c

-4.28506536004158	7.62991923430946	3.51417063432596	c
-3.97931959805432	7.59447061429995	5.56608942177062	h
-0.28002543342829	3.66768437535914	12.70512977521019	h
-3.22667841315263	2.39036180108854	11.64985572369383	h
-1.11961022520536	3.83644784384298	9.43193776351306	h
4.71739952880760	0.84819085104369	5.99370783716648	h
4.83664334253267	2.75857708730358	8.77737499803404	h
2.23256236147107	3.03991339732728	6.64472157963781	h
5.03583437681593	-6.22118700295160	7.97200441008728	h
6.98907456220912	-3.80890437628144	9.29748157809236	h
5.62851101754803	-3.37577098424482	6.23112892946910	h
0.18354497833301	-7.37091766145536	13.41626328270377	h
3.37083514102358	-6.40798274928285	13.98276460288106	h
2.58404876488124	-8.01869176436123	11.12354267506801	h
-3.55901692263565	-8.56324169167550	12.60780676679408	h
-6.76395270957273	-9.35925043880511	11.91535302715851	h
-6.00309693998178	-6.24992099783403	12.98418114252139	h
-8.15388959476659	-3.05824961848852	10.90145385753591	h
-10.46939008487750	-4.68037236071291	9.05446231941977	h
-9.00103544662392	-1.88883428039659	7.83814186803382	h
-8.30826305572972	-2.29750324770314	3.59236759424072	h
-9.13469548777330	-5.32492459589452	2.33929002861995	h
-2.80192909185895	-12.34462280719612	7.35456262319836	h
-1.06117803236533	-10.56719374272989	9.64124272919426	h
1.78318930514332	3.30200957414324	-7.16763886349667	sm
4.07709212774888	-0.45731218354638	-5.74759536805681	o
7.64389233402383	-0.38916539425047	1.66061832942548	o
8.42717669099174	-6.59800891338251	-3.14088427029620	h
-7.64389233402383	0.38916539425047	-1.66061832942548	o
-8.42717669099174	6.59800891338251	3.14088427029620	h
0.40795397338395	2.18453943025486	-12.07873698785783	c
-0.07770128321246	-0.09986174230099	-10.69051279011860	c
-2.17575650589761	0.34400293845232	-9.03135901435163	c
-2.96862495906891	2.92337806925662	-9.35890419440760	c
-1.39450970367666	4.05754161134582	-11.26034567740833	c
2.17265642986943	2.37553255196255	-14.31020805081359	c
4.06896667688130	1.54658916540217	-13.92783047454714	h
5.01166817180806	7.02416867477306	-9.04747113422561	c
6.60112232592085	5.24101975043352	-7.74965263201640	c
6.09346984423898	5.44102773515431	-5.09040867286935	c
4.16669815937705	7.31732441659832	-4.74387445190720	c
3.47367795887806	8.28311311288499	-7.19037144678284	c
6.30151262952021	3.78758117624112	-1.31866403056142	h
3.35980923432758	8.37410012918407	-2.22500965481500	c
1.61343921050214	9.52597021245538	-2.37979837258176	h
0.10076073139300	10.56145718230255	-6.39996945398965	h
1.20205527705110	-2.60676913646137	-11.13108939159972	c
-3.54037090653826	-1.65408925850197	-7.53178116228782	c
-5.24884940984899	4.13737352952838	-8.15038245633127	c
-1.89023170756321	6.58040263120611	-12.48852125013313	c
1.39286980806141	1.33462027378946	-15.97121255222883	h
2.46724935394189	4.35912978906613	-14.91622286173705	h
5.32944873433165	7.81797217415682	-11.76385801668370	c
8.63777003844294	3.63944411794481	-8.93982046783552	c
7.51305364711749	4.14418642540478	-2.99424076809535	c
1.77773474027829	10.52665089473395	-7.66982352044432	c
3.02251941421462	6.87407994909831	-0.78811952497691	h
4.85304170093745	9.64294039780382	-1.44062560932387	h
0.28002543342829	-3.66768437535914	-12.70512977521019	h

3.22667841315263	-2.39036180108854	-11.64985572369383	h
1.11961022520536	-3.83644784384298	-9.43193776351306	h
-4.71739952880760	-0.84819085104369	-5.99370783716648	h
-4.83664334253267	-2.75857708730358	-8.77737499803404	h
-2.23256236147107	-3.03991339732728	-6.64472157963781	h
-5.03583437681593	6.22118700295160	-7.97200441008728	h
-6.98907456220912	3.80890437628144	-9.29748157809236	h
-5.62851101754803	3.37577098424482	-6.23112892946910	h
-0.18354497833301	7.37091766145536	-13.41626328270377	h
-3.37083514102358	6.40798274928285	-13.98276460288106	h
-2.58404876488124	8.01869176436123	-11.12354267506801	h
3.55901692263565	8.56324169167550	-12.60780676679408	h
6.76395270957273	9.35925043880511	-11.91535302715851	h
6.00309693998178	6.24992099783403	-12.98418114252139	h
8.15388959476659	3.05824961848852	-10.90145385753591	h
10.46939008487750	4.68037236071291	-9.05446231941977	h
9.00103544662392	1.88883428039659	-7.83814186803382	h
8.30826305572972	2.29750324770314	-3.59236759424072	h
9.13469548777330	5.32492459589452	-2.33929002861995	h
2.80192909185895	12.34462280719612	-7.35456262319836	h
1.06117803236533	10.56719374272989	-9.64124272919426	h

\$end

**[ (Cp\*<sub>2</sub>Sm)<sub>2</sub>As<sub>4</sub> (CpMo (CO)<sub>2</sub>)<sub>2</sub> ]**

\$coord

-1.67074225859131	-3.57202644198630	7.31005257604808	sm
1.08629884302212	-2.10347864415570	2.28090010249214	as
-4.05951727334769	0.10291635673187	5.90195748440993	o
-4.00296297578548	1.54719384568103	4.11389483733735	c
-0.55284173117168	-1.69157843735277	12.02630895593694	c
0.53296546165556	0.12639360492628	10.32176584327659	c
2.64115499841781	-1.03864481863425	9.07523071586693	c
2.84350146867663	-3.59314545594962	9.98374640800847	c
0.91073108044680	-3.98252200351637	11.85002927119108	c
-2.62875124961280	-1.15079524794567	13.90776749447352	c
-4.09272569790213	0.14236044721159	13.12920231360851	h
-4.82227552559529	-7.38621603220103	9.10070853487920	c
-6.42395542029837	-5.68984372431032	7.70521083415512	c
-5.79386010619132	-5.90480064189028	5.07482949216362	c
-3.77289808268171	-7.70151294733448	4.84412947056194	c
-3.15378242787162	-8.60738293012259	7.33283999496193	c
-5.88033321471450	-4.18093257372713	1.32320516342564	h
-2.79013119242207	-8.75354831040690	2.38676494072799	c
-0.89858752907096	-9.63651835755186	2.60258961379115	h
0.36157625408780	-10.70290330494094	6.69760025728240	h
0.96762705302857	2.69497972190906	1.71958615063153	as
-0.96762705302857	-2.69497972190906	-1.71958615063153	as
3.96847218056465	-3.93989276364613	-1.45508406178349	mo
-3.96847218056465	3.93989276364613	1.45508406178349	mo
-0.22604178454568	2.86302005553786	10.09489116295379	c
4.57198043601519	0.30465071002319	7.47045454490632	c
4.93014452794467	-5.42604414425612	9.33548473468867	c
0.81865861610352	-6.17831634623733	13.66171891542897	c
-1.87181295672570	-0.22416823405767	15.64552019263348	h
-3.60915231017267	-2.89923587492986	14.53437095617117	h
-5.23787693200988	-8.13019641158141	11.81877044507203	c
-8.57157618811327	-4.16701723841011	8.79937791209640	c
-7.16840120074423	-4.68083066705208	2.90485751969557	c

-1.35860162276418	-10.74949095623181	7.90654525771610	c
-2.64428259470701	-7.28077502143722	0.89138033641360	h
-4.07768731303790	-10.25329383038213	1.64567432673259	h
-1.08629884302212	2.10347864415570	-2.28090010249214	as
4.00296297578548	-1.54719384568103	-4.11389483733735	c
6.38242465331540	-1.67334271342804	0.24281492597432	c
2.74450285586840	-8.28932967504499	-2.16729900214415	c
0.76997958703669	-8.88308624215980	-2.39121058636971	h
4.14925454837950	-8.27892530400316	0.14701083748460	c
3.43582042944635	-8.83458537194492	2.01423203267513	h
6.65469366589097	-7.42306170899789	-0.39636134225539	c
8.19876766819848	-7.23009350967711	0.97771846721871	h
6.82199083418840	-6.91305857342786	-3.05788248476163	c
4.39139784554350	-7.45309183590533	-4.15200168532408	c
3.90449623731051	-7.32481401580998	-6.16457465871186	h
-6.38242465331540	1.67334271342804	-0.24281492597432	c
-2.74450285586840	8.28932967504499	2.16729900214415	c
-0.76997958703669	8.88308624215980	2.39121058636971	h
-4.14925454837950	8.27892530400316	-0.14701083748460	c
-3.43582042944635	8.83458537194492	-2.01423203267513	h
-6.65469366589097	7.42306170899789	0.39636134225539	c
-8.19876766819848	7.23009350967711	-0.97771846721871	h
-6.82199083418840	6.91305857342786	3.05788248476163	c
-4.39139784554350	7.45309183590533	4.15200168532408	c
-3.90449623731051	7.32481401580998	6.16457465871186	h
0.86866919390772	4.06918179504626	11.43582240635534	h
-2.25965076173853	3.15882178344993	10.52605572022912	h
0.11786222453470	3.62259760064177	8.16581436692709	h
5.56064653373770	-0.98056716186087	6.13911841397577	h
6.05815461128620	1.18302962337507	8.68490648705436	h
3.73705158089253	1.85738920935867	6.32738473789822	h
4.33654717496732	-7.42600537036787	9.59118547260536	h
6.62237949621648	-5.13872215046163	10.56322983344189	h
5.58362873520197	-5.20782425030127	7.34928662107951	h
-1.01358434731331	-6.30261135834362	14.67001231037389	h
2.31393187316285	-5.97284289888349	15.13695597372505	h
1.15574653102980	-8.02977011897993	12.72627779071609	h
-3.60983841562023	-9.17988694397071	12.61720339811103	h
-6.91898507496937	-9.39474237968520	11.98225385557955	h
-5.61052373995652	-6.48519697483237	13.07275875788773	h
-8.17394060416286	-3.52666364474619	10.76200899269946	h
-10.35216498201193	-5.29644322551709	8.88354690118174	h
-8.98786832423022	-2.45782322939604	7.65258517889392	h
-8.15333237402849	-2.92170055307073	3.48198134637663	h
-8.63785579738847	-5.97319410628217	2.11636492998301	h
-2.26751578366588	-12.62591376654710	7.58012196458057	h
-0.71189493741426	-10.73076213981521	9.90369947178984	h
1.67074225859131	3.57202644198630	-7.31005257604808	sm
4.05951727334769	-0.10291635673187	-5.90195748440993	o
7.95890678412235	-0.44693132862878	1.20770964161289	o
8.52235211007814	-6.31273296985642	-4.08252292722737	h
-7.95890678412235	0.44693132862878	-1.20770964161289	o
-8.52235211007814	6.31273296985642	4.08252292722737	h
0.55284173117168	1.69157843735277	-12.02630895593694	c
-0.53296546165556	-0.12639360492628	-10.32176584327659	c
-2.64115499841781	1.03864481863425	-9.07523071586693	c
-2.84350146867663	3.59314545594962	-9.98374640800847	c
-0.91073108044680	3.98252200351637	-11.85002927119108	c
2.62875124961280	1.15079524794567	-13.90776749447352	c

4.09272569790213	-0.14236044721159	-13.12920231360851	h
4.82227552559529	7.38621603220103	-9.10070853487920	c
6.42395542029837	5.68984372431032	-7.70521083415512	c
5.79386010619132	5.90480064189028	-5.07482949216362	c
3.77289808268171	7.70151294733448	-4.84412947056194	c
3.15378242787162	8.60738293012259	-7.33283999496193	c
5.88033321471450	4.18093257372713	-1.32320516342564	h
2.79013119242207	8.75354831040690	-2.38676494072799	c
0.89858752907096	9.63651835755186	-2.60258961379115	h
-0.36157625408780	10.70290330494094	-6.69760025728240	h
0.22604178454568	-2.86302005553786	-10.09489116295379	c
-4.57198043601519	-0.30465071002319	-7.47045454490632	c
-4.93014452794467	5.42604414425612	-9.33548473468867	c
-0.81865861610352	6.17831634623733	-13.66171891542897	c
1.87181295672570	0.22416823405767	-15.64552019263348	h
3.60915231017267	2.89923587492986	-14.53437095617117	h
5.23787693200988	8.13019641158141	-11.81877044507203	c
8.57157618811327	4.16701723841011	-8.79937791209640	c
7.16840120074423	4.68083066705208	-2.90485751969557	c
1.35860162276418	10.74949095623181	-7.90654525771610	c
2.64428259470701	7.28077502143722	-0.89138033641360	h
4.07768731303790	10.25329383038213	-1.64567432673259	h
-0.86866919390772	-4.06918179504626	-11.43582240635534	h
2.25965076173853	-3.15882178344993	-10.52605572022912	h
-0.11786222453470	-3.62259760064177	-8.16581436692709	h
-5.56064653373770	0.98056716186087	-6.13911841397577	h
-6.05815461128620	-1.18302962337507	-8.68490648705436	h
-3.73705158089253	-1.85738920935867	-6.32738473789822	h
-4.33654717496732	7.42600537036787	-9.59118547260536	h
-6.62237949621648	5.13872215046163	-10.56322983344189	h
-5.58362873520197	5.20782425030127	-7.34928662107951	h
1.01358434731331	6.30261135834362	-14.67001231037389	h
-2.31393187316285	5.97284289888349	-15.13695597372505	h
-1.15574653102980	8.02977011897993	-12.72627779071609	h
3.60983841562023	9.17988694397071	-12.61720339811103	h
6.91898507496937	9.39474237968520	-11.98225385557955	h
5.61052373995652	6.48519697483237	-13.07275875788773	h
8.17394060416286	3.52666364474619	-10.76200899269946	h
10.35216498201193	5.29644322551709	-8.88354690118174	h
8.98786832423022	2.45782322939604	-7.65258517889392	h
8.15333237402849	2.92170055307073	-3.48198134637663	h
8.63785579738847	5.97319410628217	-2.11636492998301	h
2.26751578366588	12.62591376654710	-7.58012196458057	h
0.71189493741426	10.73076213981521	-9.90369947178984	h

\$end

**[ (Cp\*<sub>2</sub>Sm)<sub>2</sub>Sb<sub>4</sub>(CpMo(CO)<sub>2</sub>)<sub>2</sub> ]**

\$coord

-1.68828179549622	-3.77093926924872	7.76539518969793	sm
1.40373020157385	-2.55653461021697	2.42784869185162	sb
-3.89639702578690	-0.07404800534748	6.16538469269920	o
-3.93171000385678	1.51637876886283	4.49980215128170	c
-0.67989972384947	-1.75048760464140	12.44950490428663	c
0.57653888088139	-0.05920707260514	10.73103827583295	c
2.68012523480891	-1.37710450681590	9.63728325433996	c
2.71008248673173	-3.89853525145930	10.65529124981851	c
0.67699815933900	-4.11189869552847	12.44104160307789	c
-2.82080579232591	-1.03807619864156	14.19550013072626	c

-4.18437706409862	0.28171466689686	13.28946243380135	h
-4.94255064856586	-7.49522392187640	9.51640491290922	c
-6.45098158672522	-5.88604232770639	7.92789884265590	c
-5.64954830459526	-6.23745776881278	5.35950122865203	c
-3.60586414834834	-8.02726706751336	5.36132762653695	c
-3.15568877287386	-8.79683077751299	7.93078473067664	c
-5.60031116524212	-4.87216462729815	1.46006578891914	h
-2.42170598703923	-9.21280902468590	3.05579821027258	c
-0.46111191651442	-9.87286510312827	3.42407191381950	h
0.42790188989050	-10.85502438040541	7.67634895396639	h
1.24103244565777	2.98068238281689	2.11496134137798	sb
-1.24103244565777	-2.98068238281689	-2.11496134137798	sb
4.13971105643809	-4.10840233674956	-2.03253305833014	mo
-4.13971105643809	4.10840233674956	2.03253305833014	mo
-0.02682220280216	2.70167875047456	10.37480758885389	c
4.77675352069091	-0.19277772965463	8.11479793442684	c
4.74558371940154	-5.84550597718644	10.20748197490046	c
0.40725002966870	-6.20552222034233	14.35246876694171	c
-2.11182088400802	-0.07092831946894	15.93151144922203	h
-3.90965513434481	-2.71382331538701	14.84109803513494	h
-5.54698978464702	-8.09298018172198	12.23550362009982	c
-8.67898307359654	-4.33085846822328	8.79095134364676	c
-6.93139294069914	-5.15766627173934	3.05990449530255	c
-1.39522102156532	-10.89618012122032	8.72324345882874	c
-2.34902583462074	-7.88517902575007	1.42816024374582	h
-3.52240628672278	-10.90047731017118	2.42657190755069	h
-1.40373020157385	2.55653461021697	-2.42784869185162	sb
3.93171000385678	-1.51637876886283	-4.49980215128170	c
6.58641013888576	-1.86001766107658	-0.35542582523870	c
2.99476749266547	-8.40961542691620	-3.09519728791971	c
1.04240075183485	-9.05137807998664	-3.38056788376084	h
4.38894733132142	-8.54947982355113	-0.77829798658601	c
3.67393010015432	-9.27782880618056	1.02789317386424	h
6.87724981291881	-7.59442569059797	-1.23499404152252	c
8.41172251058403	-7.48178540694591	0.15884182301451	h
7.04248194592751	-6.86617745753718	-3.84985023383268	c
4.62839960602959	-7.37200324886496	-4.99585233759877	c
4.14553728994779	-7.09577785780687	-6.99471317584534	h
-6.58641013888576	1.86001766107658	0.35542582523870	c
-2.99476749266547	8.40961542691620	3.09519728791971	c
-1.04240075183485	9.05137807998664	3.38056788376084	h
-4.38894733132142	8.54947982355113	0.77829798658601	c
-3.67393010015432	9.27782880618056	-1.02789317386424	h
-6.87724981291881	7.59442569059797	1.23499404152252	c
-8.41172251058403	7.48178540694591	-0.15884182301451	h
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-4.62839960602959	7.37200324886496	4.99585233759877	c
-4.14553728994779	7.09577785780687	6.99471317584534	h
1.08563247435999	3.90078998174740	11.70741527364035	h
-2.05504001343668	3.11596222416525	10.72673689471089	h
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5.73180044326944	-1.56278102033539	6.84172229714948	h
6.26388316309214	0.58756166268178	9.39369176608325	h
4.11099070493279	1.40416222940307	6.92247031553395	h
4.04859972676471	-7.80500201259881	10.50846859115922	h
6.37675998515300	-5.57563196638242	11.51962507143639	h
5.52019102720423	-5.74658053251113	8.25598255012378	h
-1.48654735773806	-6.23083057354567	15.24791706016974	h
1.81290738995785	-5.95766916151409	15.90713661968389	h

0.75211439650116	-8.11046068793287	13.53631159871314	h
-4.00478321867437	-9.14923972297282	13.18118820155460	h
-7.27405966097227	-9.29871808294088	12.35147461177668	h
-5.94249404890174	-6.37920135430635	13.38703184929274	h
-8.43101310619747	-3.60201309338675	10.74734406993608	h
-10.45594545521051	-5.46947093446582	8.79328295497328	h
-9.01647903504226	-2.67798553102955	7.54128570324877	h
-7.82816657193087	-3.30082292935179	3.44495086323548	h
-8.45755778951425	-6.44412468005512	2.37563196368716	h
-2.24877743339870	-12.79198877561821	8.36095471115043	h
-0.93946152093337	-10.82018761957916	10.77030174730071	h
1.68828179549622	3.77093926924872	-7.76539518969793	sm
3.89639702578690	0.07404800534748	-6.16538469269920	o
8.19245063793002	-0.62719741630321	0.55541013288706	o
8.73451939114348	-6.15694565431192	-4.81690632967977	h
-8.19245063793002	0.62719741630321	-0.55541013288706	o
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0.67989972384947	1.75048760464140	-12.44950490428663	c
-0.57653888088139	0.05920707260514	-10.73103827583295	c
-2.68012523480891	1.37710450681590	-9.63728325433996	c
-2.71008248673173	3.89853525145930	-10.65529124981851	c
-0.67699815933900	4.11189869552847	-12.44104160307789	c
2.82080579232591	1.03807619864156	-14.19550013072626	c
4.18437706409862	-0.28171466689686	-13.28946243380135	h
4.94255064856586	7.49522392187640	-9.51640491290922	c
6.45098158672522	5.88604232770639	-7.92789884265590	c
5.64954830459526	6.23745776881278	-5.35950122865203	c
3.60586414834834	8.02726706751336	-5.36132762653695	c
3.15568877287386	8.79683077751299	-7.93078473067664	c
5.60031116524212	4.87216462729815	-1.46006578891914	h
2.42170598703923	9.21280902468590	-3.05579821027258	c
0.46111191651442	9.87286510312827	-3.42407191381950	h
-0.42790188989050	10.85502438040541	-7.67634895396639	h
0.02682220280216	-2.70167875047456	-10.37480758885389	c
-4.77675352069091	0.19277772965463	-8.11479793442684	c
-4.74558371940154	5.84550597718644	-10.20748197490046	c
-0.40725002966870	6.20552222034233	-14.35246876694171	c
2.11182088400802	0.07092831946894	-15.93151144922203	h
3.90965513434481	2.71382331538701	-14.84109803513494	h
5.54698978464702	8.09298018172198	-12.23550362009982	c
8.67898307359654	4.33085846822328	-8.79095134364676	c
6.93139294069914	5.15766627173934	-3.05990449530255	c
1.39522102156532	10.89618012122032	-8.72324345882874	c
2.34902583462074	7.88517902575007	-1.42816024374582	h
3.52240628672278	10.90047731017118	-2.42657190755069	h
-1.08563247435999	-3.90078998174740	-11.70741527364035	h
2.05504001343668	-3.11596222416525	-10.72673689471089	h
-0.41604824208032	-3.37006541026679	-8.43157928761852	h
-5.73180044326944	1.56278102033539	-6.84172229714948	h
-6.26388316309214	-0.58756166268178	-9.39369176608325	h
-4.11099070493279	-1.40416222940307	-6.92247031553395	h
-4.04859972676471	7.80500201259881	-10.50846859115922	h
-6.37675998515300	5.57563196638242	-11.51962507143639	h
-5.52019102720423	5.74658053251113	-8.25598255012378	h
1.48654735773806	6.23083057354567	-15.24791706016974	h
-1.81290738995785	5.95766916151409	-15.90713661968389	h
-0.75211439650116	8.11046068793287	-13.53631159871314	h
4.00478321867437	9.14923972297282	-13.18118820155460	h
7.27405966097227	9.29871808294088	-12.35147461177668	h

5.94249404890174	6.37920135430635	-13.38703184929274	h
8.43101310619747	3.60201309338675	-10.74734406993608	h
10.45594545521051	5.46947093446582	-8.79328295497328	h
9.01647903504226	2.67798553102955	-7.54128570324877	h
7.82816657193087	3.30082292935179	-3.44495086323548	h
8.45755778951425	6.44412468005512	-2.37563196368716	h
2.24877743339870	12.79198877561821	-8.36095471115043	h
0.93946152093337	10.82018761957916	-10.77030174730071	h

\$end

**[ (Cp\*<sub>2</sub>Sm)<sub>2</sub>P<sub>2</sub>(CpMo(CO)<sub>2</sub>)<sub>4</sub> ]**

\$coord

1.90356771096552	-13.82780997794361	8.09476342636310	h
0.08211603739826	-14.84064661257787	10.74726516049071	h
1.38048805685841	-13.32252603750002	10.06847764601616	c
0.14066600509391	-10.76224934872484	10.25449320051928	c
3.12112714073763	-13.44563568616778	11.22890021337130	h
2.10092103571845	-6.38492721195089	8.10816518307474	sm
0.36397755568221	-9.00423850163181	12.32149567554782	c
-1.79590230504064	-9.84821097918944	8.58545183070928	c
0.74319789294018	-6.52469202831998	3.74223272256591	o
0.55003418650125	-2.08237533365746	7.85776959087659	o
-2.76620920143993	-7.53080472671945	9.60869241545036	c
-1.42345846429165	-6.99812233140537	11.90976645972374	c
6.59216882802418	-4.82037634554831	6.05057050544318	c
6.84076473563896	-7.51541582233935	6.30238340130979	c
7.00379813391204	-8.09846252828288	8.95238991760330	c
6.82264175374615	-5.76237564011030	10.33666568065411	c
6.58092828672068	-3.74123935246655	8.53862188205494	c
1.83608764974334	-9.42495948761311	14.72422425992915	c
-2.81861583239670	-11.23168764355240	6.31397022245109	c
-0.25727928763731	-6.08483265708702	1.71891498492067	c
-0.29230201746296	-0.25171524264328	6.75056986776583	c
-4.96431295425693	-6.05316826444658	8.56388044981953	c
-1.95912392458141	-4.84777179361637	13.70720622098204	c
6.53824524869152	-3.36425071824689	3.60665134948393	c
7.12885069276247	-9.37686703796370	4.16083061799160	c
7.73598238552281	-10.62901569377198	10.03742216574313	c
7.25185394811465	-5.41386037669422	13.13356051637119	c
6.58056496835013	-0.96160052064429	9.15856840234586	c
3.56000465712440	-10.58247200358889	14.41666378961370	h
0.66624843520293	-10.45040438081274	16.15008696860871	h
2.44097848920116	-7.62641155855568	15.62348206225414	h
-3.63401368721870	-9.91939057110418	4.89285809490443	h
-4.34878677136259	-12.57495669091537	6.86633580451222	h
-1.34383267568782	-12.36301345091215	5.33415558082296	h
-1.91600851905915	-5.60223195952037	-1.42085844039228	mo
-1.86880115641737	2.54846680460043	5.16194830389134	mo
-5.08692886285031	-4.14189784719259	9.42006932870557	h
-6.79599417477169	-7.02273111384835	8.95582499067169	h
-4.84033625755588	-5.80230031420761	6.47889888885508	h
-0.27097932351031	-4.32901275655627	14.84565845969101	h
-3.48015973446011	-5.35026951228932	15.07926092020742	h
-2.58655985693750	-3.11038990699165	12.70664522539090	h
5.87646683725665	-4.55422279525195	2.01240951781937	h
8.45853102389689	-2.65201202548841	3.09805537519307	h
5.25592197242283	-1.70048551107901	3.69376035480007	h
6.55348445903592	-11.31969118633847	4.71723412265538	h



9.13293780692740	-9.50294057619071	3.51500659684348	h
5.98152327819959	-8.84944279294513	2.48146967248079	h
7.07377134568825	-10.87798413203554	12.01364597343476	h
9.83457879965779	-10.84627351228467	10.07195621557833	h
6.98482102072954	-12.23570913505160	8.91382063016230	h
6.02755089525628	-3.91612612741192	13.95905796823409	h
9.24324353119316	-4.83747587048168	13.52644024980660	h
6.90497537295617	-7.17493145825401	14.21613815688883	h
5.59253492263073	0.16753223813006	7.69078661649376	h
8.54839723563512	-0.21431684668023	9.29918258877744	h
5.64257359737058	-0.54736469306986	10.99188015272151	h
-0.37370935043335	-1.32678159580865	-1.39778034103990	p
0.66894045389344	-7.98229728800628	-2.64639287463843	c
-5.70346594583326	-5.32631444775160	-4.08890125067730	c
-5.06678751805721	-7.92363168821016	-3.68749897968717	c
-5.29699868189718	-8.45229269008998	-1.03390220663511	c
-6.05424491780566	-6.15378296922591	0.20147689730432	c
-6.30282010700578	-4.23133975575233	-1.68912355291294	c
0.37367478591021	1.32691278654713	1.39725321626528	p
0.40306547991436	4.58516519979074	7.30252584056615	c
-5.93508677011619	0.78489083630900	5.64908335755252	c
-5.98917018886709	2.04351707447595	3.25373842266431	c
-5.68917091194122	4.69579525456620	3.69129949608418	c
-5.41223532796580	5.08303964003577	6.35377920932022	c
-5.58210229817507	2.66615740506838	7.57907877889192	c
1.86852153773465	-2.54866476390573	-5.16259221471653	mo
2.02979493585107	-9.62644096402178	-3.27067199515015	o
-5.72439804537278	-4.35510083831723	-5.91957350529021	h
-4.54333409395309	-9.28229203635167	-5.16612476783811	h
-5.02600428734452	-10.29902776588341	-0.12848920143749	h
-6.45814798747980	-5.93221572354875	2.22422250155970	h
-6.89339778750961	-2.27053399482378	-1.36719896278092	h
1.91580149914833	5.60229514799979	1.42102034371785	mo
1.57145101615606	5.76104100904414	8.78208696334479	o
-6.17669120926303	-1.25056285974492	5.96078823062644	h
-6.22691717010170	1.13741110188645	1.40550596767580	h
-5.65991509848002	6.18125167214940	2.24681031182806	h
-5.16605925364497	6.91748681820019	7.29244863468908	h
-5.53048768023810	2.32859105180701	9.62561827926829	h
0.29235540388970	0.25190519169878	-6.75087513806838	c
-0.40400026921222	-4.58443699891604	-7.30336853524239	c
5.93516969680289	-0.78599175496551	-5.64999477434394	c
5.98896407385892	-2.04456142377817	-3.25463133556770	c
5.68842666640761	-4.69680093837260	-3.69215789894815	c
5.41146509594834	-5.08403422922288	-6.35460849427201	c
5.58184677636952	-2.66724152436628	-7.57991439480456	c
0.25770401879387	6.08486331572431	-1.71897146788832	c
-0.66972588892268	7.98179839453299	2.64636589824481	c
5.70260665711312	5.32591158816372	4.08966371734787	c
5.06601264820464	7.92330168935026	3.68862949783249	c
5.29676360092292	8.45237684566326	1.03515302925711	c
6.05421848734996	6.15404912676045	-0.20042118335814	c
6.30239137684201	4.23133212189261	1.68984969357651	c
-0.54992927424244	2.08255649009782	-7.85803534697720	o
-1.57306378664570	-5.75977925639165	-8.78293197783061	o
6.17723505739085	1.24923434691638	-5.96175607763634	h
6.22687860561260	-1.13856212466812	-1.40651374963345	h
5.65886280926115	-6.18216177327902	-2.24763794015559	h
5.16488853095192	-6.91839140806041	-7.29322398329627	h

5.53028078725466	-2.32974450050334	-9.62634930711652	h
-0.74285318968149	6.52438211526060	-3.74236964740692	o
-2.03108841232590	9.62558744790318	3.27048247609544	o
5.72321257567880	4.35440983226781	5.92004920495138	h
4.54234900900737	9.28163666553007	5.16730482443536	h
5.02600395252594	10.29911935858699	0.13003934291644	h
6.45850877079314	5.93280333120193	-2.22294154943137	h
6.89295361769974	2.27070677943915	1.36772896479777	h
-2.10085028011899	6.38539476179302	-8.10802080035403	sm
2.76646635077664	7.53081043224220	-9.60844112910168	c
1.42370992493183	6.99850486151856	-11.90959826688756	c
-0.36351624031654	9.00484242112836	-12.32115958972950	c
-0.14008162672162	10.76259428008027	-10.25396078516463	c
1.79638143468528	9.84819740019378	-8.58499535513657	c
-6.59210349828107	4.82041168041460	-6.05092839844509	c
-6.84093587191485	7.51545051475262	-6.30253264306022	c
-7.00375669124848	8.09873098136835	-8.95250508852887	c
-6.82229007280428	5.76278402381158	-10.33697125995913	c
-6.58054298116479	3.74149740596587	-8.53909253762899	c
4.96429816574656	6.05280478038100	-8.56365893371337	c
1.95919952169061	4.84827533592218	-13.70722825340407	c
-1.83552654066752	9.42594858969427	-14.72388634011003	c
-1.37978628807026	13.32291116041607	-10.06762538720232	c
2.81919623353978	11.23133352814989	-6.31337669655619	c
-6.53834851169669	3.36405561701603	-3.60709174905864	c
-7.12933918427409	9.37670031981445	-4.16082336027806	c
-7.73590696951423	10.62935883420535	-10.03738563732907	c
-7.25126319147829	5.41448107588191	-13.13392972349034	c
-6.58000814529425	0.96189219537928	-9.15931418929930	c
5.08681914641454	4.14173996342665	-9.42013394600706	h
6.79605186768556	7.02225901163276	-8.95524580355472	h
4.84011178246036	5.80157855403479	-6.47883382138134	h
0.27113245145430	4.33001481644733	-14.84598379876003	h
3.48052027604744	5.35063428990986	-15.07897933955032	h
2.58612128791300	3.11067630046556	-12.70682273589488	h
-3.55926203123304	10.58371097586608	-14.41628114477785	h
-0.66550549044988	10.45129852629781	-16.14965953868658	h
-2.44068168506684	7.62756156708620	-15.62327019838133	h
-1.90308217798658	13.82787708010243	-8.09390436370742	h
-0.08127709058894	14.84109120928356	-10.74597428934510	h
-3.12028293797788	13.44630581781688	-11.22822982843044	h
3.63413975390105	9.91886547212152	-4.89228468103364	h
4.34969724909379	12.57424143553487	-6.86555383218406	h
1.34462212229664	12.36295933001421	-5.33368441662058	h
-5.87675482169666	4.55390076695559	-2.01264335769636	h
-8.45869532877660	2.65169152845948	-3.09873249311188	h
-5.25595798398543	1.70030889494993	-3.69423102838192	h
-6.55415241836064	11.31962835006115	-4.71701284093580	h
-9.13348499818236	9.50251456294746	-3.51510706977656	h
-5.98208028516774	8.84925850461346	-2.48143218037875	h
-7.07359252046679	10.87846852149012	-12.01355386271630	h
-9.83450483560852	10.84662241681132	-10.07201097937053	h
-6.98480242789566	12.23596846983742	-8.91363479435605	h
-6.02676329003293	3.91693910786778	-13.95947450816504	h
-9.24257553869101	4.83793625374857	-13.52699662805663	h
-6.90448514795380	7.17568647743974	-14.21632092962643	h
-5.59207370904884	-0.16737744741480	-7.69154334887247	h
-8.54782772125706	0.21455459088367	-9.30019178195746	h
-5.64183243598513	0.54785771341755	-10.99257491908126	h

Send

[ (Cp\*<sub>2</sub>Sm)<sub>2</sub>As<sub>2</sub> (CpMo (CO)<sub>2</sub>)<sub>4</sub> ]

Scoord

1.98592284741769	-13.75127382504619	7.98402412426843	h
0.09647701619365	-14.80267634810273	10.57312938980141	h
1.39957082713409	-13.26703973324806	9.94515335722294	c
0.12716571159212	-10.72175646296234	10.11567283803937	c
3.10596286501576	-13.38241352792335	11.15571784254987	h
2.03987160262023	-6.30801250816317	7.99921387252754	sm
0.29529441006475	-8.96227872057816	12.18723983631180	c
-1.80057471395440	-9.83572083821329	8.42252472826100	c
0.64392506516968	-6.37560851056694	3.64470612026026	o
0.51900123568009	-1.97395811676314	8.04437900549019	o
-2.82633508036074	-7.53921984699088	9.43900237163191	c
-1.52443845199737	-6.98874105170700	11.75842538703717	c
6.55502076842014	-4.82807247309732	5.89217773277213	c
6.78071201123498	-7.51588530100320	6.23099974570893	c
6.93665507905958	-8.01308879015399	8.89878093026835	c
6.76120105646963	-5.63253438938375	10.20640394710744	c
6.54263068137181	-3.66840453991456	8.34309263443044	c
1.74381907934587	-9.35381106344895	14.60951799823368	c
-2.77595561142429	-11.22867425724530	6.13646725342218	c
-0.35232446645318	-6.08803279486821	1.58778957953132	c
-0.23892245874787	-0.08313462611921	6.97843451087641	c
-5.03457013931525	-6.10111361182552	8.35724807570598	c
-2.12038192792569	-4.86105296151471	13.56332565238193	c
6.55294712752442	-3.45198536105459	3.40286956175429	c
7.06411420079304	-9.44482401699359	4.14954392468206	c
7.67385444585642	-10.50443259745184	10.06665468121550	c
7.16498206189217	-5.20179998617375	12.99592470803439	c
6.57187310310429	-0.86955045110315	8.86837040073399	c
3.47241419199808	-10.51149200780484	14.33231424191447	h
0.56188038600370	-10.36426906500903	16.03614042096989	h
2.33690441358672	-7.54374374417181	15.49428078347226	h
-3.57318267198061	-9.92327710751201	4.69905697877122	h
-4.30710807032500	-12.58043999361232	6.66542363196075	h
-1.27795207848288	-12.35246113252418	5.18382242578089	h
-2.02604187809379	-5.84580479785508	-1.57188392187152	mo
-1.74852692955252	2.76975395798907	5.40428930680349	mo
-5.35407859668496	-4.29993227053634	9.38448647751774	h
-6.81753764420704	-7.21632567812653	8.50243514550998	h
-4.77667603086693	-5.62809892790708	6.32205378981835	h
-0.44059715228667	-4.28222896901610	14.68477749631746	h
-3.60760252402103	-5.42188242943203	14.94986677662271	h
-2.81713086737329	-3.14613402932777	12.57188942254604	h
5.87956675938284	-4.67712167884091	1.84011969297248	h
8.49184868266464	-2.79666961068040	2.88792982040265	h
5.30710571236080	-1.75623968729696	3.42415823518945	h
6.48149202372735	-11.36679359383706	4.76675506473405	h
9.06775569976042	-9.59837208982640	3.50800055108704	h
5.91985291463410	-8.96679925793949	2.45310234774864	h
6.98443110672711	-10.70511131816496	12.03881354409797	h
9.77390323736441	-10.69729100155754	10.13888753281840	h
6.95742795488364	-12.14902778590332	8.97636786187136	h
5.95445865012638	-3.65959915701464	13.75743287722473	h
9.16045710930908	-4.64504814052073	13.39681961879523	h
6.77596549690254	-6.92243412414120	14.12919469792076	h

5.57670262770809	0.22121118364586	7.37574638048352	h
8.54841024161658	-0.13720785159205	8.96159273003370	h
5.65897465729189	-0.38663493477400	10.69704719805617	h
-0.72992177006800	-1.31204827616593	-1.66268667187276	as
0.63310007862274	-8.16924001698292	-2.75062108046670	c
-5.84453342942891	-5.74012116539732	-4.20281164366789	c
-5.09913438482848	-8.30745093372592	-3.80794072454587	c
-5.27304357841930	-8.84270305630526	-1.15007431151808	c
-6.11458081350523	-6.57858420678663	0.09254196844654	c
-6.46585016037071	-4.66827701702646	-1.79445925592847	c
0.72927219617739	1.31174938380525	1.66243943196575	as
0.52538958907765	4.83342578717217	7.51677223845640	c
-5.80051114645124	1.00326229875304	5.95032221646292	c
-5.85138231530964	2.15057671298498	3.49862291927894	c
-5.56800232612130	4.82241246083016	3.82439704572849	c
-5.31528311532092	5.33140790194158	6.46813821778132	c
-5.47309214233445	2.96973373566272	7.79809676958118	c
1.74870670748154	-2.77015637985956	-5.40408160448549	mo
2.03003899060815	-9.79687510525165	-3.33896416174822	o
-5.92519354500430	-4.77243040275007	-6.03431859125106	h
-4.53416221898451	-9.64372306358052	-5.29189594442454	h
-4.91512208772810	-10.67588920529569	-0.24777612321086	h
-6.50608964404033	-6.37302695979408	2.11932981381537	h
-7.14626837662205	-2.73674510345322	-1.46422458723068	h
2.02641384058314	5.84505186267121	1.57120119988533	mo
1.70050075864471	6.03353475281462	8.97088586953919	o
-6.02749638477520	-1.01811182576475	6.35122106881860	h
-6.08717470581567	1.16102295748119	1.69195869700607	h
-5.54009818674824	6.24305574582422	2.31633579029432	h
-5.08708948370989	7.20800900062622	7.32387261652437	h
-5.43011951963101	2.72217804035993	9.85761833779305	h
0.23889030284866	0.08256705626787	-6.97842524410209	c
-0.52510575875210	-4.83397806555377	-7.51658485982841	c
5.80052934893047	-1.00355049582039	-5.95030733695785	c
5.85153978181022	-2.15049240041591	-3.49845222903501	c
5.56835334623269	-4.82238525518479	-3.82381326563409	c
5.31554772021427	-5.33180700500709	-6.46747773889009	c
5.47322372632928	-2.97031451532797	-7.79778678882135	c
0.35250553154781	6.08691875219631	-1.58840514093326	c
-0.63194320377026	8.16920634082615	2.74983802615336	c
5.84484091085946	5.73884187143474	4.20183539563651	c
5.09993922107955	8.30633249391287	3.80715711716439	c
5.27376098530470	8.84169575296135	1.14931255653008	c
6.11486872200637	6.57752850334554	-0.09347353329137	c
6.46591600787549	4.66705210747572	1.79341177961992	c
-0.51903897509771	1.97334651497827	-8.04452535935503	o
-1.70012659622706	-6.03409652682710	-8.97077751064577	o
6.02743864969025	1.01773843368463	-6.35154839280439	h
6.08723761836848	-1.16071004960853	-1.69193562978286	h
5.54039100124342	-6.24277111779712	-2.31554186730996	h
5.08737719342593	-7.20852602008320	-7.32290063324680	h
5.43026523731531	-2.72306329494073	-9.85732186074632	h
-0.64388662313401	6.37464411226916	-3.64529573778573	o
-2.02838485266443	9.79736992885150	3.33805815716620	o
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4.53526697703636	9.64258206509527	5.29119779581595	h
4.91603214512964	10.67494696610910	0.24715048324903	h
6.50625466251478	6.37201848457780	-2.12024516139213	h
7.14602488572743	2.73546956651060	1.46307806568799	h

-2.04005018175275	6.30749133438591	-7.99967870547884	sm
2.82637889882145	7.53822645154771	-9.43967787719497	c
1.52391253775509	6.98885746762935	-11.75902559509427	c
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-0.12675923379010	10.72151151110691	-10.11450376068042	c
1.80121813042753	9.83450509023305	-8.42212850538775	c
-6.55519114354577	4.82820430317055	-5.89259297990932	c
-6.78011984632746	7.51624614865679	-6.23024799098768	c
-6.93659563709455	8.01456482628906	-8.89778833868885	c
-6.76217948795264	5.63451451987088	-10.20642980080731	c
-6.54370037323761	3.66955258202684	-8.34399261399476	c
5.03446409546675	6.09938283707579	-8.35867355784179	c
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-1.39860669228096	13.26700053261067	-9.94282428251817	c
2.77728753215377	11.22649872798127	-6.13579291776310	c
-6.55299638193764	3.45113367120861	-3.40382287556303	c
-7.06252334035509	9.44443684645584	-4.14795152839767	c
-7.67356602594227	10.50657451931727	-10.06439513573004	c
-7.16694391321655	5.20507300764733	-12.99600203879152	c
-6.57369573143583	0.87089598392651	-8.87039827061592	c
5.35405131054693	4.29880661739963	-9.38692583138264	h
6.81743586792024	7.21465957214944	-8.50314170215163	h
4.77651193668729	5.62521387853496	-6.32377762142868	h
0.43900814592317	4.28367886423184	-14.68626239041770	h
3.60622630421739	5.42266468618945	-14.95131102422297	h
2.81555229561084	3.14622919068025	-12.57409564023048	h
-3.47296955579792	10.51336020553496	-14.33044250077543	h
-0.56287159339002	10.36637620736229	-16.03503686028081	h
-2.33818344409951	7.54590473017017	-15.49386580715678	h
-1.98462866146316	13.75060940551666	-7.98143824062358	h
-0.09527561666035	14.80261156692135	-10.57037599023479	h
-3.10510155149464	13.38316733293550	-11.15316828399239	h
3.57454116052390	9.92051479287622	-4.69895701495283	h
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1.27966570094167	12.35024374726926	-5.18251206074643	h
-5.87883714197670	4.67546183636731	-1.84076049583874	h
-8.49202262671743	2.79622652651857	-2.88873553293973	h
-5.30770940129974	1.75496849302254	-3.42600445534529	h
-6.47958298069795	11.36651157033576	-4.76454745985427	h
-9.06598433228473	9.59822212980007	-3.50587086273397	h
-5.91792719919079	8.96546578193830	-2.45199016916166	h
-6.98495370602962	10.70785610605651	-12.03677898240747	h
-9.77359973431000	10.70001115845496	-10.13565572139049	h
-6.95623441429420	12.15054871047398	-8.97376635041131	h
-5.95723082450354	3.66274457595806	-13.75854653567581	h
-9.16275055534055	4.64919330994677	-13.39649066430942	h
-6.77767621387659	6.92603180109646	-14.12868271824629	h
-5.57836100296376	-0.22071505461043	-7.37848140756374	h
-8.55042764734027	0.13899888043788	-8.96333152956745	h
-5.66146372711115	0.38849907990357	-10.69955562934461	h

\$end

**[ (Cp\*<sub>2</sub>Sm)<sub>2</sub>Sb<sub>2</sub>(CpMo(CO)<sub>2</sub>)<sub>4</sub> ]**

\$coord

2.31540542909101	-13.82129253251507	8.80750756255805	h
0.11439610661820	-14.58481707829348	11.24864312291151	h
1.44928589759336	-13.09476849839314	10.58018975207914	c

0.08947652975935	-10.61634883491752	10.21807412717048	c
2.97320928589865	-12.95756324267332	12.01234390965780	h
1.99358525458413	-6.43616780657854	7.67824277906175	sm
-0.03924013239711	-8.56926792492854	12.01116363065776	c
-1.69030077439142	-10.09742895407371	8.23445161692803	c
0.46656033420156	-6.46871672575208	3.37742694742750	o
0.87271368761839	-1.99957573272025	8.17075684357924	o
-2.94669728168567	-7.76247401394956	8.81668425650390	c
-1.92428600655537	-6.81390527570337	11.14378735249402	c
6.51866498933588	-5.98720700097411	5.11577076819490	c
6.59559838386687	-8.44706240939876	6.26875672520867	c
6.81512944495159	-8.10168541453772	8.95813730530524	c
6.80504252375672	-5.43043239475158	9.46597691502590	c
6.65163893252593	-4.12761865234745	7.08618442197157	c
1.23557789005130	-8.46146379456264	14.55937397031895	c
-2.34536212543760	-11.84111361540661	6.07482334269755	c
-0.39957716965715	-6.35336095535778	1.24200010732587	c
0.04813502683153	-0.02907954922848	7.31175242609842	c
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6.73750520449439	-10.93195770089706	4.87424631334853	c
7.50634392381966	-10.12843338894581	10.83552155383947	c
7.21955784695578	-4.21506619080098	12.01193869230814	c
6.86861745213996	-1.31545711870877	6.69967832361847	c
2.98882108570736	-9.61201885062787	14.62196164733813	h
-0.03016385372773	-9.20023341734789	16.07729655746832	h
1.75234856869324	-6.50098101437489	15.11628829534905	h
-2.75409944912351	-10.79681076971286	4.29755190615624	h
-4.05151400259700	-13.00176428954908	6.51829446635554	h
-0.79088172506974	-13.18895555893163	5.65718917444843	h
-1.92905621208878	-6.40007042886741	-2.00196392930634	mo
-1.59977752244299	2.90404517973212	6.04086448394910	mo
-6.25230267169188	-5.34237218075899	8.52036832849165	h
-6.40831542413839	-8.14100987778631	6.64357348711990	h
-4.49356841521703	-5.54597338655401	5.63162965685345	h
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5.41376445384861	-3.75118668717809	1.82000497335198	h
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-4.71215622343998	-9.84729813522717	-1.89168161994144	c

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-5.60224949524544	4.70992639422967	4.62964979117106	c
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-5.13956346542087	3.09299655139892	8.68092384613785	c
1.60915130102447	-2.90072297168838	-6.03836497936520	mo
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-6.18769719853463	-7.93865688556565	1.63863975188258	h
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1.93243460804701	6.40772334566322	2.00465955583805	mo
1.97533989203538	6.08689979869129	9.55142428329203	o
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5.52580032412228	-1.02022104205399	-6.97652341301760	c
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5.61112361570866	-4.70932788255918	-4.62913056109527	c
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5.14510830431691	-3.09931944853845	-8.68282267883983	c
0.39237629613311	6.36533003637813	-1.23440870795265	c
-1.01903843665899	8.39731028168279	3.08693196608047	c
5.77606218929524	6.53845266564417	4.57305259854486	c
4.68767299930745	9.00824895281286	4.48204216757274	c
4.72003098311635	9.85104830421416	1.89531448118463	c
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-1.99445074815774	6.44072880610326	-7.67307192214926	sm
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6.23386266015512	5.34128945417955	-8.51279309593233	h
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-1.74336360649104	6.54589053943802	-15.11898630948962	h
-2.33298141160690	13.82792133132970	-8.76288169006176	h
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2.76259664956557	10.79181723337694	-4.27699164479358	h
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0.77226340901618	13.17744983385458	-5.60824991918061	h
-5.79250115907262	6.96345668762299	-1.22673749331271	h
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-9.61004063774157	10.24094309816377	-11.03683263863740	h
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-8.84672951328184	0.70538349839691	-6.43189355873427	h
-6.18557658084915	0.21936825083282	-8.46832220307414	h

\$end

**P<sub>2</sub>**

\$scoord

-1.81034108906079	0.00000000000000	0.00000000000000	p
1.81034108906079	0.00000000000000	0.00000000000000	p

\$end

**As<sub>2</sub>**

\$scoord

2.00549790902095	0.00000000000000	0.00000000000000	as
-2.00549790902095	0.00000000000000	0.00000000000000	as

\$end



## Sb<sub>2</sub>

```
$coord
  2.39729052760246      0.0000000000000000      0.0000000000000000      sb
 -2.39729052760246      0.0000000000000000      0.0000000000000000      sb
$end
```

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