

# Electronic Supplementary Information for

## Theoretical Insights into the Separation of Am(III)/Eu(III): Designing Ligands Based on a Preorganization Strategy

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Chang-Ming Nie<sup>b</sup> and Wei-Qun Shi<sup>\*,a</sup>

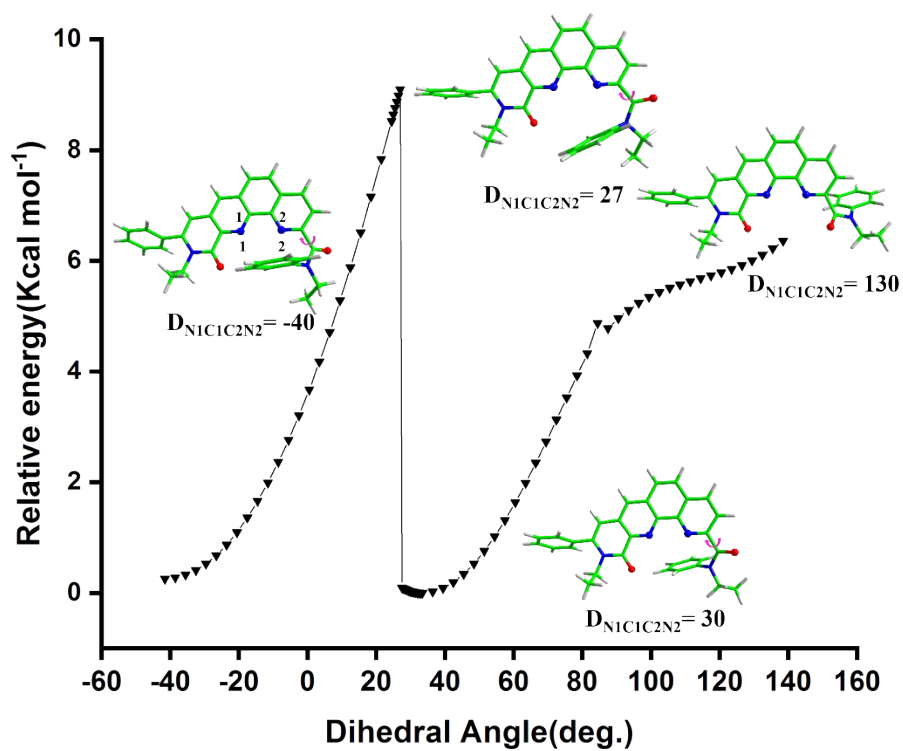
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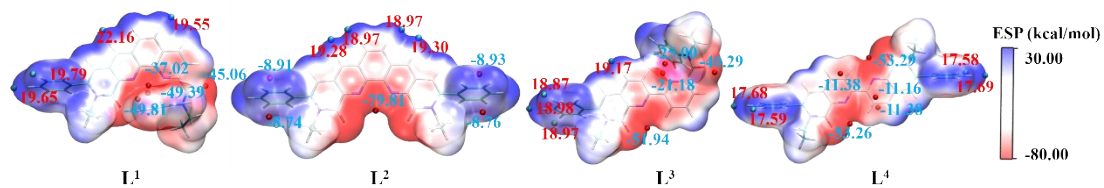
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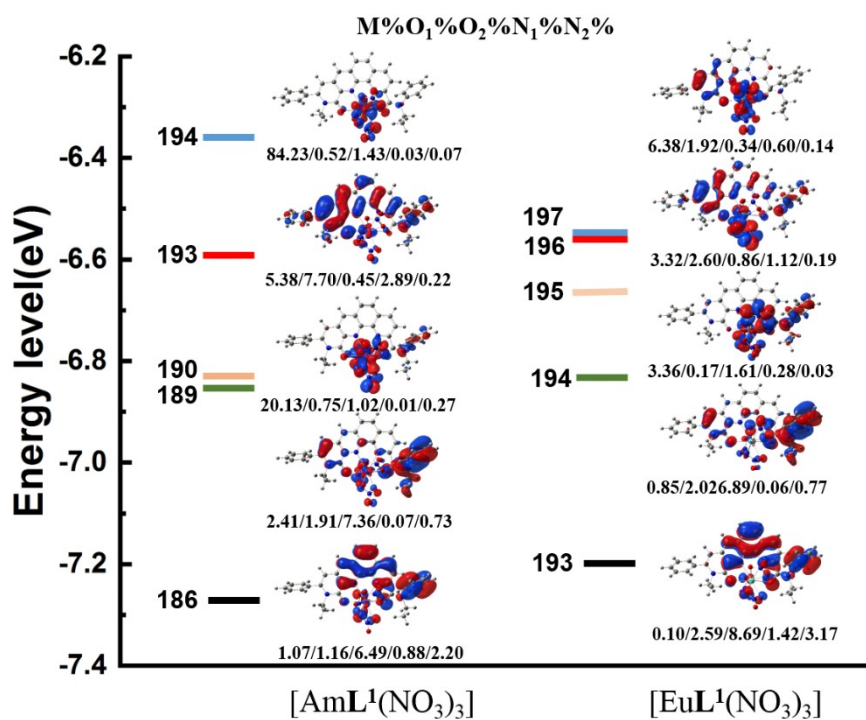
\*E-mail: shiwq@ihep.ac.cn. Tel: 86-10-88233968



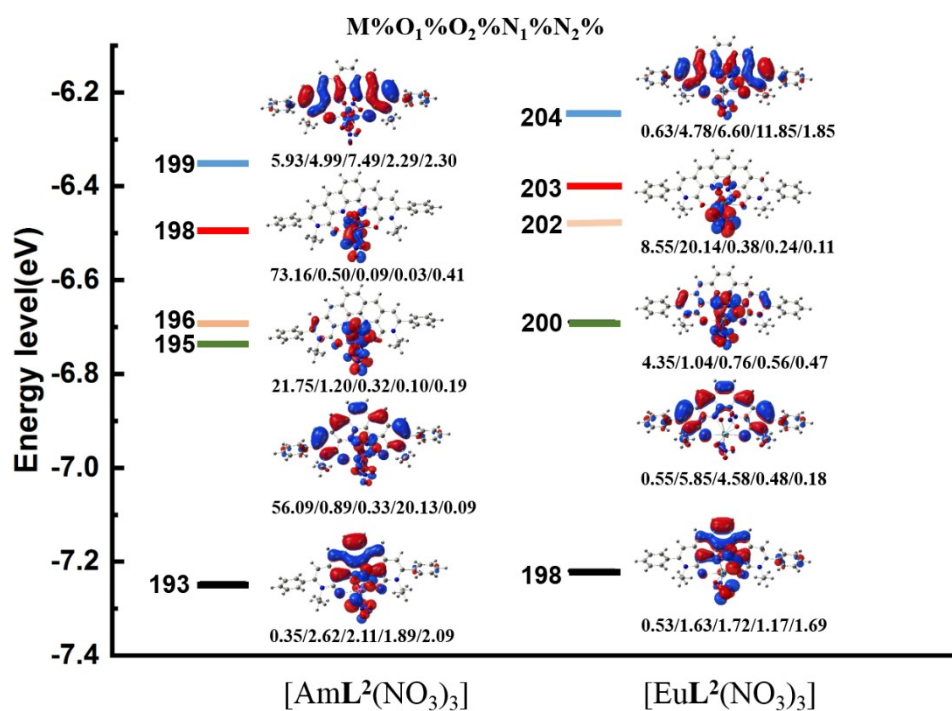
**Fig. S1** PES scans of  $D_{N1C1C2N2}$  dihedral angle for  $L^1$ .



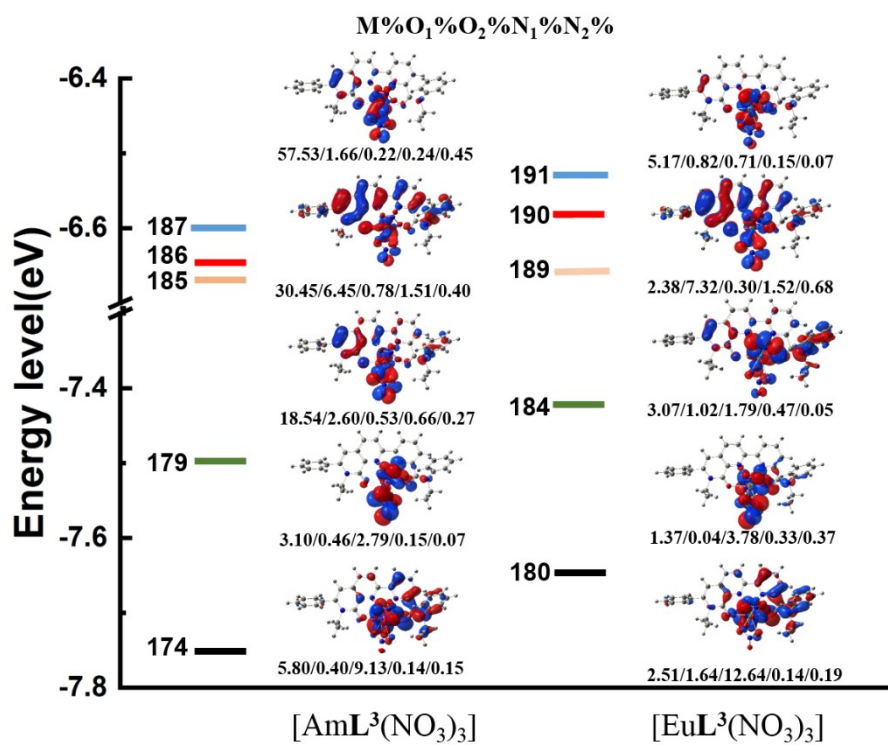
**Fig. S2** ESP of  $L^1$ - $L^4$ . The values (kcal/mol) of the negative and positive ESP are presented as blue and red spheres, respectively.



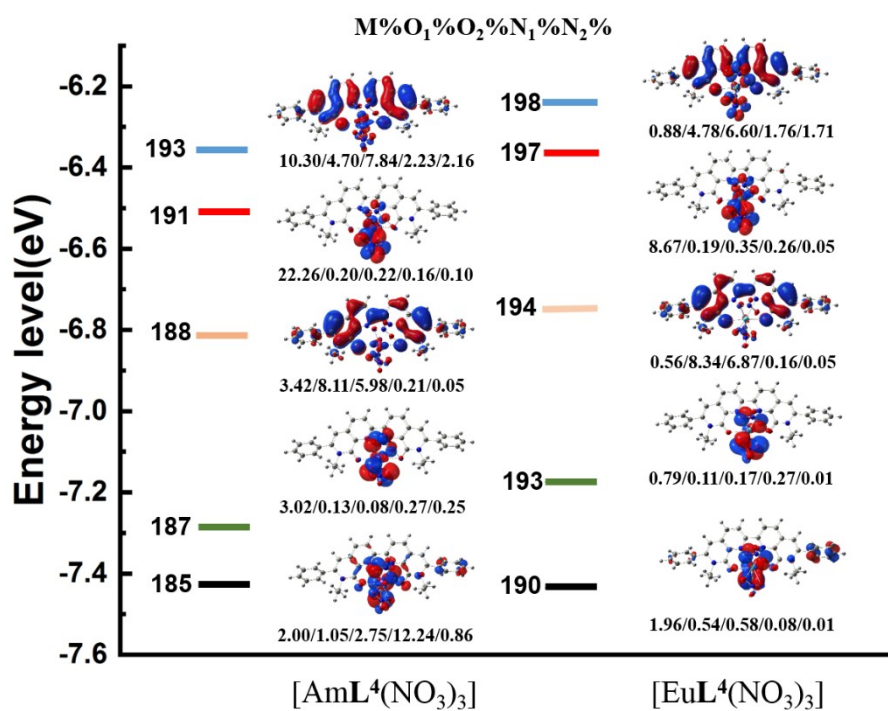
**Fig. S3** Energy level (eV) and diagrams of the  $\alpha$ -spin MOs of  $ML^1(NO_3)_3$  complexes at the B3LYP/6-31G(d)/RECP level of theory in the gas phase (the isosurface value is set as 0.02 au).



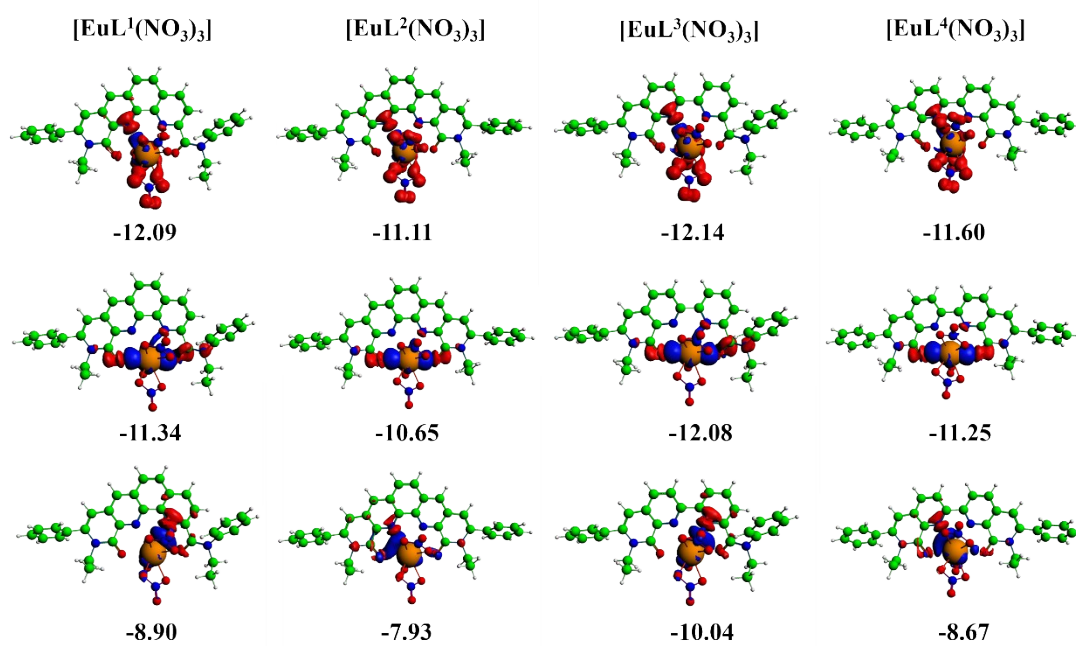
**Fig. S4** Energy level (eV) and diagrams of the  $\alpha$ -spin MOs of  $ML^2(NO_3)_3$  complexes at the B3LYP/6-31G(d)/RECP level of theory in the gas phase. (the isosurface value is set as 0.02 a.u.)



**Fig. S5** Energy level (eV) and diagrams of the  $\alpha$ -spin MOs of  $ML^3(NO_3)_3$  complexes at the B3LYP/6-31G(d)/RECP level of theory in the gas phase. (the isosurface value is set as 0.02 a.u.)



**Fig. S6** Energy level (eV) and diagrams of the  $\alpha$ -spin MOs of  $ML^4(NO_3)_3$  complexes at the B3LYP/6-31G(d)/RECP level of theory in the gas phase. (the isosurface value is set as 0.02 a.u.)



**Fig. S7** Natural orbitals for the chemical valence (NOCV) with the larger contribution to the orbital interaction energy for the [EuL(NO<sub>3</sub>)<sub>3</sub>] complexes. The corresponding orbital interaction energy (kcal/mol) contribution for each NOCV pair is also presented.

**Table S1.** The relative electronic energies (kcal/mol) to each ground state for the  $[\text{AmL}^2(\text{NO}_3)_3]$  and  $[\text{EuL}^2(\text{NO}_3)_3]$  complexes at the B3LYP/6-31G(d)/RECP level of theory.

Spin state	singlet	triplet	quintet	septet
$[\text{AmL}^2(\text{NO}_3)_3]$	100.57	64.09	40.07	0.00
$[\text{EuL}^2(\text{NO}_3)_3]$	145.33	90.60	57.20	0.00

**Table S2.** Properties of the  $\text{L}^1$ - $\text{L}^4$  Ligands

	IP	EA	$\eta$
$\text{L}^1$	17.29	-9.72	13.50
$\text{L}^2$	17.16	-10.16	13.66
$\text{L}^3$	16.93	-9.70	13.31
$\text{L}^4$	16.73	-9.74	13.23

**Table S3.** WBIs of the M–N and M–O Bonds in the  $\text{ML}(\text{NO}_3)_3$  Complexes at the B3LYP/6-31G(d)/RECP Level of Theory in the Gas Phas

complexes	M-N <sub>1</sub>	M-N <sub>2</sub>	M-O <sub>1</sub>	M-O <sub>2</sub>
$[\text{M}(\text{L}^1)(\text{NO}_3)_3]$	0.206/0.163	0.189/0.164	0.238/0.210	0.223/0.203
$[\text{M}(\text{L}^2)(\text{NO}_3)_3]$	0.199/0.155	0.192/0.159	0.229/0.202	0.221/0.199
$[\text{M}(\text{L}^3)(\text{NO}_3)_3]$	0.200/0.160	0.188/0.164	0.228/0.219	0.241/0.211
$[\text{M}(\text{L}^4)(\text{NO}_3)_3]$	0.201/0.154	0.194/0.158	0.236/0.212	0.227/0.208



**Table S4.** Second-order perturbative estimates (E(2), kcal/mol) of donor-acceptor interactions between O/N-ligands and Am(III)/Eu(III) in the [ML(NO<sub>3</sub>)<sub>3</sub>] complexes.

Complexes	donor→acceptor	Character of empty metal orbita	E(2)
[AmL <sup>1</sup> (NO <sub>3</sub> ) <sub>3</sub> ]	N <sub>1</sub> →Am	p(0.03%),d(99.50%),f(0.46%)	7.20
	N <sub>2</sub> →Am	s(0.11%),p(0.13%),d(99.27%),f(0.49%)	5.84
	O <sub>1</sub> →Am	s(1.33%),p(0.09%),d(98.00%),f(0.58%)	10.16
	O <sub>2</sub> →Am	s(0.11%),p(0.13%),d(99.27%),f(0.49%)	8.72
[EuL <sup>1</sup> (NO <sub>3</sub> ) <sub>3</sub> ]	N <sub>1</sub> →Eu	s(1.08%),p(0.01%),d(98.47%),f(0.40%)	14.41
	N <sub>2</sub> →Eu	s(0.04%),p(0.12%),d(99.36%),f(0.46%)	6.72
	O <sub>1</sub> →Eu	s(4.63%),p(0.03%),d(94.90%),f(0.43%)	10.06
	O <sub>2</sub> →Eu	s(0.04%),p(0.12%),d(99.36%),f(0.46%)	7.47
[AmL <sup>2</sup> (NO <sub>3</sub> ) <sub>3</sub> ]	N <sub>1</sub> →Am	s(0.01%),p(0.09%),d(99.39%),f(0.52%)	8.70
	N <sub>2</sub> →Am	s(0.08%),p(0.12%),d(99.05%),f(0.75%)	6.22
	O <sub>1</sub> →Am	s(0.96%),p(0.05%),d(98.38%),f(0.61%)	6.26
	O <sub>2</sub> →Am	s(0.08%),p(0.12%),d(99.05%),f(0.75%)	7.41
[EuL <sup>2</sup> (NO <sub>3</sub> ) <sub>3</sub> ]	N <sub>1</sub> →Eu	s(0.61%),p(0.01%),d(98.98%),f(0.37%)	13.31
	N <sub>2</sub> →Eu	s(0.03%),p(0.09%),d(99.17%),f(0.70%)	6.60
	O <sub>1</sub> →Eu	s(0.42%),p(0.05%),d(99.27%),f(0.24%)	8.01
	O <sub>2</sub> →Eu	s(0.03%),p(0.09%),d(99.17%),f(0.70%)	6.22
[AmL <sup>3</sup> (NO <sub>3</sub> ) <sub>3</sub> ]	N <sub>1</sub> →Am	p(0.04%),d(99.48%),f(0.48%)	6.88
	N <sub>2</sub> →Am	s(0.14%),p(0.14%),d(99.17%),f(0.54%)	6.11
	O <sub>1</sub> →Am	s(1.66%),p(0.08%),d(97.65%),f(0.61%)	9.84
	O <sub>2</sub> →Am	s(0.14%),p(0.14%),d(99.17%),f(0.54%)	9.60
[EuL <sup>3</sup> (NO <sub>3</sub> ) <sub>3</sub> ]	N <sub>1</sub> →Eu	s(1.81%),p(0.02%),d(97.72%),f(0.42%)	13.21
	N <sub>2</sub> →Eu	s(0.04%),p(0.12%),d(99.33%),f(0.50%)	7.35
	O <sub>1</sub> →Eu	s(5.44%),p(0.22%),d(94.09%),f(0.43%)	9.48
	O <sub>2</sub> →Eu	s(0.04%),p(0.12%),d(99.33%),f(0.50%)	8.11
[AmL <sup>4</sup> (NO <sub>3</sub> ) <sub>3</sub> ]	N <sub>1</sub> →Am	s(0.01%),p(0.08%),d(99.41%),f(0.50%)	9.40
	N <sub>2</sub> →Am	s(0.10%),p(0.10%),d(99.12%),f(0.68%)	5.77
	O <sub>1</sub> →Am	s(1.26%),p(0.05%),d(98.05%),f(0.64%)	7.69
	O <sub>2</sub> →Am	s(0.10%),p(0.10%),d(99.12%),f(0.68%)	8.59
[EuL <sup>4</sup> (NO <sub>3</sub> ) <sub>3</sub> ]	N <sub>1</sub> →Eu	s(0.53%),p(0.01%),d(99.04%),f(0.39%)	12.90
	N <sub>2</sub> →Eu	s(0.02%),p(0.07%),d(99.22%),f(0.67%)	6.70
	O <sub>1</sub> →Eu	s(0.34%),p(0.04%),d(99.38%),f(0.23%)	7.91
	O <sub>2</sub> →Eu	s(0.02%),p(0.07%),d(99.22%),f(0.67%)	7.18

**Table S5.** Total bonding energy (kcal/mol), Pauli, electrostatic and orbital

**interactions obtained from energy decomposition analysis at the BP86/TZ2P level of theory.**

complexes	$\Delta E_{\text{int}}$	$\Delta E_{\text{Pauli}}$	$\Delta E_{\text{orb}}$	$\Delta E_{\text{elstat}}$
[Am(L <sup>1</sup> )(NO <sub>3</sub> ) <sub>3</sub> ]	-89.10	109.04	-80.20	-117.94
[Am(L <sup>2</sup> )(NO <sub>3</sub> ) <sub>3</sub> ]	-86.14	99.39	-74.45	-111.08
[Am(L <sup>3</sup> )(NO <sub>3</sub> ) <sub>3</sub> ]	-89.34	114.82	-82.43	-114.82
[Am(L <sup>4</sup> )(NO <sub>3</sub> ) <sub>3</sub> ]	-87.36	107.06	-77.77	-116.65
[Eu(L <sup>1</sup> )(NO <sub>3</sub> ) <sub>3</sub> ]	-91.08	94.68	-78.96	-106.80
[Eu(L <sup>2</sup> )(NO <sub>3</sub> ) <sub>3</sub> ]	-87.84	84.49	-72.81	-99.51
[Eu(L <sup>3</sup> )(NO <sub>3</sub> ) <sub>3</sub> ]	-91.66	100.65	-81.69	-110.62
[Eu(L <sup>4</sup> )(NO <sub>3</sub> ) <sub>3</sub> ]	-89.20	92.12	-76.29	-105.03

**Table S6. Changes of the Energy ( $\Delta E$ , kcal/mol) for the Reactions  $[\text{M}(\text{NO}_3)(\text{H}_2\text{O})_8]^{2+} + \text{L}^3 + 2\text{NO}_3^- = [\text{ML}^3(\text{NO}_3)_3] + 8\text{H}_2\text{O}$  (M = Am and Eu) and the difference ( $\Delta\Delta E$ ) of between  $\Delta E_{\text{Am}}$  and  $\Delta E_{\text{Eu}}$  in the Cyclohexanone Solution at the B3LYP/TZP/SO and B3LYP/TZP/SR level of theory, respectively.**

Reaction	$\Delta E_{\text{SO}}$	$\Delta\Delta E_{\text{SO}}$	$\Delta E_{\text{SR}}$	$\Delta\Delta E_{\text{SR}}$
$[\text{Am}(\text{NO}_3)(\text{H}_2\text{O})_8]^{2+} + \text{L}^3 + 2\text{NO}_3^- = [\text{AmL}^3(\text{NO}_3)_3] + 8\text{H}_2\text{O}$	-0.93	-68.52	-37.42	-7.46
$[\text{Eu}(\text{NO}_3)(\text{H}_2\text{O})_8]^{2+} + \text{L}^3 + 2\text{NO}_3^- = [\text{EuL}^3(\text{NO}_3)_3] + 8\text{H}_2\text{O}$	67.59		-29.96	

## Cartesian coordinates

**L<sup>1</sup>**

Atoms	X	Y	Z
O	2.07237700	14.64517500	2.57592300
O	7.56098400	11.62064200	-1.17242700
N	2.51237400	11.96471900	2.05911200
N	4.46456600	11.22023000	0.26561900
N	0.51664300	14.16136800	4.18242700
C	1.44683000	13.78751100	3.18902800
C	1.58419100	12.32647600	2.93924900
C	0.72672900	11.40748300	3.61003500
N	5.89408300	13.16185400	-1.42504700
C	-0.20768500	11.90741300	4.57448800
C	-0.28603400	13.23751500	4.85570200
C	0.87043700	10.05507600	3.29114100
H	0.23559700	9.31290800	3.77082200
C	1.83212900	9.65055200	2.35947700
C	2.65559400	10.66502500	1.76684800
C	3.68302400	10.26568700	0.80837300
C	3.82593700	8.88900600	0.48119200
C	2.96745300	7.91102900	1.09034700
H	3.10048000	6.86651300	0.81852600
C	2.01560400	8.27300300	1.99167900
H	1.37518800	7.52479300	2.45218600
C	4.84027600	8.53956100	-0.43743600
H	4.98204000	7.49510500	-0.70539600
C	5.64735100	9.52164600	-0.96894700
C	5.40578200	10.86333000	-0.59486800
C	6.36754600	11.91815200	-1.09856400
C	-3.00350600	14.45456600	7.95957700

C	-1.62531300	14.58353200	8.15016500
C	-0.74016000	14.21136800	7.13986700
C	-1.22156500	13.70662500	5.92079900
C	-2.60545800	13.57282200	5.74249200
C	-3.49091900	13.94663500	6.75542900
H	-3.69205400	14.74528500	8.74815100
H	-1.23830500	14.96678700	9.09034700
H	0.33168800	14.29646900	7.29883000
H	-2.98391100	13.17600500	4.80470800
H	-4.56119000	13.84048300	6.60085100
C	6.88948800	14.18769200	-1.79435500
H	7.75892800	13.66541700	-2.19941900
C	0.32411000	15.62011200	4.33630500
C	-0.68780900	16.18297600	3.33705600
H	1.30170100	16.07539600	4.17745200
H	0.00803100	15.82012800	5.35876600
H	-0.77766700	17.26678500	3.47207300
H	-0.36016100	15.99290000	2.31133200
H	-1.67856300	15.73887700	3.48216100
H	6.44906600	14.79996900	-2.58702200
C	7.29986800	15.05935500	-0.60625900
H	8.02754700	15.81500900	-0.92563500
H	6.43526100	15.57670500	-0.17688700
H	7.76159400	14.44701000	0.17464000
H	-0.83084100	11.21552200	5.12997100
H	6.46259900	9.29624400	-1.64671000
C	4.50561400	13.50389500	-1.61510800
C	3.95481800	13.37937700	-2.89608200
C	3.73546400	14.02389500	-0.57157100
C	2.63804000	13.77570100	-3.13373600

H	4.56427300	12.97380000	-3.69964600
C	2.41920800	14.41797400	-0.81328900
H	4.13835900	14.07588700	0.43204800
C	1.87032200	14.29985200	-2.09178900
H	2.21536800	13.67411000	-4.13006600
H	1.83330300	14.80063500	0.01625800
H	0.84418800	14.60852300	-2.27585500

## **L<sup>2</sup>**

Atoms	X	Y	Z
O	1.94508200	15.02107300	4.39190300

O	5.20831900	14.83381700	-0.09613600
N	1.76549300	12.89608200	2.62691400
N	3.39375900	12.80128800	0.39234200
N	0.36147500	14.11638900	5.77583300
C	1.16974300	14.10397300	4.61056500
C	0.98412500	12.93603400	3.70305100
C	-0.00436100	11.95558800	4.00288200
N	6.00767400	13.78634700	-1.96846600
C	-0.77825400	12.08643300	5.20098600
C	-0.58156400	13.12948500	6.05548900
C	-0.14456800	10.89972100	3.09767700
H	-0.88424100	10.12246700	3.27920600
C	0.66526800	10.83674500	1.96155600
C	1.62964000	11.88046300	1.76560700
C	2.49268500	11.82982100	0.58234800
C	2.34209100	10.73772200	-0.33547300
C	1.35482800	9.71826900	-0.09002000
H	1.26549900	8.90480700	-0.80614400
C	0.55511800	9.76562000	1.00511400
H	-0.18693900	8.99083200	1.18281300
C	3.17810400	10.70344400	-1.45373100
H	3.09364600	9.88695200	-2.16815100
C	4.12432900	11.71247600	-1.65483800
C	4.17984100	12.74904100	-0.67981800
C	5.14495000	13.87282400	-0.84614000
C	5.94770500	12.74553200	-2.89298400
C	5.03342100	11.74369500	-2.76119400
C	-2.89209900	13.17923100	9.68378200
C	-1.51028400	12.97970800	9.74026500
C	-0.75300800	12.98413100	8.57010800

C	-1.36723400	13.19109300	7.32417300
C	-2.75504200	13.38184100	7.27715700
C	-3.51233500	13.37800300	8.45036000
H	-3.48089800	13.17591400	10.59696600
H	-1.02207700	12.81259100	10.69654100
H	0.31920900	12.81234900	8.61649600
H	-3.23701700	13.53555800	6.31582700
H	-4.58682400	13.53129200	8.39785400
C	8.69922200	12.49057200	-6.18988100
C	9.16728000	12.35896000	-4.87990900
C	8.28441500	12.46241500	-3.80634400
C	6.91828600	12.70215900	-4.02717800
C	6.45716300	12.82425400	-5.34520200
C	7.34292100	12.72109100	-6.41974900
H	9.38888500	12.41006000	-7.02563200
H	10.22058600	12.16749800	-4.69383200
H	8.64952200	12.34273200	-2.78964700
H	5.40050300	13.00302000	-5.52293600
H	6.97067800	12.82212100	-7.43562900
C	6.86262800	14.97445400	-2.17790800
H	7.15831000	15.31690700	-1.18595100
C	0.47640300	15.34568300	6.58936100
C	-0.40372300	16.47860000	6.05844200
H	1.52577700	15.63929800	6.55302000
H	0.21606900	15.10473600	7.61873500
H	-0.26747400	17.37389100	6.67578700
H	-0.12706900	16.72707500	5.03032600
H	-1.46398700	16.20394200	6.08651700
H	7.75434000	14.66770400	-2.72211400
C	6.13116100	16.09281100	-2.92237700

H	6.79342800	16.95907100	-3.03291200
H	5.82455700	15.76890100	-3.92311600
H	5.24620500	16.40834700	-2.36326000
H	-1.50248400	11.32260800	5.46115600
H	5.03041400	10.93584500	-3.48437600

### **L<sup>3</sup>**

Atoms	X	Y	Z
O	1.79424200	14.57094400	2.26749200
O	7.49767100	11.07455100	-0.86490200
N	2.26472500	11.85901500	1.93157400



N	4.33147900	10.96781400	0.32821800
N	0.46492000	14.19841300	4.09224200
C	1.28549400	13.75571400	3.02917600
C	1.45485800	12.28593000	2.91100900
C	0.76447200	11.42180200	3.79216100
N	6.08689300	12.85501200	-1.17047100
C	-0.05953000	11.97713300	4.81983400
C	-0.18585400	13.32732700	4.96312200
C	0.96105300	10.03653600	3.60663100
H	0.46729200	9.32818700	4.26728400
C	1.79425800	9.60010500	2.59902100
C	2.43842700	10.54866500	1.76560900
C	3.35760100	10.11031700	0.67385000
C	3.20723900	8.86615000	0.04264100
C	4.12411500	8.49215700	-0.93888300
H	4.03117800	7.53162600	-1.43841800
C	5.15661200	9.36386000	-1.26619200
C	5.19696800	10.60654300	-0.62074000
C	6.35809800	11.53666000	-0.90517500
C	-2.56637700	14.76809800	8.24258000
C	-1.18238600	14.95993800	8.24936600
C	-0.40785000	14.51440400	7.17956900
C	-1.00821700	13.87222100	6.08440600
C	-2.39607900	13.67635600	6.09074000
C	-3.17059400	14.12399300	7.16292600
H	-3.16856000	15.11591200	9.07735500
H	-0.70385700	15.45004600	9.09279300
H	0.67039600	14.65034400	7.19607800
H	-2.86533900	13.17268600	5.25034300
H	-4.24586900	13.96817300	7.15212200

C	7.22326600	13.78029400	-1.32882500
H	8.11628200	13.16332800	-1.44288200
C	0.22580100	15.65831200	4.12265500
C	-0.90957700	16.07965400	3.18854300
H	1.15992300	16.12781800	3.81381700
H	0.00992400	15.95024300	5.14892400
H	-1.03312400	17.16792600	3.22424900
H	-0.68249500	15.79510800	2.15761400
H	-1.85858600	15.61952400	3.48456200
H	7.07308700	14.34608400	-2.25529700
C	7.37187500	14.73378900	-0.14199700
H	8.21630200	15.41313500	-0.30885700
H	6.46996800	15.33907400	-0.00191500
H	7.55758300	14.17440600	0.78074900
H	-0.56028600	11.32381900	5.52548500
H	5.91776800	9.10746100	-1.99484100
C	4.78232300	13.35278300	-1.53375100
C	4.44209800	13.40472800	-2.89172700
C	3.88869100	13.83107500	-0.57232500
C	3.21338500	13.93393100	-3.28614100
H	5.14483200	13.02805800	-3.63076000
C	2.65691800	14.35406400	-0.97061800
H	4.12570800	13.75219700	0.48084900
C	2.32031800	14.41154700	-2.32395200
H	2.95438700	13.96894300	-4.34133000
H	1.97091100	14.69851800	-0.20379900
H	1.36089400	14.82106900	-2.63045200
H	1.97768200	8.53906700	2.46516600
H	2.38214600	8.20915100	0.29830200

## L<sup>4</sup>

Atoms	X	Y	Z
O	2.54557100	14.32143200	4.90917900
O	4.40785000	15.19969000	-0.71288900
N	1.90800000	12.69364000	2.75841600
N	3.16203200	12.90793100	0.22690600
N	0.59897000	13.79639600	5.99692900

C	1.49850800	13.69229100	4.90341900
C	1.06351900	12.80359800	3.79427900
C	-0.18453300	12.14073300	3.86515400
N	5.65202400	14.00793000	-2.22288200
C	-1.01579100	12.32550500	5.01423600
C	-0.61930300	13.12646100	6.04451700
C	-0.52976000	11.31324600	2.77562200
H	-1.48181700	10.78797900	2.77709600
C	0.34493900	11.19129200	1.71650500
C	1.56713900	11.90651200	1.73971800
C	2.52505600	11.79972500	0.60096200
C	2.73693500	10.55570400	-0.04185300
C	3.64285900	10.47618000	-1.07866300
H	3.84094500	9.52967800	-1.57587000
C	4.33094100	11.63885900	-1.48554900
C	4.03456600	12.83391300	-0.78843100
C	4.67993500	14.11008700	-1.19357600
C	5.95116100	12.81170600	-2.86781200
C	5.30572400	11.65797700	-2.53211800
C	-3.22062000	13.40140400	9.45964100
C	-1.98697800	12.75536500	9.57393400
C	-1.13032800	12.68137200	8.47682800
C	-1.49441700	13.25581100	7.24818700
C	-2.73756600	13.89425500	7.14111500
C	-3.59439900	13.96830600	8.24123800
H	-3.88716600	13.45846900	10.31583300
H	-1.69432400	12.30157100	10.51689400
H	-0.17823900	12.16454400	8.56500300
H	-3.02807400	14.33408900	6.19126100
H	-4.55334300	14.46996400	8.14368900

C	9.00042200	12.57049300	-5.89227800
C	9.35065600	12.86128400	-4.57123500
C	8.36518900	12.96232900	-3.59072300
C	7.01214800	12.77641300	-3.91813300
C	6.67171900	12.47661700	-5.24437700
C	7.66001300	12.37640800	-6.22573300
H	9.76989900	12.49239000	-6.65542600
H	10.39393500	13.00189300	-4.30197000
H	8.64304700	13.17181200	-2.56106900
H	5.62750500	12.32483500	-5.50264300
H	7.37983200	12.14728700	-7.25032500
C	6.20056600	15.30347200	-2.67791900
H	6.29035300	15.92618900	-1.78748900
C	0.99144800	14.78864200	7.02065800
C	0.58365500	16.21147900	6.63456800
H	2.07600200	14.72215100	7.11104000
H	0.54228200	14.50192000	7.97008200
H	0.91626000	16.91432000	7.40696000
H	1.04900900	16.49828700	5.68781000
H	-0.50415000	16.30018200	6.53903500
H	7.19460400	15.13337100	-3.08826800
C	5.29861000	15.98709100	-3.70700000
H	5.73073100	16.95222300	-3.99508200
H	5.19484600	15.37721200	-4.61124300
H	4.30718900	16.16888500	-3.28363200
H	-1.95898300	11.79631000	5.09133800
H	5.57542300	10.73749500	-3.03768600
H	2.21329500	9.66811100	0.30025900
H	0.08831900	10.57633800	0.85915300

**[AmL<sup>1</sup>(NO<sub>3</sub>)<sub>3</sub>]**

Atoms	X	Y	Z
Am	3.55984900	14.41824300	1.96176200
O	2.02958000	14.73081300	3.98744000
O	5.60418800	13.72834600	0.55659300
N	1.86233700	12.40510600	2.66191200
N	3.56618000	12.05252600	0.59741300
N	0.33380000	14.16403500	5.41459700
C	1.18169300	13.89957200	4.35673700

C	1.03087500	12.60628400	3.68013300
O	4.59564400	12.72561000	3.52292300
C	0.05110500	11.67163600	4.09922500
O	5.22231700	14.79165400	3.76894400
N	6.02643400	13.38347800	-1.64790300
C	-0.78099000	12.03841600	5.20527300
O	6.03210400	13.24533100	5.09384600
N	3.78389900	17.28932700	1.51565400
C	-0.63383000	13.24089300	5.83428500
O	4.77294600	16.48074500	1.35939400
N	1.84699500	14.52107500	-0.51615600
O	3.86859200	18.47566900	1.27582400
N	5.31648400	13.57489600	4.16814700
O	2.69934000	16.74565200	1.94413500
O	3.09555900	14.81169900	-0.55690900
O	1.16957000	14.45063400	-1.53088200
O	1.36528600	14.28224100	0.64419500
C	-0.00960000	10.45794300	3.40028200
H	-0.73535800	9.70051300	3.68620300
C	0.86896800	10.21805700	2.33708900
C	1.79732500	11.25041300	1.99402100
C	2.72058300	11.05061500	0.89479600
C	2.72009700	9.81822900	0.19614100
C	1.77423300	8.79847900	0.56782400
H	1.78096700	7.86243200	0.01590700
C	0.88727900	8.99063100	1.58307300
H	0.17824800	8.21128300	1.84836700
C	3.67453000	9.66938300	-0.83042300
H	3.72796000	8.73587900	-1.38435700
C	4.54297800	10.70548600	-1.12495700

C	4.44822800	11.90384000	-0.38734900
C	5.39315300	13.08776500	-0.48873600
C	-3.18011800	14.09005700	9.18904200
C	-1.82503700	13.81756300	9.39516300
C	-0.98914500	13.55991300	8.30937500
C	-1.50172300	13.57490100	7.00203400
C	-2.86372500	13.84023600	6.80356000
C	-3.69769000	14.09933400	7.89330400
H	-3.82930600	14.29118800	10.03650400
H	-1.41903500	13.79915600	10.40254500
H	0.06155600	13.33538800	8.47337100
H	-3.26552900	13.84596300	5.79430200
H	-4.75068200	14.30817300	7.72701700
C	7.03026500	14.48069000	-1.62123100
H	7.52927200	14.43153800	-0.65236300
C	0.44213300	15.52897400	5.99692900
C	-0.32441900	16.56735000	5.17700700
H	1.50547900	15.77004400	6.01964200
H	0.07267200	15.48308500	7.01921600
H	-0.20878100	17.55068600	5.64524200
H	0.06865500	16.63074200	4.15886600
H	-1.39339900	16.33167500	5.13829400
H	7.76045100	14.24675800	-2.40169000
C	6.41743600	15.86382600	-1.84206600
H	7.21933800	16.61024200	-1.87038800
H	5.87554300	15.91080800	-2.79257000
H	5.73674400	16.12558300	-1.02845300
H	-1.52819200	11.34575300	5.57470500
H	5.28180700	10.59894400	-1.90863300
C	5.54913200	12.96325200	-2.93846000



C	6.41618500	12.27989800	-3.80105000
C	4.24681400	13.27834700	-3.34523900
C	5.97234000	11.89373600	-5.06543400
H	7.42621500	12.04698700	-3.47492300
C	3.81030700	12.87633800	-4.60987800
H	3.59336000	13.84087800	-2.68433100
C	4.66653800	12.18676100	-5.46994800
H	6.64510000	11.36159100	-5.73226100
H	2.79893600	13.11985400	-4.92230200
H	4.32266800	11.88450300	-6.45521900

**[AmL<sup>2</sup>(NO<sub>3</sub>)<sub>3</sub>]**

Atoms	X	Y	Z
Am	3.31022900	14.83830700	1.93015800
O	2.03311900	14.79728100	4.16948300
O	5.18335300	14.50930100	0.18027100
N	1.76713600	12.65556300	2.58250700
N	3.33774000	12.56660300	0.41384300
N	0.42232500	14.05950200	5.61856100
C	1.20363500	13.92775900	4.48574900
C	0.99565700	12.73066500	3.66291500
O	4.69536600	13.05884300	3.06976800

C	0.01583300	11.76590300	4.00422300
O	5.14448400	15.11788900	3.59872000
N	5.92918400	13.69991300	-1.82699800
C	-0.74061700	11.99041100	5.19839100
O	6.24240300	13.48449100	4.56226900
N	3.32038200	17.74867200	1.86063200
C	-0.53286100	13.09725300	5.97156900
O	4.32546500	17.04000600	1.48880700
N	1.30542700	15.13960000	-0.27296100
O	3.31874500	18.96094500	1.80204400
N	5.39771900	13.87311000	3.77797600
O	2.31227500	17.07771700	2.30092500
O	2.53845500	15.43679300	-0.44807200
O	0.47269200	15.25504900	-1.15499400
O	1.00205200	14.68827600	0.89285600
C	-0.12504400	10.66787800	3.14020900
H	-0.86050900	9.89666200	3.35598500
C	0.67651700	10.57138600	1.99808600
C	1.62201200	11.61480200	1.76054100
C	2.46889300	11.56798800	0.58562500
C	2.35972800	10.47764700	-0.32971900
C	1.39193400	9.44158300	-0.05352900
H	1.30988400	8.61493000	-0.75403000
C	0.59582000	9.48568500	1.04878200
H	-0.12577300	8.69448200	1.23340400
C	3.19676600	10.48492100	-1.45000500
H	3.13428700	9.68236100	-2.18097100
C	4.12113700	11.52760000	-1.63041800
C	4.15197200	12.53872300	-0.63828800
C	5.11158100	13.64937100	-0.71049800

C	5.89367200	12.70911100	-2.81396800
C	5.03108300	11.65267600	-2.72731100
C	-2.85288700	13.50220700	9.56496600
C	-1.48469000	13.22941300	9.64701400
C	-0.72193600	13.11645400	8.48547600
C	-1.32148600	13.27787100	7.22570800
C	-2.69598600	13.54268400	7.15107800
C	-3.45664100	13.65691500	8.31662100
H	-3.44499800	13.59085000	10.47142400
H	-1.01144900	13.09812900	10.61595800
H	0.33921700	12.89103200	8.55193300
H	-3.16454300	13.66314100	6.17847400
H	-4.52000900	13.86757900	8.24628800
C	8.56600700	12.83944000	-6.17545100
C	9.07073900	12.59954200	-4.89448000
C	8.21227100	12.57613800	-3.79628600
C	6.83561100	12.79468900	-3.96827300
C	6.33544500	13.02571500	-5.25725500
C	7.19855500	13.05083400	-6.35476500
H	9.23709600	12.85879500	-7.02951600
H	10.13313700	12.42447100	-4.75041800
H	8.60579100	12.37623900	-2.80308400
H	5.27076000	13.19140100	-5.39480100
H	6.80001100	13.23698100	-7.34804000
C	6.73214900	14.94502100	-1.96881000
H	7.07051200	15.20756300	-0.96635400
C	0.57293500	15.34577900	6.35160300
C	-0.22165200	16.47763700	5.69866800
H	1.63863800	15.57776100	6.34955800
H	0.25329300	15.18140700	7.37842300

H	-0.07936000	17.39574400	6.27881300
H	0.12691400	16.66579000	4.67975300
H	-1.29286700	16.24958400	5.67905000
H	7.60047800	14.71614200	-2.58310700
C	5.90617500	16.08222400	-2.57201900
H	6.52026700	16.98797300	-2.61761800
H	5.58044100	15.83770400	-3.58890800
H	5.02748600	16.29757300	-1.95797400
H	-1.47825100	11.26373300	5.51846800
H	5.05873700	10.89304800	-3.49973700

**[AmL<sup>3</sup>(NO<sub>3</sub>)<sub>3</sub>]**

Atoms	X	Y	Z
Am	3.59339600	14.34982300	2.01825700
O	2.17300500	14.60716200	4.08635300
O	5.60682900	13.76198800	0.57962900
N	1.94377500	12.28523600	2.72401400
N	3.60319900	11.98600200	0.63722900
N	0.40159100	14.11630400	5.44211600
C	1.27337400	13.81180600	4.41135200
C	1.08045500	12.53627500	3.71975500
O	4.74814200	12.64830400	3.47935400
C	0.03278500	11.67241300	4.09140500
O	5.31203200	14.72675200	3.76928800

N	5.96991200	13.43976700	-1.63832200
C	-0.81917200	12.06515700	5.16684700
O	6.23633500	13.16798800	5.00134100
N	3.68669800	17.23944700	1.61229600
C	-0.62861200	13.25164500	5.81896800
O	4.70511500	16.47623600	1.42356600
N	1.79653400	14.42041200	-0.40565400
O	3.71780600	18.43315100	1.39567900
N	5.46708100	13.50150000	4.12097200
O	2.63271800	16.64300000	2.04705500
O	3.03592000	14.74185800	-0.48115700
O	1.09412900	14.33113100	-1.40221500
O	1.35174200	14.17216700	0.76664400
C	-0.08240300	10.47324900	3.35199800
H	-0.87577500	9.76784800	3.58276600
C	0.81229300	10.21493900	2.33546700
C	1.83540300	11.15002700	2.03698400
C	2.83189000	10.93273800	0.95353300
C	2.99303000	9.69765000	0.30895600
C	3.96276600	9.57560400	-0.68081600
H	4.11597100	8.62425000	-1.18136400
C	4.74213800	10.67962800	-1.01799600
C	4.52399800	11.87616900	-0.32920500
C	5.39274300	13.11216400	-0.45981900
C	-3.24825800	14.20144500	9.08819800
C	-1.91382300	13.87103400	9.33940500
C	-1.05287800	13.58093500	8.28183600
C	-1.51951500	13.62089000	6.95787000
C	-2.86148400	13.94415600	6.71389600
C	-3.72030700	14.23603300	7.77560700

H	-3.91692000	14.42805800	9.91378700
H	-1.54370500	13.83295300	10.35996000
H	-0.01888200	13.31165300	8.48083400
H	-3.22772100	13.97054900	5.69153500
H	-4.75699400	14.49049300	7.57427700
C	6.91475400	14.58856300	-1.64663800
H	7.44200600	14.57362500	-0.69172100
C	0.56437600	15.47297700	6.03415400
C	-0.08586100	16.55889400	5.17578200
H	1.63790700	15.64533600	6.11930500
H	0.13372200	15.44988100	7.03280900
H	0.05265900	17.52948400	5.66413200
H	0.37738200	16.61062800	4.18703500
H	-1.16153500	16.38437100	5.06456700
H	7.63468700	14.38716000	-2.44544900
C	6.22375200	15.93550000	-1.85960200
H	6.98410800	16.72259500	-1.91688800
H	5.65244500	15.94555000	-2.79379700
H	5.55422900	16.16819300	-1.02820300
H	-1.61836600	11.41109000	5.49542300
H	5.50176200	10.61172300	-1.78603000
C	5.48089400	12.98287300	-2.91261100
C	6.35994100	12.33941100	-3.79333100
C	4.15375700	13.22579400	-3.28650800
C	5.90426600	11.92008400	-5.04284600
H	7.38946800	12.16364700	-3.49319700
C	3.70625400	12.79138500	-4.53651200
H	3.48966400	13.75962600	-2.61263100
C	4.57477000	12.14071600	-5.41441700
H	6.58660900	11.41889600	-5.72376900

H	2.67577000	12.97932700	-4.82390300
H	4.22159300	11.81289200	-6.38815800
H	0.71418800	9.30449200	1.75589200
H	2.39472200	8.83848600	0.58824200

**[AmL<sup>4</sup>(NO<sub>3</sub>)<sub>3</sub>]**

Atoms	X	Y	Z
Am	3.21988000	14.79015000	1.84897500
O	1.96156500	14.80380500	4.05009000
O	5.16443500	14.40977200	0.25155700
N	1.67002200	12.60640400	2.50248400
N	3.26703900	12.48104800	0.38418900
N	0.42036600	14.07271100	5.56883700
C	1.15849600	13.92458600	4.40644000
C	0.93567200	12.70984300	3.61796100
O	4.52423900	13.05840700	3.15693400
C	-0.01548900	11.75482700	4.02766400
O	5.04021900	15.13768800	3.52067300
N	5.93216200	13.66186600	-1.76664800
C	-0.73226800	11.98993300	5.23908000

O	6.05783100	13.55363000	4.64163900
N	3.20686500	17.70041500	1.68700200
C	-0.50865900	13.11534500	5.98265800
O	4.22470800	16.99054500	1.35472600
N	1.30232600	15.01152000	-0.44326200
O	3.19482600	18.91046600	1.58912700
N	5.24294500	13.90419600	3.80832400
O	2.19804800	17.03456900	2.13257300
O	2.54048200	15.30946900	-0.57923500
O	0.50678200	15.08801700	-1.36343100
O	0.95304500	14.60304000	0.72470000
C	-0.16945800	10.62615300	3.19124200
H	-0.88244000	9.84970800	3.45417400
C	0.59087900	10.52119400	2.04540900
C	1.51581500	11.54269000	1.71380300
C	2.37141500	11.49989800	0.50034800
C	2.27329600	10.48878300	-0.48817100
C	3.10872400	10.51799000	-1.58535500
H	3.03111100	9.75778000	-2.35766500
C	4.07313900	11.54537200	-1.70326400
C	4.10364800	12.49408600	-0.66288500
C	5.08613900	13.58365700	-0.67130800
C	5.89298400	12.72643300	-2.80082900
C	4.99906900	11.69123800	-2.77861900
C	-2.69732900	13.57525400	9.65043600
C	-1.32572900	13.30995100	9.68722000
C	-0.60528400	13.17942000	8.50074900
C	-1.25156700	13.31564100	7.26133300
C	-2.62924200	13.57267600	7.23209300
C	-3.34720500	13.70476100	8.42252100



H	-3.25635600	13.67759100	10.57624000
H	-0.81670100	13.19831200	10.64033600
H	0.45874900	12.96012300	8.53221100
H	-3.13390200	13.67311400	6.27539300
H	-4.41349700	13.90932600	8.38752100
C	8.61648000	12.95749000	-6.11491900
C	9.09258900	12.61611800	-4.84612700
C	8.21807300	12.55881500	-3.76184100
C	6.85431000	12.84490700	-3.93617000
C	6.38213100	13.17761300	-5.21338100
C	7.26148700	13.23653500	-6.29657900
H	9.30002600	13.00304600	-6.95803600
H	10.14486600	12.38865900	-4.70098800
H	8.58874700	12.28122500	-2.77857400
H	5.32711400	13.39538300	-5.35280300
H	6.88526000	13.50156300	-7.28058100
C	6.78228400	14.88327900	-1.82332100
H	7.12017400	15.07004300	-0.80378800
C	0.59588800	15.37302200	6.27229200
C	-0.22387600	16.49184900	5.62822900
H	1.66038300	15.60587900	6.22812200
H	0.31285800	15.22630100	7.31236400
H	-0.06273800	17.41991900	6.18715100
H	0.08786000	16.66294100	4.59459500
H	-1.29466100	16.26196800	5.65117700
H	7.64702700	14.65773200	-2.44386300
C	6.00870500	16.08790900	-2.36127400
H	6.66505300	16.96474800	-2.35806400
H	5.67306200	15.91496500	-3.38949800
H	5.14157700	16.31074500	-1.73424700

H	-1.44869700	11.26048000	5.59849700
H	5.01451500	10.96972400	-3.58706200
H	1.53555700	9.69972700	-0.40037500
H	0.47679200	9.65251800	1.40746000

**[EuL<sup>1</sup>(NO<sub>3</sub>)<sub>3</sub>]**

Atoms	X	Y	Z
Eu	3.54963700	14.39062600	1.95585200
O	2.06282900	14.68935800	3.97693400
O	5.56450900	13.72105300	0.57888700
N	1.86442200	12.37454200	2.66064800
N	3.55311900	12.03247400	0.60387400
N	0.35483000	14.15368500	5.40195200
C	1.20236300	13.87360300	4.34838800
C	1.03472200	12.58098200	3.67649400
O	4.58080000	12.72835100	3.49031200
C	0.04531400	11.65622500	4.09440200
O	5.17677000	14.80368700	3.72687700
N	6.01680000	13.38602000	-1.62100400
C	-0.78367600	12.03765100	5.19836000
O	5.99752700	13.27806600	5.06642400
N	3.76128500	17.22964600	1.54195500

C	-0.62393300	13.24188800	5.82231300
O	4.74138400	16.43188100	1.32015500
N	1.82320300	14.50078800	-0.45994300
O	3.82765600	18.42252600	1.32460300
N	5.28321600	13.59122000	4.13295200
O	2.70067100	16.67422600	2.01276300
O	3.07648500	14.77059200	-0.51027700
O	1.13757300	14.44362000	-1.47046500
O	1.34703400	14.27170900	0.70207600
C	-0.02465200	10.44229900	3.39520200
H	-0.75702000	9.69074300	3.67986800
C	0.85336000	10.19662700	2.33164000
C	1.78797500	11.22328300	1.99178300
C	2.70913900	11.02751600	0.89210200
C	2.70591100	9.80048000	0.18550700
C	1.75608500	8.78257800	0.55436500
H	1.75856100	7.84879300	-0.00148500
C	0.86895500	8.97278100	1.57090500
H	0.15768500	8.19362800	1.83093700
C	3.65992100	9.65981100	-0.84293200
H	3.71362000	8.73115200	-1.40497200
C	4.52799900	10.69919300	-1.12978600
C	4.43373800	11.89190500	-0.38232500
C	5.37181000	13.08245400	-0.47026500
C	-3.16882000	14.13115600	9.16786700
C	-1.81533600	13.85338100	9.37751900
C	-0.97974500	13.58278100	8.29469200
C	-1.49087600	13.58970100	6.98665800
C	-2.85125100	13.86071000	6.78479000
C	-3.68496200	14.13283300	7.87153800

H	-3.81779300	14.34244600	10.01302900
H	-1.41040600	13.84102100	10.38543700
H	0.06966900	13.35442400	8.46155500
H	-3.25181200	13.86106300	5.77503700
H	-4.73663900	14.34605400	7.70244700
C	7.01553400	14.48740600	-1.57910000
H	7.49797900	14.44051800	-0.60180800
C	0.48060900	15.52089200	5.97576300
C	-0.23011800	16.57279400	5.12302200
H	1.54901400	15.73436000	6.03042900
H	0.07766700	15.49419000	6.98587200
H	-0.11517500	17.55393900	5.59614500
H	0.20775600	16.62774100	4.12296800
H	-1.30101700	16.35798000	5.03968700
H	7.75983300	14.25510500	-2.34677200
C	6.40264500	15.86873000	-1.81124600
H	7.20379600	16.61629300	-1.83116500
H	5.87372700	15.91250400	-2.76924400
H	5.71130100	16.13146900	-1.00690200
H	-1.53952300	11.35593800	5.57065000
H	5.26586200	10.59904100	-1.91527900
C	5.54704600	12.97603000	-2.91744000
C	6.41971200	12.30422500	-3.78323900
C	4.24503400	13.29082000	-3.32601600
C	5.98200200	11.92916000	-5.05314600
H	7.42922900	12.07146500	-3.45547200
C	3.81480800	12.89984600	-4.59618400
H	3.58695900	13.84341000	-2.66104200
C	4.67680100	12.22178300	-5.45974800
H	6.65905600	11.40584100	-5.72261100

H	2.80379700	13.14269700	-4.91034500
H	4.33772600	11.92813700	-6.44928100

**[EuL<sup>2</sup>(NO<sub>3</sub>)<sub>3</sub>]**

Atoms	X	Y	Z
Eu	3.32161500	14.80282000	1.93022100
O	2.07573700	14.74812900	4.15427400
O	5.16793400	14.48082600	0.20883800
N	1.78240600	12.61299500	2.58284900
N	3.33954500	12.53340200	0.42583900
N	0.44349200	14.04853800	5.59876000
C	1.23075000	13.89612000	4.47302300
C	1.00808900	12.69740200	3.65783400
O	4.68609100	13.05807800	3.05984600
C	0.01532000	11.74540200	3.99719700
O	5.11827300	15.12539500	3.56767600
N	5.91320300	13.70059000	-1.81035700
C	-0.74358800	11.98901200	5.18653900
O	6.21966800	13.51101100	4.55564100
N	3.36281300	17.67468800	1.89924400
C	-0.52586500	13.10002200	5.95212500
O	4.32699500	16.97386300	1.43120700

N	1.30528100	15.11344100	-0.19813900
O	3.36473500	18.88922600	1.87777300
N	5.37666800	13.88474200	3.76111400
O	2.38491000	16.99929800	2.39752300
O	2.54228600	15.37667700	-0.39839200
O	0.46098500	15.24189000	-1.06807100
O	1.01055600	14.68572500	0.97614600
C	-0.13236300	10.64541300	3.13557100
H	-0.87633000	9.88195100	3.34991600
C	0.67297500	10.53979000	1.99571100
C	1.62677400	11.57529500	1.76191900
C	2.47384300	11.53138800	0.58893100
C	2.36383200	10.44705800	-0.33241100
C	1.39175300	9.41350100	-0.05878100
H	1.30718200	8.58875600	-0.76129600
C	0.59197400	9.45740500	1.04197400
H	-0.13302400	8.66783100	1.22044900
C	3.20104300	10.46257400	-1.45319600
H	3.13924700	9.66565700	-2.19040700
C	4.12240200	11.50980100	-1.62687400
C	4.15151900	12.51305700	-0.62690900
C	5.10209700	13.63059100	-0.69079900
C	5.88364800	12.71614600	-2.80453700
C	5.03046500	11.65105700	-2.72387400
C	-2.86153300	13.55784100	9.52914800
C	-1.49507700	13.27950600	9.62121100
C	-0.72709400	13.14955000	8.46494400
C	-1.31944600	13.29907500	7.20025400
C	-2.69221200	13.56986500	7.11579500
C	-3.45816700	13.70117100	8.27603600

H	-3.45773900	13.65981300	10.43152300
H	-1.02731100	13.15718800	10.59399300
H	0.33264000	12.92004700	8.53940800
H	-3.15506900	13.68205500	6.13949600
H	-4.52007500	13.91645000	8.19787200
C	8.55367600	12.88642400	-6.16600800
C	9.06358700	12.66931400	-4.88299300
C	8.20557100	12.63361900	-3.78486800
C	6.82382200	12.81658000	-3.95864700
C	6.31891700	13.02512500	-5.24966800
C	7.18151300	13.06271000	-6.34718300
H	9.22445000	12.91557100	-7.02004500
H	10.12990100	12.52150000	-4.73729300
H	8.60361400	12.45106100	-2.79014600
H	5.25064800	13.16440500	-5.38859600
H	6.77891200	13.23150100	-7.34193100
C	6.69030900	14.96262800	-1.94832100
H	7.04471300	15.21550200	-0.94880400
C	0.60829100	15.34020700	6.31955900
C	-0.13006500	16.48720800	5.62753100
H	1.68013200	15.54136300	6.34887400
H	0.25135700	15.19914300	7.33741600
H	0.00907000	17.40398100	6.21067900
H	0.26729400	16.66290900	4.62449100
H	-1.20469300	16.28455500	5.56306500
H	7.54934800	14.76056500	-2.58451000
C	5.82969600	16.09346700	-2.51454800
H	6.42653600	17.01065600	-2.56092100
H	5.48463500	15.85773100	-3.52719700
H	4.96224700	16.28407200	-1.87680800

H	-1.49203000	11.27479700	5.50965500
H	5.06476000	10.89714800	-3.50164100

**[EuL<sup>3</sup>(NO<sub>3</sub>)<sub>3</sub>]**

Atoms	X	Y	Z
Eu	3.56671400	14.32501800	2.00099400
O	2.18491800	14.57332600	4.04927800
O	5.55635700	13.75026800	0.60948200
N	1.93607400	12.24969800	2.71460600
N	3.58468300	11.95965800	0.64322200
N	0.41801900	14.10812100	5.41976700
C	1.28317200	13.78796000	4.38882800
C	1.08010200	12.50702700	3.71225800
O	4.70265900	12.67449400	3.47011600
C	0.03319900	11.64847200	4.09698300
O	5.24139300	14.76401500	3.71939300
N	5.96120100	13.44337800	-1.60301400
C	-0.81073300	12.05603500	5.17368700
O	6.16225400	13.24432400	4.99915500
N	3.64037600	17.18021500	1.60449300
C	-0.61257600	13.24970100	5.81129400
O	4.65202300	16.42898600	1.36396600
N	1.76659200	14.38461100	-0.36669800
O	3.65163100	18.37743000	1.39983200



N	5.40174700	13.54907600	4.09969500
O	2.61042600	16.57352800	2.07964900
O	3.01061700	14.68944900	-0.44741900
O	1.06046200	14.30429600	-1.36178400
O	1.32318800	14.14716600	0.80563800
C	-0.08550300	10.44305700	3.36771900
H	-0.87646400	9.73843900	3.60903200
C	0.80290700	10.17754900	2.34643100
C	1.82212500	11.11247900	2.03452600
C	2.81302900	10.90282400	0.94516500
C	2.96944100	9.67736800	0.28168700
C	3.93829400	9.56839900	-0.71063400
H	4.08888400	8.62466600	-1.22621500
C	4.72006400	10.67585100	-1.03178900
C	4.50350400	11.86262300	-0.32556400
C	5.36586200	13.10501600	-0.43655600
C	-3.20967500	14.24001900	9.08663400
C	-1.87220000	13.91773900	9.33223500
C	-1.01855800	13.61472500	8.27240300
C	-1.49551600	13.63320800	6.95159300
C	-2.84039300	13.94867200	6.71348900
C	-3.69193700	14.25357900	7.77738300
H	-3.87264400	14.47679900	9.91397000
H	-1.49400000	13.89611400	10.35031700
H	0.01785900	13.35188000	8.46732200
H	-3.21445800	13.95913000	5.69369100
H	-4.73094900	14.50189600	7.58035300
C	6.90149700	14.59599900	-1.58832500
H	7.40304000	14.58353100	-0.61971500
C	0.59052000	15.47176300	5.99312100

C	-0.03113200	16.55442200	5.10935400
H	1.66521500	15.63094200	6.09117800
H	0.14528900	15.46970700	6.98556000
H	0.10277900	17.52788200	5.59341400
H	0.45639300	16.59498800	4.13188700
H	-1.10525500	16.38671400	4.97458500
H	7.64317700	14.39593500	-2.36750700
C	6.21263700	15.94080200	-1.82094800
H	6.97305500	16.72882400	-1.86380600
H	5.66315000	15.94706600	-2.76824300
H	5.52478000	16.17521600	-1.00505800
H	-1.60979800	11.40858600	5.51551700
H	5.47893200	10.61746100	-1.80128700
C	5.48856900	12.99922700	-2.88778100
C	6.37964700	12.37054400	-3.76691000
C	4.16412300	13.24094000	-3.27252500
C	5.93891700	11.96465500	-5.02625300
H	7.40669700	12.19538400	-3.45813600
C	3.73178900	12.81996400	-4.53231900
H	3.49049100	13.76202300	-2.59790700
C	4.61245900	12.18404100	-5.40904500
H	6.63056300	11.47479700	-5.70603900
H	2.70349400	13.00653100	-4.82838500
H	4.27097300	11.86668500	-6.39039800
H	0.70289300	9.26174000	1.77530500
H	2.36721600	8.81653600	0.54766400

**[EuL<sup>4</sup>(NO<sub>3</sub>)<sub>3</sub>]**

Atoms	X	Y	Z
Eu	3.23732800	14.74486600	1.86505600
O	2.05390300	14.71390000	4.06469100
O	5.12029500	14.40540600	0.26159100
N	1.70283000	12.54066800	2.51546900
N	3.26329600	12.44636300	0.39254400
N	0.46039400	14.04612000	5.55819700
C	1.21305900	13.86766500	4.41014300
C	0.95843400	12.66152300	3.61978400
O	4.57038800	13.03165800	3.08682000
C	-0.02968000	11.73811500	4.01290300
O	5.05396800	15.11457900	3.47089000
N	5.90025400	13.67864800	-1.75905000
C	-0.75537000	11.99958800	5.21397000
O	6.12579600	13.53465200	4.54330300
N	3.21614000	17.62196900	1.78226000
C	-0.50626400	13.11991800	5.95825800
O	4.20060300	16.93503100	1.33704500
N	1.26686600	14.98969700	-0.31893100
O	3.19072800	18.83602900	1.73830700
N	5.28474100	13.88124800	3.73342600
O	2.24878700	16.93417900	2.28373800

O	2.50595900	15.26160300	-0.49488300
O	0.44438000	15.08632600	-1.21393900
O	0.94622500	14.58882800	0.85725100
C	-0.20807800	10.61868400	3.16832100
H	-0.95064300	9.86520700	3.41586300
C	0.56291200	10.49579900	2.03027100
C	1.52353500	11.48991600	1.71741800
C	2.38893100	11.44670100	0.51121000
C	2.32009200	10.42344400	-0.46713400
C	3.15860100	10.46283600	-1.56196200
H	3.10362700	9.69304200	-2.32672000
C	4.09691400	11.51356200	-1.68621600
C	4.10294800	12.46814300	-0.65095600
C	5.06009300	13.57886900	-0.66123900
C	5.88701200	12.73662600	-2.78834000
C	5.02118900	11.67755500	-2.76069300
C	-2.73748400	13.65743700	9.58978700
C	-1.37280800	13.36208900	9.64899600
C	-0.63804800	13.20639000	8.47445300
C	-1.26263100	13.34696000	7.22437700
C	-2.63360800	13.63453000	7.17282300
C	-3.36597600	13.79185500	8.35132300
H	-3.30768700	13.77950300	10.50634900
H	-0.88051400	13.24670300	10.61043600
H	0.42027800	12.96398000	8.52353800
H	-3.12140700	13.73955300	6.20793000
H	-4.42671100	14.02022400	8.29880000
C	8.61417900	13.00991800	-6.09610600
C	9.09892300	12.72233100	-4.81724700
C	8.22266000	12.65256500	-3.73522500

C	6.84797100	12.87179000	-3.92161700
C	6.36784400	13.15071500	-5.20876400
C	7.24885700	13.22248400	-6.28980000
H	9.29915100	13.06549400	-6.93746300
H	10.15965300	12.54635700	-4.66242100
H	8.60082100	12.41601400	-2.74412600
H	5.30486900	13.31769200	-5.35741700
H	6.86588800	13.44591800	-7.28150300
C	6.70310600	14.93133900	-1.82589500
H	7.04489500	15.13192800	-0.81030200
C	0.66732200	15.34541800	6.25582400
C	-0.06765800	16.49639100	5.56669700
H	1.74295200	15.52699400	6.25625600
H	0.33271600	15.22411300	7.28367300
H	0.09840100	17.41629200	6.13776700
H	0.31054100	16.65661900	4.55377100
H	-1.14653700	16.31022800	5.52815900
H	7.56860400	14.73928800	-2.45635800
C	5.87630300	16.10429000	-2.35531600
H	6.49749500	17.00636400	-2.35969100
H	5.53668400	15.91721500	-3.37984800
H	5.00793700	16.29337500	-1.71884300
H	5.05903300	10.95070700	-3.56362000
H	-1.50108700	11.29577800	5.56491900
H	0.42455600	9.63809200	1.38196000
H	1.60496200	9.61461000	-0.37055700