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Author

Ruben, H.

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 $UO_2(OC(NH_2)_2)_3 SO_4$

Helena Ruben, Brock Spencer, Dávid H. Templeton,
and Allan Zalkin

July 1979

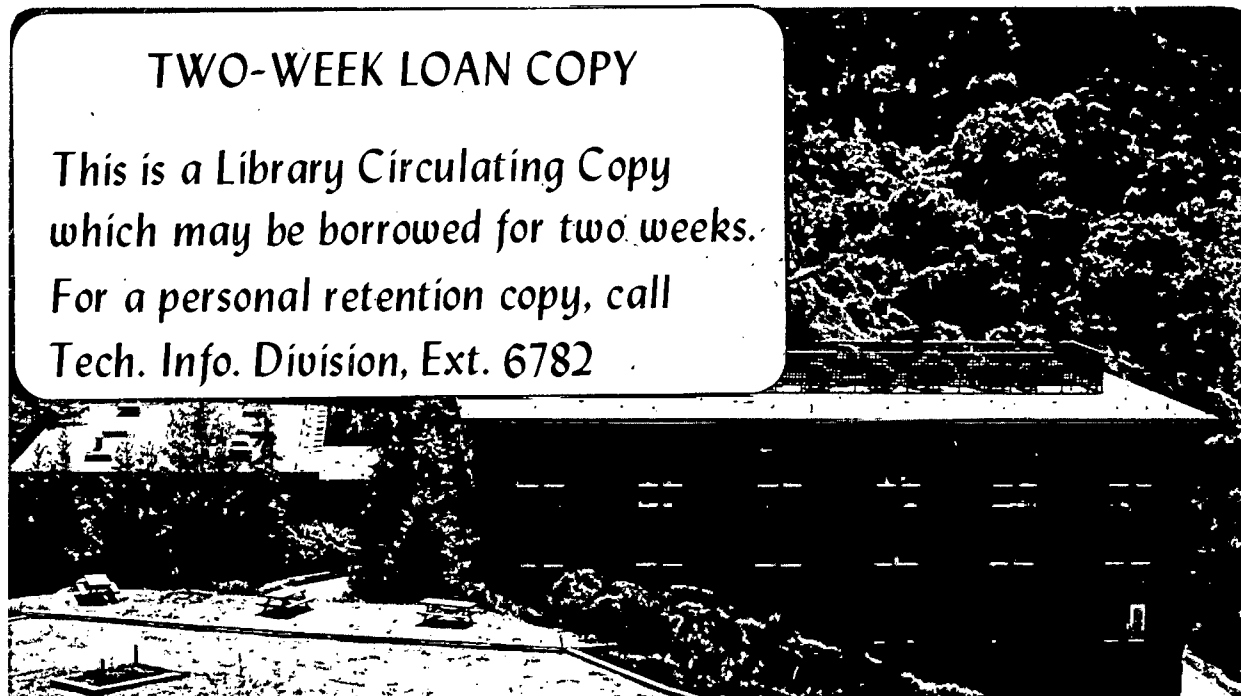
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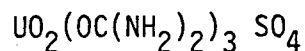
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Contribution from
The Materials and Molecular Research Division,
Lawrence Berkeley Laboratory,
and Department of Chemistry,
University of California, Berkeley, California 94720

STRUCTURE OF TRIS(UREA)DIOXOURANIUM(VI) SULFATE,



Helena Ruben, Brock Spencer¹, David H. Templeton,
and Allan Zalkin*

JULY 1979

As part of a study of structures of uranium complexes we have determined the crystal structure of tris(urea)uranyl sulfate by single crystal x-ray diffraction methods. The uranyl ion is coordinated to oxygen atoms from the three urea molecules and from the sulfate ions in a pentagonal bipyramid arrangement in which the pentagonal bipyramids are bridged by the sulfate ions to form an infinite chain. This result is in contrast to the structure of pentakis(urea)dioxouranium(VI) dinitrate² in which the oxygen atoms of the five urea molecules are coordinated to the uranyl ion to form discrete complexes with the same pentagonal bipyramidal geometry; the nitrate ions are not coordinated to the uranyl ion.

EXPERIMENTAL SECTION

Slow evaporation of aqueous solutions of sulfate and urea yielded fluorescent lime green crystals similar in color to crystals of $\text{UO}_2(\text{OC}(\text{NH}_2)_2)_5(\text{NO}_3)_2 \cdot 2$. The crystals were stable in air during the month of x-ray investigation. Weissenberg photography showed the crystal to be monoclinic.

A crystal of approximate dimensions 0.09 x 0.10 x 0.14 mm was glued to a glass fiber and examined with a Picker FACS-I automatic diffractometer equipped with a graphite monochromator and a Mo x-ray tube. ω -scans of the 200, $0\bar{4}0$, and $00\bar{2}$ reflections showed peaks with widths at half-height of 0.15, 0.21, and 0.13°, respectively. A least-square refinement of the setting angles of twelve manually centered reflections ($45^\circ < 2\theta < 50^\circ$) using Mo $K\alpha_1$ ($\lambda = 0.70930 \text{ \AA}$) radiation at $22 \pm 1^\circ\text{C}$ gave $a = 7.619(2) \text{ \AA}$, $b = 24.706(8) \text{ \AA}$, $c = 6.928(2) \text{ \AA}$, $\beta = 91.06(2)^\circ$, and $V = 1303.9 \text{ \AA}^3$. The observed extinctions are unique to space group $P2_1/n$. For $Z = 4$ and a molecular weight of 546.26, the calculated density is 2.78 g cm^{-3} ; the density measured by flotation in a mixture of tetrachloromethane and tri-bromomethane was 2.79 g cm^{-3} .

Intensity data were collected to 56° in 2θ using θ - 2θ scans with a scan speed of $2^\circ/\text{min}$ on 2θ , a scan range from 0.85° below the $K\alpha_1$ peak to 0.85° above the $K\alpha_2$ peak, and with backgrounds counted for 10 s at each end of the scan range. Three standard reflections,

measured after every 200th reflection, showed only random fluctuations in intensity and no indication of crystal decay. Intensities of 5958 reflections were measured.

An absorption correction was applied³ ($\mu = 120 \text{ cm}^{-1}$ for Mo $K\alpha$ radiation) with the crystal described by 9 faces. The crystal dimensions were adjusted to fit the intensity variations of 12 azimuthal scans. Maximum and minimum corrections were 3.15 and 1.82, respectively. Intensities were also corrected for Lorentz and polarization factors, and equivalent reflections were averaged to give 3153 unique reflections.

Trial coordinates for the uranium atom were obtained from a three-dimensional Patterson function. After two series of least-squares refinement followed by Fourier calculations all of the non-hydrogen atoms were found. After least-squares refinement for all non-hydrogen atoms, with only the uranium atom treated with anisotropic temperature factors, an empirical extinction correction was applied where $F_{\text{corr}} = F_{\text{obs}} (1 + 1.5 \times 10^{-7} I)$; F_{corr} and F_{obs} are the corrected and observed structure factors, and I is the observed intensity. Further cycles of least-squares refinement for all non-hydrogen atoms, followed by a difference Fourier calculation, showed peaks near expected hydrogen atom positions. For the final cycles of least-squares refinement, positional parameters for all twelve hydrogen atoms and a single isotropic hydrogen atom

temperature factor were also refined; the refinement converged to the positions given in Table I. Thermal parameters and structure factor amplitudes are available in the supplementary material. The full-matrix least-squares program minimizes the function $\sum w |\Delta F|^2 / \sum w F_o^2$ where the assigned weights $w = [\sigma(F)]^{-2}$ are derived from $\sigma(F^2) = [S^2 + (pF^2)^2]^{1/2}$ where S^2 is the variance due to counting statistics and $p = 0.01$. Neutral atom scattering factors for the non-hydrogen atoms from Doyle and Turner⁴ and for hydrogen from Stewart, Davidson and Simpson⁵ were used, and anomalous dispersion corrections⁶ were applied. The discrepancy indices with 218 parameters varied and 2491 data with $F^2 > 3\sigma(F^2)$ are

$$R = \frac{\sum ||F_o| - |F_c||}{\sum |F_o|} = 0.019$$

$$R_w = \frac{\sum [w(|F_o| - |F_c|)^2 / \sum w |F_o|^2]^{1/2}}{\sum |F_o|} = 0.017$$

R for all 3153 data is 0.035. The error in an observation of unit weight is 1.22. In the last cycle of refinement all parameter changes were less than 0.09σ . A difference Fourier calculation after the last cycle of refinement had a maximum electron density of $1.2 \text{ e } \text{Å}^{-3}$ which was near the uranium.

RESULTS AND DISCUSSION

Atomic positions, distances, and angles are listed in Tables I-III. The structure (Fig. 1) consists of chains of alternate tris(urea)dioxouranium (VI) ions and sulfate ions with sulfate ions contributing two oxygen atoms to the pentagonal bipyramid of oxygen atoms coordinated to the uranium (VI) ion. Two urea oxygen atoms (O(4) and O(5)) are perpendicular to the uranyl ion axis; the third urea oxygen atom (O(7)) is 0.16 Å from the equatorial plane defined by U, O(4), and O(5) while the two sulfate oxygen atoms are 0.30 Å (O(3)) and 0.20 Å (O(6)) from the equatorial plane on the side opposite to O(7). The urea molecules are planar. The H(9) and H(10) atoms appear to be out of the plane of their urea molecule but we attribute this as an inaccuracy in the determination of these hydrogen atom positions. One urea molecule is held approximately coplanar with the uranyl equatorial plane by hydrogen bonds to two of the sulfate oxygen atoms, (N(1)-H(1)---O(8)) and N(2)-H(3)---O(8) in Fig. 1), while the other two urea molecules are approximately perpendicular to the uranyl equatorial plane. Bond distances and angles for urea and for the uranium (VI) coordination polyhedron are in close agreement with those in $[\text{UO}_2(\text{OC}(\text{NH}_2)_2)_5](\text{NO}_3)_2$ ² and $[\text{UO}_2(\text{H}_2\text{O})(\text{OC}(\text{NH}_2)_2)_4](\text{NO}_3)_2$ ⁷. The present compound, with two sulfate oxygen atoms coordinated to the uranyl ion, is intermediate between the nitrate salts mentioned above in which the nitrate ions are not coordinated to the uranyl

ion so that anion bridging between cation complexes cannot occur, and the two forms of $2\text{UO}_2\text{SO}_4 \cdot 7\text{H}_2\text{O}$ ^{8,9} in which three sulfate oxygen atoms are coordinated to the uranyl ion resulting in complex anion bridging between cation complexes. Possible hydrogen bonds for which the N---O distance is less than 3.2 Å, the O---H distance is less than 2.4 Å, and the N-H---O angle is greater than 120° are listed in Table IV. The values in Table IV are comparable to the hydrogen bond lengths (2.99 Å, 3.03 Å) and angles (151°, 167°) found in urea.¹⁰

ACKNOWLEDGEMENT

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SUPPLEMENTARY MATERIAL AVAILABLE: Listing of structure factor amplitudes, listing of atomic thermal parameters (13 pages). Ordering information is given on any current masthead page.

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Table I. Positional Parameters^a

ATOM	X	Y	Z
U	.26435(2)	.62058(1)	.20427(2)
S	.1033(1)	.63504(4)	.7003(1)
O(1)	.4112(4)	.6762(1)	.2023(4)
O(2)	.1169(3)	.5655(1)	.2081(4)
O(3)	.2148(4)	.6473(1)	-.1265(4)
O(4)	.4541(3)	.5707(1)	.0078(4)
O(5)	.4685(3)	.5696(1)	.4021(4)
O(6)	.2192(3)	.6451(1)	.5319(4)
O(7)	.0180(4)	.6751(1)	.2015(4)
O(8)	-.0416(4)	.6738(1)	.6940(4)
O(9)	.0417(4)	.5798(1)	.7011(5)
N(1)	-.0876(7)	.7458(2)	.0344(6)
N(2)	-.1098(6)	.7425(2)	.3616(6)
N(3)	.6255(6)	.6288(2)	-.1564(8)
N(4)	.7101(6)	.5426(2)	-.1081(9)
N(5)	.7308(5)	.6092(2)	.3446(7)
N(6)	.7153(6)	.5188(2)	.3944(8)
C(1)	-.0581(5)	.7206(2)	.1987(6)
C(2)	.5938(5)	.5807(2)	-.0841(6)
C(3)	.6350(6)	.5655(2)	.3817(6)
H(1)	-.065(7)	.730(2)	-.084(8)
H(2)	-.139(8)	.773(2)	.041(8)
H(3)	-.102(7)	.724(2)	.468(8)
H(4)	-.174(7)	.768(2)	.369(8)
H(5)	.556(8)	.647(2)	-.149(9)
H(6)	.728(6)	.639(2)	-.215(8)
H(7)	.698(8)	.520(3)	-.052(9)
H(8)	.802(7)	.547(2)	-.167(8)
H(9)	.664(7)	.647(2)	.292(7)
H(10)	.861(7)	.609(2)	.261(7)
H(11)	.661(7)	.488(2)	.436(8)
H(12)	.829(7)	.515(2)	.379(8)

^aHere and in the following tables the numbers in parentheses are the estimated standard deviation in the least significant digit.

Table II. Selected Interatomic Distances (Å)

U	-O(1)	1.772(3)	N(1)-H(1)	0.92(5)
	-O(2)	1.765(3)	-H(2)	0.77(6)
	-O(3)	2.407(3)	N(2)-H(3)	0.87(5)
	-O(4)	2.353(3)	-H(4)	0.80(6)
	-O(5)	2.409(3)	N(3)-H(5)	0.70(6)
	-O(6)	2.380(3)	-H(6)	0.92(5)
	-O(7)	2.310(3)	N(4)-H(7)	0.69(6)
			-H(8)	0.82(5)
S	-O(3)	1.489(3)	-H(10)	1.16(5)
	-O(6)	1.497(3)	N(6)-H(11)	0.91(5)
	-O(8)	1.461(3)	-H(12)	0.88(5)
	-O(9)	1.443(3)		
C(1)	-O(7)	1.266(5)		
	-N(1)	1.314(5)		
	-N(2)	1.318(5)		
C(2)	-O(4)	1.275(5)		
	-N(3)	1.315(6)		
	-N(4)	1.305(6)		
C(3)	-O(5)	1.283(5)		
	-N(5)	1.331(6)		
	-N(6)	1.326(6)		

Table III. Selected Angles

Atoms	angle(deg)	Atoms	angle(deg)
O(1)-U -O(2)	179.4(1)	O(5) -C(3)-N(5)	120.3(5)
O(1)-U -O(3)	82.4(1)	O(5) -C(3)-N(6)	121.2(5)
O(1)-U -O(4)	90.4(1)	N(5) -C(3)-N(6)	118.5(5)
O(1)-U -O(5)	90.5(1)	H(1) -N(1)-H(2)	121(5)
O(1)-U -O(6)	85.0(1)	H(3) -N(2)-H(4)	113(5)
O(1)-U -O(7)	93.5(1)	H(5) -N(3)-H(6)	119(6)
O(3)-U -O(4)	71.3(1)	H(7) -N(4)-H(8)	119(6)
O(4)-U -O(5)	70.0(1)	H(9) -N(5)-H(10)	104(4)
O(5)-U -O(6)	72.2(1)	H(11)-N(6)-H(12)	115(5)
O(6)-U -O(7)	74.2(1)		
O(7)-U -O(3)	73.7(1)		
O(3)-S -O(6)	105.0(2)		
O(3)-S -O(8)	108.1(2)		
O(3)-S -O(9)	111.7(2)		
O(6)-S -O(8)	108.9(2)		
O(6)-S -O(9)	110.9(2)		
O(8)-S -O(9)	112.0(2)		
O(7)-C(1)-N(1)	120.4(4)		
O(7)-C(1)-N(2)	119.8(4)		
N(1)-C(1)-N(2)	119.9(4)		
O(4)-C(2)-N(3)	121.8(4)		
O(4)-C(2)-N(4)	119.9(4)		
N(3)-C(2)-N(4)	118.3(4)		

Table IV. Possible Hydrogen Bonds, Distances and Angles

Atoms	N-H Distance (Å)	H---O Distance (Å)	N....O Distance (Å)	N-H-O Angle (deg)
N(1)-H(1)---O(8) ⁱ	0.92(5)	2.09(5)	2.980(5)	162(5)
N(1)-H(2)---O(6) ⁱⁱ	0.77(6)	2.30(6)	3.070(5)	174(6)
N(2)-H(3)---O(8)	0.87(5)	2.05(6)	2.901(5)	168(5)
N(2)-H(4)---O(3) ⁱⁱ	0.80(6)	2.25(6)	3.034(5)	164(6)
N(3)-H(6)---O(8) ⁱⁱⁱ	0.92(5)	2.06(5)	2.973(5)	169(5)
N(4)-H(8)---O(9) ⁱⁱⁱ	0.82(5)	2.21(5)	3.016(5)	165(6)
N(5)-H(9)---O(1)	1.11(6)	2.14(5)	3.090(6)	141(4)
N(5)-H(10)---O(7) ^{iv}	1.16(5)	2.08(5)	3.090(6)	126(4)
N(6)-H(11)---O(5) ^v	0.91(5)	2.07(5)	2.952(6)	164(5)

i) x, y, z-1

ii) x-1/2, 1+1/2-y, 1/2+z

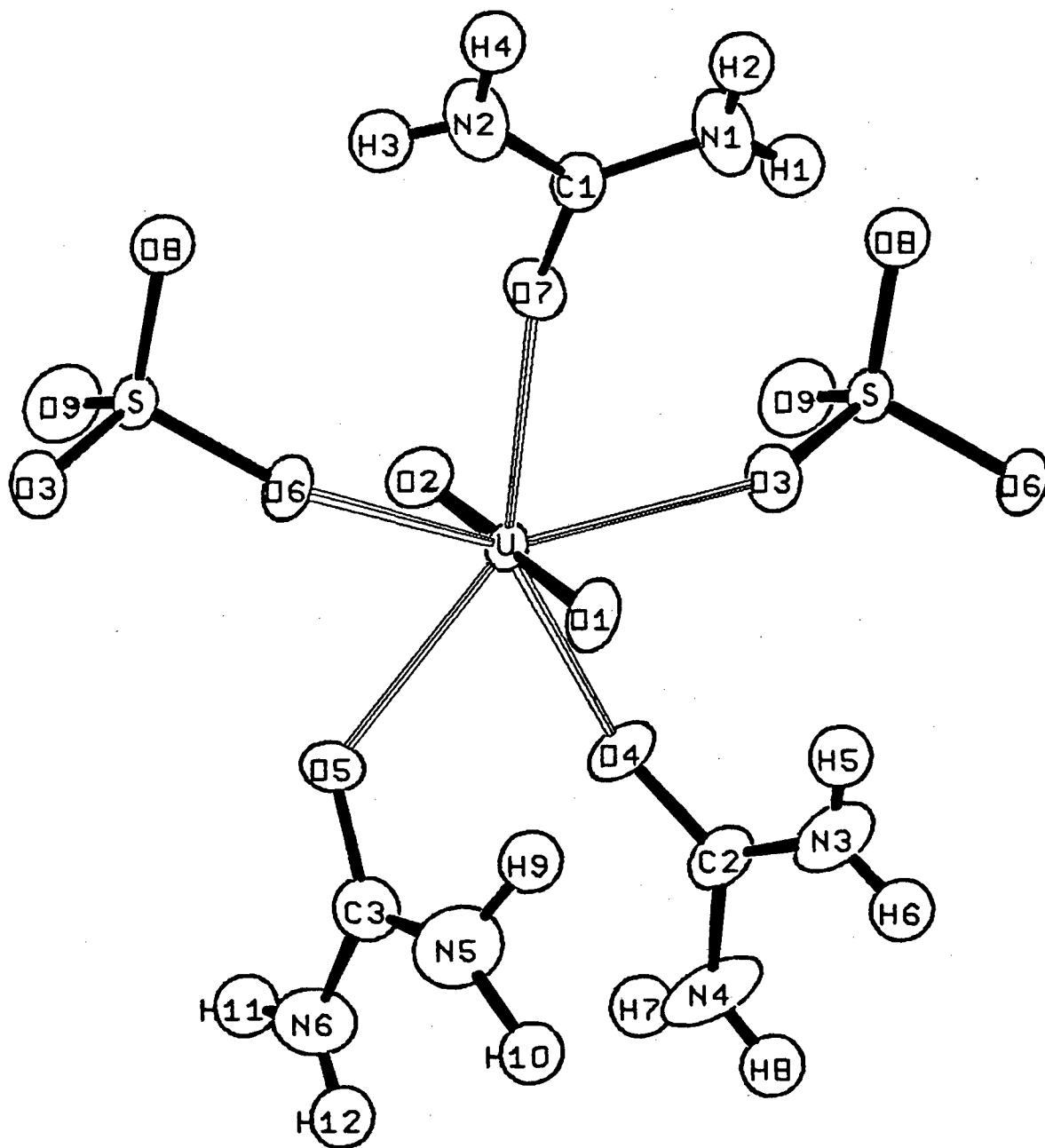
iii) 1+x, y, z-1

iv) 1+x, y, z

v) 1-x, 1-y, 1-z

FIGURE CAPTION

Fig. 1. ORTEP drawing of the tris(urea)dioxouranium (VI) sulfate structure. An additional sulfate group is included to show the bridging. The sulfate on the right is related to the one on the left by a translation along c of one unit cell length.

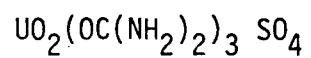


XBL 796-10086

Fig. 1

Supplementary Materials for:

STRUCTURE OF TRIS(UREA)DIOXOURANIUM (VI) SUFLATE



by Helena Ruben, Brock Spencer¹, David H. Templeton, and Allan Zalkin

Table Thermal Parameters^a

ATOM	B11	B22	B33	B12	B13	B23
U	1.288(5)	1.157(5)	.913(5)	.094(6)	.212(3)	.015(6)
S	1.62(4)	1.74(4)	.96(3)	.13(3)	.19(3)	.05(3)
O(1)	2.5(1)	2.1(1)	1.5(1)	-.7(1)	.35(5)	-.1(1)
O(2)	1.7(1)	1.6(1)	2.5(1)	-.33(9)	.35(5)	.0(1)
O(3)	2.3(1)	2.8(1)	1.14(9)	-.1(1)	-.20(8)	-.1(1)
O(4)	1.8(1)	2.3(1)	2.3(1)	.1(1)	.9(1)	-.2(1)
O(5)	1.5(1)	2.8(2)	2.4(1)	.5(1)	.05(5)	.6(1)
O(6)	2.3(1)	2.6(1)	1.1(1)	.1(1)	.45(5)	.0(1)
O(7)	3.0(1)	2.4(1)	2.8(1)	1.5(1)	.4(1)	.4(1)
O(8)	2.4(1)	3.3(2)	1.9(1)	1.1(1)	.5(1)	.2(1)
O(9)	3.0(1)	2.1(2)	3.5(2)	-.7(1)	.6(1)	.1(1)
N(1)	5.7(2)	3.0(2)	1.9(2)	2.2(2)	.6(2)	.6(2)
N(2)	5.2(2)	2.7(2)	1.8(2)	2.1(2)	.6(2)	.0(1)
N(3)	3.2(2)	3.7(3)	5.2(2)	1.8(2)	2.3(2)	1.4(2)
N(4)	3.2(2)	2.6(2)	7.1(3)	.8(2)	3.1(2)	.5(2)
N(5)	2.6(2)	5.0(3)	5.1(3)	-1.4(2)	-.2(2)	1.0(2)
N(6)	3.4(2)	4.2(3)	5.5(3)	1.6(2)	1.0(2)	2.1(2)
C(1)	2.1(2)	1.9(2)	1.5(1)	.4(1)	.2(1)	.1(1)
C(2)	2.1(2)	2.4(2)	1.7(2)	.1(1)	.5(1)	-.5(1)
C(3)	2.4(2)	3.6(3)	2.2(2)	.4(2)	-.1(1)	.3(2)

^aThe anisotropic temperature factor has the form $\exp(-0.25(B_{11}h^2a^2 + 2B_{12}hka^*b^* + \dots))$. One isotropic temperature was applied to all hydrogen atoms which refined to 4.9(4) Å².

OBSERVED STRUCTURE FACTORS, STANDARD DEVIATIONS, AND DIFFERENCES (ALL X 3.0)
((NH2)2CO)3 UO2 SO4 - TRISUREADIOXOURANATE (VI) SULFATE. F(0,0,0) = 2901

FOB AND FCA ARE THE OBSERVED AND CALCULATED STRUCTURE FACTORS.
SG = ESTIMATED STANDARD DEVIATION OF FOB. DEL = /FOB/ - /FCA/.
* INDICATES ZERO WEIGHTED DATA.

K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL
H,L=	0,	0		3	171	2	6	23	39	55	-14*	13	421	4	-1	11	111	5	4
4	1268	7	27	4	892	5	-5	24	143	5	-3	14	79	6	7	12	81	9	-4
6	250	2	1	5	481	4	8	25	255	4	-3	15	126	4	3	13	310	5	-4
8	749	6	-4	6	58	3	1	26	134	24	-21	16	20	34	-5*	14	123	5	9
10	138	2	4	7	271	3	1	27	0	34	-30*	17	514	4	1	15	52	14	-7*
12	505	7	-2	8	554	5	-5	28	183	8	-4	18	45	42	-6*	16	115	6	3
14	95	4	2	9	107	3	-2	29	270	5	1	19	74	7	7	17	329	4	-6
16	712	11	11	10	205	4	5	30	125	18	-3	20	0	51	-23*	18	94	7	-4
18	173	4	5	11	298	11	-8	H,L=	0,	4		21	438	5	-8	19	55	13	15*
20	563	9	-2	12	541	7	-7	0	244	4	-4	22	45	30	-12*	20	81	9	-3
22	228	4	-5	13	130	4	3	1	578	9	-9	23	40	20	23*	21	279	4	-2
24	327	6	3	14	223	3	-4	2	49	6	2	24	4	56	-18*	H,L=	0,	0	0
26	186	5	-5	15	304	8	-19	3	586	7	5	25	302	5	-2	0	304	3	2
28	163	5	4	16	467	13	-15	4	300	3	-1	26	55	60	26*	1	226	3	3
30	208	7	-2	17	80	34	-12*	5	393	5	4	27	27	40	18*	2	0	38	-16*
32	153	9	7	18	240	4	-4	6	22	22	-0*	H,L=	0,	0	6	3	209	4	2
H,L=	0,	0		19	275	6	-18	7	347	5	1	0	157	3	8	4	288	3	3
1	171	2	8	20	426	8	-12	8	202	3	0	1	569	8	-10	5	205	3	-2
2	764	4	11	21	791	101	-50*	9	190	3	-1	2	49	8	1	6	15	36	6*
3	169	2	2	22	115	4	-12	10	72	5	1	3	451	6	-0	7	213	4	-1
4	134	2	4	23	196	8	-5	11	398	5	-0	4	120	4	5	8	231	4	-4
5	194	1	5	24	285	12	0	12	200	3	1	5	353	3	4	9	150	4	4
6	484	3	2	25	49	55	-14*	13	233	3	6	6	24	28	11*	10	68	9	1
7	43	5	18	26	134	5	-3	14	66	6	1	7	371	5	-3	11	242	3	3
8	322	3	3	27	148	5	1	15	405	5	1	8	114	6	6	12	225	4	6
9	110	3	-1	28	190	5	-1	16	201	4	2	9	304	3	-5	13	109	6	-3
10	538	4	0	29	0	35	-8*	17	194	3	-1	10	34	15	25*	14	78	11	-2
11	82	20	-10*	30	155	5	-4	18	55	63	-26*	11	294	3	3	15	230	4	-4
12	318	3	1	31	144	5	1	19	461	6	3	12	72	7	2	H,L=	0,	9	9
13	161	16	-26	H,L=	0,	0	3	20	164	4	-16	13	221	3	4	1	123	5	3
14	517	4	0	1	344	4	1	21	188	3	-4	14	38	17	11*	2	246	4	-1
15	0103	-33*		2	508	5	3	22	56	12	-10*	15	362	4	2	3	122	7	7
16	406	5	4	3	461	5	10	23	322	4	2	16	85	6	11	4	39	19	28*
17	147	6	-23	4	62	3	9	24	92	34	-24*	17	200	4	-0	5	120	6	2
18	540	6	5	5	306	4	2	25	58	13	-5*	18	43	44	13*	6	223	4	-1
19	0	92	-29*	6	429	4	3	26	57	24	-11*	19	345	3	-2	H,L=	1,	-9	-9
20	401	6	-6	7	370	4	9	27	236	4	-2	20	56	13	7*	0	310	4	0
21	120	16	-23	8	50	5	1	28	63	70	-7*	21	113	6	6	1	71	10	-1
22	326	4	1	9	371	5	1	29	0	35	-3*	22	28	37	14*	2	38	45	34*
23	0	34	-43*	10	369	5	1	H,L=	0,	5		23	261	4	-7	3	114	6	5
24	290	3	-2	11	247	3	4	1	407	6	-5	24	50	14	15*	4	276	5	-3
25	131	5	-12	12	134	5	-2	2	83	4	4	H,L=	0,	7	5	51	23	-0*	-0*
26	225	5	-4	13	443	7	1	3	267	4	-1	1	255	4	2	H,L=	1,	-8	-8
27	0	36	-15*	14	323	3	1	4	31	11	25*	2	140	5	3	1	257	4	6
28	236	3	5	15	82	5	-7	5	372	4	4	3	222	3	4	2	242	3	5
29	91	7	-12	16	197	7	-9	6	70	5	-1	4	19	29	10*	3	193	6	-3
30	215	4	3	17	354	5	-2	7	140	3	5	5	257	3	1	4	0	42	-14*
31	0	46	-9*	18	196	27	-18	8	21	27	12*	6	133	4	-0	5	212	4	-6
32	234	6	-1	19	24	60	1*	9	400	6	-4	7	133	4	-5	6	267	3	-3
H,L=	0,	2		20	156	9	-8	10	58	7	0	8	69	8	-1	7	133	7	-4
1	313	2	18	21	323	4	-5	11	144	3	-1	9	299	4	-6	8	48	16	5*
2	76	2	4	22	207	26	-18	12	6	31	-12*	10	143	4	3	9	188	6	2

STRUCTURE FACTORS CONTINUED FOR
(NH2)2CO)3 UO2 SO4 - TRISUREADIOXOURANATE (VI) SULFATE.

K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL
10	259	5	-4	2	30	21	3*	H ₂ L=	1,	-3	24	142	6	-7	14	636	11	0	
11	133	6	4	3	430	5	-0	0	441	3	7	25	196	44	-63*	15	63	11	-2
12	107	6	1	4	110	4	3	1	595	5	10	26	195	9	-13	16	122	4	-5
13	192	4	4	5	280	4	-1	2	104	2	3	27	0	91	-37*	17	41	21	-10*
14	226	6	-1	6	65	5	5	3	388	3	-4	28	98116	-45*	18	487	6	6	
15	126	6	2	7	415	4	3	4	342	3	7	29	187	8	-23	19	12	33	-22*
	H ₂ L=	1,	-7	8	44	8	26	5	434	4	3	30	119	19	-25	20	219	14	-6
0	222	3	5	9	176	3	6	6	65	3	-5	31	15	48	-11*	21	95	7	-2
1	211	4	5	10	63	9	4	7	509	5	6		H ₂ L=	1,	-1	22	356	4	-3
2	36	17	11*	11	440	6	-1	8	256	3	6	0	603	3	4	23	0	63	-50*
3	242	4	5	12	39	17	34*	9	360	4	3	1	256	1	4	24	223	7	-2
4	254	3	-1	13	151	4	0	10	108	3	1	2	74	2	2	25	55118	8	-1*
5	152	4	0	14	72	8	2	11	400	5	7	3	436	2	2	26	230	3	2
6	37	39	18*	15	467	5	-1	12	275	4	5	4	614	3	10	27	29	45	-2*
7	269	3	2	16	0	37	-30*	13	72	5	-1	5	331	2	1	28	221	5	1
8	199	3	4	17	89	5	-0	14	73	5	5	6	150	2	2	29	30	40	-27*
9	129	4	-0	18	70	7	-6	15	437	6	3	7	161	2	-1	30	199	4	1
10	69	8	1	19	415	5	-1	16	256	3	4	8	486	4	2	31	0	46	-6*
11	295	4	-1	20	37	38	9*	17	145	4	-0	9	44	5	-7	32	209	4	-1
12	187	4	7	21	77	8	1	18	233	10	-5	10	284	2	2		H ₂ L=	1,	1
13	97	6	1	22	43	21	-3*	19	302	9	-12	11	210	3	7	0	839	4	26
14	78	12	1	23	363	4	-2	20	213	4	5	12	585	6	3	1	36	5	3
15	310	3	-4	24	0	70	-5*	21	43	82	-14*	13	53	5	-10	2	139	1	1
16	164	5	1	25	22	38	1*	22	236	9	-10	14	337	3	9	3	75	2	-2
17	52	13	1*	26	35	60	-3*	23	285	37	-32	15	178	5	1	4	918	5	2
18	82	12	11	27	297	4	-6	24	93	14	8	16	528	6	9	5	107	2	1
19	298	4	-2		H ₂ L=	1,	-4	25	31	93	-15*	17	126	3	-11	6	107	1	2
20	135	6	-10	1	413	4	-3	26	166	8	-6	18	344	6	-5	7	178	2	4
	H ₂ L=	1,	-6	2	458	4	6	27	249	21	-22	19	236	6	4	8	510	4	-2
1	439	5	-2	3	429	4	-5	28	88110	-27*	20	387	4	-6	9	40	4	12	
2	74	5	19	4	28	10	-9*	29	25	56	-8*	21	16203	-36*	10	223	3	3	
3	430	4	5	5	504	6	-2	30	142	17	-2	22	278	5	-11	11	183	3	5
4	70	6	-3	6	232	3	6		H ₂ L=	1,	-2	23	103189	-48*	12	610	6	-6	
5	410	4	-4	7	352	4	2	1	370	2	-7	24	299	10	-6	13	32	9	-10*
6	87	5	12	8	0	24	-9*	2	963	5	-9	25	0	69	-14*	14	288	4	4
7	325	4	-1	9	507	6	5	3	213	2	0	26	241	12	-6	15	155	4	3
8	48	13	29*	10	230	2	4	4	231	2	-0	27	65	16	-40*	16	538	8	-3
9	344	5	0	11	244	3	-0	5	349	2	-1	28	228	6	-4	17	28	15	-19*
10	74	6	13	12	24	31	14*	6	548	4	0	29	0	41	-14*	18	270	5	1
11	249	3	2	13	490	6	3	7	398	3	10	30	225	7	0	19	169	7	-5
12	52	10	-14*	14	206	4	-1	8	129	2	2	31	66	14	-15*	20	470	7	-3
13	325	4	1	15	181	3	0	9	508	5	10	32	191	10	-4	21	57138	-28*	
14	92	6	-8	16	45	11	16*	10	433	4	-2		H ₂ L=	1,	0	22	216	20	-17
15	196	4	-1	17	458	5	-3	11	247	4	8	1	73	1	-2	23	92	13	-17
16	0	33	-35*	18	205	5	-2	12	84	4	-3	21028	6	12	24	364	3	-1	
17	310	3	-2	19	127	7	3	13	499	7	6	3	237	1	-1	25	0	43	-42*
18	61	9	7	20	29	38	-16*	14	498	6	-0	4	92	6	-0	26	256	4	-8
19	143	6	10	21	360	3	-4	15	58	8	-7	5	192	1	2	27	41	43	-43*
20	69	11	-5	22	137	6	-6	16	107	3	-2	61011	6	-3	28	240	6	-3	
21	289	4	-4	23	37	53	-13*	17	341	8	-1	7	79	4	2	29	0	63	-1*
22	41	21	-14*	24	0107	-16*	18	485	5	1	8	64	2	2	30	215	9	-8	
23	81	8	15	25	323	4	-0	19	37133	-19*	9	20	11	9*	31	69111	-34*		
24	78	10	9	26	59	26	-8*	20	168	4	2	10	588	5	-4	32	163	14	-3
	H ₂ L=	1,	-5	27	28	47	-2*	21	232	5	-2	11	56	3	6		H ₂ L=	1,	2
0	87	4	2	28	14113	-16*	22	339	17	-17	12	53	5	-5	2	445	3	2	
1	343	3	-8	29	244	4	-8	23	8156	-22*	13	88	6	2	3	274	2	1	

STRUCTURE FACTORS CONTINUED FOR
(NH2)2CO)3 UO2 SO4 - TRISUREADIOXOURANATE (VI) SULFATE.

K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL
4	25	11	8*	28	142	30	-21*	22	17	40	-14*	3	147	4	-5	11	166	5	-4
5	435	3	-2	29	40	25	16*	23	348	3	-3	4	59	10	10	19	60	14	9*
6	628	5	8	30	138	37	-20*	24	86	50	-15*	5	222	4	6	20	36	36	-3*
7	69	2	-5	H,L= 1,			4	25	27	34	11*	6	213	6	0	H,L= 2,			-6
8	127	2	0	1	527	5	-4	26	0	50	-25*	7	150	5	5	0	79	7	5
9	223	3	-2	2	264	3	4	27	282	4	-3	8	56	10	6	1	264	2	2
10	637	6	4	3	428	5	-9	H,L= 1,			6	9	235	3	0	2	62	9	11
11	170	2	-2	4	155	3	0	1	371	4	-5	10	193	6	1	3	374	4	-6
12	269	5	-1	5	514	6	-11	2	149	4	7	11	98	6	3	4	69	5	6
13	200	3	-0	6	241	3	4	3	371	4	-4	12	43	45	15*	5	349	3	-0
14	491	5	-1	7	296	3	-3	4	41	9	9*	13	240	4	-3	6	65	6	2
15	224	3	3	8	85	4	2	5	405	4	-3	14	192	4	-1	7	380	5	-8
16	266	4	-4	9	438	6	2	6	81	6	13	15	64	11	-1	8	130	5	2
17	276	5	-4	10	245	4	-5	7	337	3	-1	H,L= 1,			9	809	3	0	
18	384	5	-2	11	261	4	0	8	32	15	1*	0	253	3	-6	10	94	5	3
19	182	4	-2	12	126	5	1	9	354	3	-3	1	168	4	0	11	415	4	-5
20	178	26	-19	13	422	6	-2	10	62	7	6	2	24	37	12*	12	68	8	-5
21	241	7	-11	14	219	3	0	11	242	3	3	3	149	6	0	13	227	3	-2
22	276	3	-9	15	238	3	-0	12	59	8	10	4	226	4	3	14	138	5	-1
23	52120	-23*	16	115	5	3	13	373	4	-3	H,L= 2,			-9	15	317	3	-4	
24	202	15	-21	17	420	5	-4	14	53	13	31*	1	44	30	-16*	16	86	7	0
25	91141	-51*	18	193	3	-2	15	197	5	3	2	338	3	-8	17	101	6	4	
26	257	5	-9	19	153	4	-1	16	23	32	-20*	H,L= 2,			-8	18	98	8	-6
27	0	89	-12*	20	116	7	-3	17	320	3	-0	0	209	3	-1	19	273	3	1
28	184	10	-6	21	330	4	-6	18	48	26	5*	1	150	6	1	20	61	13	-13*
29	62	20	-33*	22	115	13	-9	19	97	6	6	2	32	34	-2*	21	37	28	9*
30	177	8	-6	23	52	12	-26*	20	43	17	1*	3	211	3	2	22	88	8	-6
31	0	53	-4*	24	147	7	-5	21	295	3	1	4	239	3	6	23	256	5	-0
H,L= 1,			3	25	256	6	-6	22	44	17	10*	5	114	5	6	H,L= 2,			-5
1	398	12	6	26	117	38	-16*	23	46	28	5*	6	81	7	3	1	372	4	-5
2	129	2	9	27	0	36	-33*	24	29	37	4*	7	242	3	5	2	172	2	-0
3	396	4	-5	28	84	71	-30*	H,L= 1,			7	8	234	4	-4	3	317	3	-2
4	543	5	2	29	205	4	-4	0	103	4	4	9	121	5	1	4	46	8	15
5	236	2	5	H,L= 1,			5	1	244	3	-2	10	108	6	0	5	448	4	-4
6	37	5	5	0	281	4	7	2	3	28	-17*	11	180	6	5	6	109	3	5
7	329	4	4	1	326	4	-1	3	296	4	-6	12	220	4	-4	7	312	3	8
8	629	6	7	2	71	6	12	4	75	8	14	13	116	6	2	8	30	14	22*
9	176	3	5	3	413	6	2	5	265	3	-6	14	109	6	-11	9	477	5	1
10	50	7	-6	4	244	3	4	6	62	7	3	H,L= 2,			-7	10	81	5	8
11	303	4	1	5	238	3	-2	7	280	3	5	1	240	3	-3	11	188	3	4
12	343	4	-1	6	17	24	4*	8	76	6	2	2	297	3	-2	12	47	17	-5*
13	137	3	3	7	375	5	-4	9	162	4	-2	3	174	3	-0	13	441	5	-1
14	218	3	-3	8	100	4	4	10	68	9	8	4	43	15	24*	14	37	14	11*
15	344	4	-1	9	135	3	4	11	332	3	1	5	300	3	1	15	168	3	2
16	375	4	-4	10	0	32	-7*	12	97	6	12	6	304	3	2	16	52	9	-2
17	52	8	-2	11	401	5	-1	13	118	5	0	7	150	4	3	17	373	4	-1
18	98	6	1	12	90	5	3	14	77	7	2	8	21	30	-0*	18	41	15	-3*
19	386	4	0	13	122	4	-2	15	319	3	1	9	263	3	-3	19	119	8	2
20	258	3	-2	14	39	12	9*	16	103	8	3	10	284	3	2	20	73	8	5
21	58	12	-8*	15	446	5	-8	17	91	7	3	11	100	6	-4	21	356	3	1
22	135	23	-18	16	149	5	4	18	107	6	-3	12	25	33	-24*	22	26	45	-8*
23	248	15	-17	17	81	6	-3	19	279	6	-1	13	273	4	2	23	59	11	-4
24	210	7	-16	18	30	33	21*	20	77	12	-11	14	222	3	0	24	40	20	4*
25	48	60	-17*	19	407	4	-1	H,L= 1,			8	15	96	6	-3	25	315	4	-4
26	87109	-35*	20	112	9	-0	1	179	3	1	16	70	13	1	26	14	77	9*	
27	200	14	-21	21	49	13	-6*	2	283	4	0	17	252	5	-2	H,L= 2,			-4

STRUCTURE FACTORS CONTINUED FOR
((NH2)2CO)3 UO2 SO4

- TRISUREADIXOURANATE (VI) SULFATE.

K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	
0	137	2	3	27	11	34	-4*	19	153	3	-6	12	265	4	2	3	271	2	1	
1	203	3	-3	28	112	46	-9*	20	216	4	3	13	103	6	2	4	73	4	6	
2	42	5	-3	29	240	5	2	21	137	6	3	14	555	6	-5	5	426	5	2	
3	429	5	-7	30	58	90	-22*	22	341	4	4	15	16	27	-6*	6	578	6	-7	
4	174	2	3	H ₂ L= 2,				23	133	5	-2	16	176	3	-1	7	175	3	4	
5	262	3	1	0	323	2	-5	24	251	3	5	17	102	6	-2	8	79	4	5	
6	131	2	2	1	116	2	-2	25	168	11	-13	18	487	6	-6	9	204	3	0	
7	485	5	-4	2	93	2	6	26	289	3	-1	19	102	4	2	10	474	6	-1	
8	193	2	-3	3	208	2	-6	27	0110	-33*	20	240	3	0	11	209	3	3		
9	312	4	2	4	452	3	-11	28	210	12	-11	21	69	11	-10	12	71	4	-2	
10	37	12	14*	5	304	2	7	29	85124	-35*	22	348	3	-6	13	215	3	1		
11	522	6	-7	6	351	3	11	30	185	9	-5	23	56	11	-4*	14	430	5	-4	
12	140	3	-1	7	383	4	-7	31	0139	-13*	24	240	5	4	15	161	3	-1		
13	198	3	-2	8	562	5	-5	H ₂ L= 2,				25	50	26	-10*	16	74	5	-7	
14	49	8	8	9	116	2	3	0	665	4	-5	26	283	3	-1	17	244	3	2	
15	462	6	-0	10	121	3	1	1	74	1	4	27	0104	-18*	18	300	3	0		
16	158	3	1	11	408	5	-6	2	192	4	-1	28	210	5	-1	19	93	5	8	
17	118	4	6	12	458	5	1	3	368	2	-4	29	46124	-12*	20	118	7	-1		
18	39	20	-4*	13	108	3	-0	4	811	5	-2	30	202	4	1	21	233	3	-4	
19	383	4	-1	14	111	3	2	5	99	2	-2	31	0140	-10*	22	276	3	2		
20	64	12	-4*	15	352	5	-3	6	56	2	8	H ₂ L= 2,				23	0	41	-24*	
21	33	22	6*	16	424	5	-2	7	105	2	-3	0	605	5	-9	24	116	6	-8	
22	39	22	-6*	17	24	26	-4*	9	42	11	9*	1	119	2	0	25	261	4	-0	
23	373	3	-2	18	138	3	-2	10	159	2	-1	2	158	5	2	26	182	4	-2	
24	57	59	-11*	19	326	3	3	11	74	5	-3	3	306	3	5	27	0	34	-23*	
25	39	17	20*	20	244	3	2	13	184	2	-1	4	611	5	-17	28	158	9	-4	
26	0	80	-28*	21	35	16	5*	14	237	3	-5	5	45	5	-8	29	161	6	-12	
27	334	4	2	22	236	6	1	15	189	4	-2	6	217	2	-2	30	139	6	7	
28	46	88	-6*	23	304	4	4	16	407	4	6	7	415	4	4	H ₂ L= 2,				
H ₂ L= 2,				-3	24	206	4	2	17	83	4	2	8	591	6	-5	0	148	4	-3
1	526	4	-2	25	27	35	21*	18	239	4	-2	9	130	2	-4	1	182	2	-5	
2	456	3	10	26	181	16	-0	19	131	6	3	10	223	3	-3	2	47	5	3	
3	472	4	2	27	266	14	-8	20	264	5	-0	11	140	5	3	3	294	3	-1	
4	148	2	3	28	163	17	-10	21	22	32	-7*	12	531	6	-4	4	288	3	-6	
5	527	5	-3	29	8	84	-5*	22	253	3	0	13	261	3	4	5	219	2	-4	
6	332	3	5	30	91	12	-32	23	117	6	2	14	223	3	1	6	26	12	15*	
7	400	4	-3	31	191	23	-37	24	267	3	6	15	195	5	1	7	446	6	-4	
8	45	5	-8	H ₂ L= 2,				-1	25	21	45	18*	16	438	4	-1	8	255	3	-4
9	433	5	-5	1	354	2	1	26	266	4	-8	17	202	3	5	9	300	3	-2	
10	238	3	7	2	723	4	1	27	90	19	14*	18	266	6	3	10	148	3	-8	
11	321	3	1	3	434	2	-2	28	265	4	-2	19	158	6	-0	11	443	6	3	
12	33	10	6*	4	194	2	3	29	0165	-22*	20	335	3	-2	12	266	4	-2		
13	402	5	-3	5	343	2	-4	30	231	13	-11	21	0	32	-11*	13	186	3	-3	
14	258	3	1	6	753	5	-13	31	59102	-27*	22	287	6	-4	14	165	4	-8		
15	264	4	1	7	296	2	-5	32	168	8	-2	23	171	5	1	15	394	5	4	
16	107	4	-2	8	232	2	1	H ₂ L= 2,				24	285	3	-4	16	187	3	6	
17	348	6	-1	9	310	3	-2	1	103	2	1	25	0	50	-3*	17	110	4	-4	
18	193	3	-1	10	624	6	2	2	828	5	-4	26	260	4	-2	18	196	4	-1	
19	157	4	-2	11	300	2	1	3	190	1	-2	27	88	36	-19*	19	282	4	2	
20	120	6	-0	12	293	4	7	4	170	9	4	28	221	4	-4	20	186	3	5	
21	331	4	-5	13	263	4	-4	5	32	4	10	29	13	40	-20*	21	4	33	-11*	
22	126	4	3	14	480	6	-4	6	850	7	-15	30	211	13	-8	22	130	6	-5	
23	82	7	2	15	137	3	-3	7	123	2	2	31	40	97	-46*	23	288	4	-3	
24	199	5	1	16	198	3	-2	8	236	3	5	H ₂ L= 2,				3	24	151	10	-2
25	283	3	-2	17	179	4	-2	9	67	3	-1	1	418	4	2	25	37	25	19*	
26	131	8	-0	18	408	6	-2	11	67	4	4	2	633	6	-8	26	136	5	-4	

STRUCTURE FACTORS CONTINUED FOR
(NH₂)₂CO₃ UO₂ SO₄ - TRISUREADIOXOURANATE(VI) SULFATE.

K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL
27	253	5	-2	2	89	8	13	7	295	4	-2	20	24	34	-18*	21	148	4	2
28	131	9	-8	3	272	3	4	8	290	3	-3	21	116	5	2	22	98	11	-2
	H,L=	2,	5	4	91	5	7	9	164	4	0	22	47	13	38*	23	304	5	0
1	327	4	-2	5	344	3	-0	10	63	11	13	23	301	3	4	24	99	6	8
2	250	3	-3	6	82	5	26	11	236	3	-6	24	31	35	9*	25	39	16	6*
3	307	12	6	7	227	3	1	12	239	3	-4	25	87	8	13	26	120	6	6
4	20	27	-1*	8	55	10	-2	13	142	5	-2		H,L=	3,	-4	27	274	4	-4
5	396	5	-3	9	331	4	0	14	37	20	3*	1	271	4	-1	28	101	7	9
6	212	3	-2	10	55	16	31*	15	207	4	-1	2	38	6	22	29	31	37	28*
7	312	4	-2	11	200	4	-1	16	199	4	-5	3	334	4	3		H,L=	3,	-2
8	41	12	32*	12	67	8	20	17	116	6	-3	4	67	4	6	1	407	3	3
9	450	6	-8	13	295	3	-3	18	63	11	6	5	385	4	-6	2	308	3	-8
10	196	3	-1	14	79	8	-1		H,L=	3,	-6	6	118	3	2	3	315	3	4
11	208	4	-2	15	172	4	1	1	260	3	1	7	224	3	-2	4	172	2	4
12	23	27	-3*	16	50	16	-1*	2	155	3	1	8	40	11	12*	5	318	3	-5
13	423	5	-2	17	281	3	-6	3	250	3	-1	9	501	5	-2	6	371	3	-4
14	134	4	3	18	73	9	6	4	33	13	15*	10	176	2	1	7	209	2	-1
15	147	4	3	19	109	14	-3	5	302	4	0	11	140	3	2	8	121	3	-0
16	0	33	-14*		H,L=	2,	8	6	119	5	-2	12	42	13	-5*	9	388	5	-3
17	346	4	-0	0	155	4	5	7	219	3	4	13	442	5	-1	10	490	5	-2
18	114	5	1	1	161	4	1	8	33	16	-8*	14	113	4	-1	11	114	3	-3
19	116	5	2	2	35	37	-5*	9	354	3	-6	15	65	7	9	12	179	3	1
20	42	14	8*	3	209	3	11	10	152	4	-4	16	42	10	10*	13	410	4	-0
21	308	4	-1	4	179	3	4	11	189	4	-5	17	408	4	-3	14	375	5	2
22	120	5	5	5	120	6	-8	12	111	5	-5	18	22	30	3*	15	32	17	-11*
23	68	9	10	6	70	8	3	13	301	3	2	19	49	12	20*	16	179	3	-3
24	32	37	11*	7	220	3	1	14	126	5	-0	20	60	11	-1*	17	378	5	-1
25	290	4	-5	8	187	4	2	15	67	9	-7	21	394	3	1	18	238	3	-1
26	95	7	21	9	92	7	-0	16	119	7	-8	22	38	12	20*	19	45	10	9*
	H,L=	2,	6	10	47	18	10*	17	285	3	2	23	56	12	22*	20	223	4	-3
0	49	8	14	11	230	4	-2	18	130	5	7	24	53	13	14*	21	358	3	2
1	278	3	-3	12	174	5	-4	19	48	24	13*	25	351	3	-1	22	223	3	3
2	70	6	1	13	74	12	3	20	95	9	3	26	36	42	0*	23	47	14	11*
3	348	4	0	14	40	46	-3*	21	264	4	4	27	21	36	4*	24	180	4	-3
4	112	3	1		H,L=	3,	-8	22	125	6	-0		H,L=	3,	-3	25	283	3	1
5	252	11	1	1	111	5	12		H,L=	3,	-5	0	335	3	-1	26	189	4	5
6	42	11	37*	2	261	3	-4	0	73	4	-2	1	492	4	0	27	18	34	-10*
7	369	4	-1	3	72	8	5	1	369	4	-4	2	101	3	2	28	169	4	-1
8	51	8	22	4	37	18	-5*	2	38	21	1*	3	603	5	6	29	247	4	-1
9	232	4	-3	5	147	4	3	3	357	4	-0	4	415	3	5	30	154	8	-5
10	21	31	-14*	6	240	3	2	4	85	4	-2	5	436	4	-5		H,L=	3,	-1
11	365	4	-8	7	85	7	-3	5	339	4	-1	6	26	10	-1*	0	539	4	-15
12	71	7	17	8	97	7	-1	6	60	6	-1	7	558	5	1	1	322	2	-5
13	153	4	-2	9	178	5	-1	7	510	6	-7	8	308	3	-2	2	53	3	3
14	103	5	-5	10	225	6	-2	8	106	4	0	9	356	4	-4	3	245	2	-5
15	314	4	0	11	92	7	2	9	370	3	-2	10	78	4	-2	4	537	4	-6
16	32	26	21*	12	107	7	-6	10	12	36	2*	11	512	6	-1	5	385	3	-2
17	94	6	9	13	188	5	9	11	486	4	1	12	228	3	0	6	231	2	4
18	52	11	-1*		H,L=	3,	-7	12	89	5	2	13	356	4	-2	7	387	4	-4
19	290	4	-1	0	326	3	2	13	260	3	3	14	49	5	-11*	8	665	8	-9
20	26	34	5*	1	234	3	3	14	14	29	10*	15	342	4	6	9	303	2	1
21	33	33	12*	2	26	37	19*	15	404	3	0	16	129	3	0	10	128	2	-4
22	44	18	16*	3	267	3	4	16	55	9	13	17	179	3	-2	11	386	4	-2
23	287	5	2	4	283	4	-6	17	141	4	4	18	32	16	-4*	12	553	6	2
	H,L=	2,	7	5	152	4	-0	18	0	32	-6*	19	359	4	1	13	130	3	-3
1	320	3	-4	6	57	8	4	19	294	3	-3	20	143	4	4	14	94	3	-4

STRUCTURE FACTORS CONTINUED FOR
(NH2)2CO)3 UO2 SO4 - TRISUREADIOXOURANATE (VI) SULFATE.

K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	
15	223	3	0	6	209	7	5	H ₂ L=	3,	3	25	259	4	-2	2	5	37	1*		
16	407	4	-1	7	143	3	3	0	619	6	-1	26	148	6	-4	3	302	4	-3	
17	114	4	1	8	823	8	-10	1	279	4	3	27	0	37	-15*	4	44	46	1*	
18	140	3	0	9	31	23	3*	2	38	6	-1	H ₂ L=	3,	5	5	217	4	-2		
19	216	3	-4	10	95	2	4	3	435	5	-2	0	204	3	-2	6	52	9	9	
20	314	4	2	11	33	17	15*	4	592	6	-10	1	315	3	2	7	338	4	-7	
21	62	11	-4	12	703	7	0	5	325	4	-1	2	51	6	5	8	107	5	13	
22	188	3	3	13	28	11	9*	6	91	4	5	3	351	4	2	9	221	4	1	
23	174	5	-5	14	149	5	-3	7	353	5	-2	4	228	2	-2	10	17	35	1*	
24	275	4	2	15	23	28	10*	8	564	6	-6	5	270	13	-2	11	298	3	3	
25	51	11	-0*	16	465	5	-0	9	231	9	-3	6	60	7	-2	12	72	12	9	
26	191	5	4	17	40	9	-4*	10	113	3	3	7	446	5	-4	13	186	4	-3	
27	164	4	2	18	144	3	5	11	319	4	4	8	275	3	-1	14	45	35	31*	
28	199	4	-4	19	21	26	15*	12	485	6	-3	9	282	13	-1	15	258	3	3	
29	33	37	29*	20	364	5	5	13	244	3	1	10	47	12	6*	16	52	12	8*	
30	177	8	6	21	20	28	15*	14	50	11	2*	11	404	5	-5	17	141	5	10	
31	147	6	-4	22	156	4	-0	15	132	4	0	12	210	3	3	18	0	35	-7*	
	H ₂ L=	3,	0	23	33	22	-19*	16	342	4	3	13	229	3	-3	H ₂ L=	3,	8		
1	174	2	-2	24	349	4	5	17	111	4	-1	14	75	5	3	1	170	5	-10	
2	582	4	8	25	0	40	-3*	18	110	4	8	15	331	6	0	2	97	6	9	
3	146	2	1	26	201	4	-4	19	203	6	3	16	132	4	4	3	166	4	3	
4	127	2	6	27	24	33	-7*	20	336	3	-0	17	127	5	5	4	49	14	11*	
5	38	4	-1	28	229	4	-0	21	41	14	5*	18	58	9	-5	5	192	6	3	
6	735	7	4	29	21	38	19*	22	126	5	-1	19	278	4	-2	6	98	6	-4	
7	110	2	2	30	190	5	-1	23	173	4	4	20	97	7	-3	7	129	7	10	
8	175	3	-1	H ₂ L=	3,	2	24	225	4	-3	21	70	8	-7	8	61	10	8		
9	170	2	2	1	50	3	4	25	0	33	-9*	22	37	35	1*	9	229	4	2	
10	666	6	-5	2	514	5	2	26	157	4	-2	23	266	3	2	10	129	6	9	
11	54	4	13	3	81	3	5	27	175	6	1	24	96	7	7	11	92	7	-1	
12	149	11	-6	4	37	5	6	28	173	4	-3	25	63	15	13*	12	60	11	-6*	
13	239	3	4	5	112	3	-2	29	3	35	-3*	H ₂ L=	3,	6	H ₂ L=	4,	8		-8	
14	418	5	-2	6	490	5	-1	H ₂ L=	3,	4	1	268	4	4	8	295	3	-2		
15	49	6	3	7	111	2	-1	1	254	3	-1	2	68	7	11	1	78	7	12	
16	269	3	1	8	198	3	-2	2	305	3	-6	3	274	3	2	2	54	10	36*	
17	170	3	4	9	249	4	1	3	180	11	-1	4	27	25	12*	3	50	12	-3*	
18	336	4	8	10	462	4	-4	4	25	29	2*	5	297	3	-2	4	270	4	-1	
19	41	9	5*	11	109	3	4	5	326	4	-4	6	47	5	20*	5	75	8	8	
20	239	4	-3	12	232	3	4	6	275	3	-0	7	205	3	-2	6	61	13	-2*	
21	150	3	2	13	241	4	-6	7	151	2	1	8	43	22	3*	7	117	7	7	
22	302	4	4	14	387	4	-6	8	64	5	-3	9	345	5	-4	8	270	3	3	
23	75	7	-18	15	23	26	14*	9	381	4	-5	10	48	10	35*	9	7	35	-15*	
24	275	3	4	16	282	3	0	10	303	3	1	11	167	3	5	10	66	10	-1	
25	103	7	-4	17	130	4	2	11	131	4	1	12	73	6	8	H ₂ L=	4,	7		-7
26	283	3	1	18	364	3	1	12	185	5	2	13	316	4	-1	1	201	3	3	
27	0	44	-10*	19	67	6	3	13	342	5	-3	14	48	11	13*	2	289	3	-2	
28	271	4	9	20	284	3	-1	14	202	3	-5	15	86	6	20	3	221	4	-2	
29	102	8	-11	21	125	4	-1	15	65	6	-8	16	19	32	-10*	4	60	10	11	
30	213	4	5	22	331	3	-0	16	186	3	-0	17	305	3	-4	5	222	3	-1	
31	0	53	-16*	23	23	37	-1*	17	310	3	1	18	66	5	13	6	280	3	5	
	H ₂ L=	3,	1	24	261	3	0	18	197	4	-1	19	49	13	20*	7	224	3	4	
0	678	5	-12	25	102	10	-2	19	0	34	-15*	20	39	15	18*	8	50	12	3*	
1	36	4	9	26	247	3	5	20	143	5	3	21	288	3	0	9	268	3	1	
2	43	3	5	27	0	40	-3*	21	303	3	-4	22	58	13	-14*	10	233	4	-3	
3	87	2	5	28	242	5	-1	22	187	4	-3	H ₂ L=	3,	7	11	186	4	5		
4	669	5	-4	29	87	13	-23	23	20	33	3*	0	71	8	13	12	60	14	-9*	
5	130	2	4	30	195	4	-3	24	129	5	7	1	291	3	-0	13	259	4	10	

STRUCTURE FACTORS CONTINUED FOR
(NH2)2CO)3 UO2 SO4 - TRISUREADIOXOURANATE (VI) SULFATE.

K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL
14	231	4	-4	3	377	3	-0	2	115	3	0	28	144	5	-2	22	335	4	-1
15	114	5	11	4	58	5	14	3	433	4	1	29	167	6	-0	23	36	36	10*
16	102	6	11	5	269	3	-1	4	258	3	1	H,L= 4, 0				24	178	4	2
17	193	4	6	6	30	22	16*	5	249	2	-1	0	610	5	1	25	36	21	-3*
	H,L= 4, -6			7	392	4	-5	6	64	4	3	1	35	5	0	26	253	4	1
0	158	3	3	8	53	6	13	7	460	5	-7	2	89	3	3	27	21	36	15*
1	252	4	-4	9	251	4	-3	8	274	4	-2	3	191	2	-5	28	182	4	-3
2	52	9	4	10	46	8	-2	9	228	3	-1	4	615	6	-2	29	47	28	14*
3	276	4	-1	11	446	5	-3	10	222	3	1	5	185	2	2	H,L= 4, 2			
4	249	3	2	12	31	14	23*	11	318	3	6	6	40	8	12*	0	604	6	-8
5	230	3	1	13	119	4	1	12	202	3	2	7	263	3	-1	1	48	6	6
6	53	11	-1*	14	67	9	-1	13	192	3	2	8	467	4	-4	2	72	18	4*
7	266	3	-5	15	436	4	-1	14	247	4	-5	9	54	4	-8	3	77	4	4
8	183	3	-0	16	17	36	6*	15	353	3	-1	10	211	3	-1	4	536	5	-4
9	123	4	1	17	93	5	4	16	182	3	4	11	244	3	-3	5	85	3	1
10	95	5	-4	18	93	7	3	17	200	3	0	12	427	4	-7	6	120	4	-3
11	291	3	-1	19	379	3	1	18	214	3	-1	13	113	3	-7	7	76	4	6
12	188	4	7	20	33	40	-9*	19	315	4	3	14	246	3	4	8	535	6	-5
13	66	12	-8*	21	62	9	4	20	212	3	2	15	153	4	0	9	40	7	8
14	34	21	-14*	22	60	10	33	21	75	6	-3	16	317	3	5	10	184	3	2
15	267	4	-2	23	351	3	-3	22	147	7	1	17	90	5	-5	11	127	3	1
16	154	4	2	24	0	40	-18*	23	323	4	2	18	257	3	1	12	433	5	-7
17	45	18	7*	25	63	10	30	24	199	4	3	19	118	4	0	13	74	4	6
18	67	13	7*	26	29	36	5*	25	32	36	5*	20	318	3	1	14	229	3	1
19	284	4	1	H,L= 4, -3			26	163	5	0	21	81	8	-8	15	136	4	1	
20	149	5	7	1	389	4	-3	27	256	4	1	22	237	4	-5	16	385	4	-3
21	54	19	20*	2	262	3	1	28	150	6	7	23	118	6	-4	17	80	7	-1
	H,L= 4, -5			3	367	4	-2	29	42	40	38*	24	259	4	6	18	209	4	5
1	365	4	1	4	102	3	-1	H,L= 4, -1			25	28	36	-11*	19	135	5	6	
2	71	5	0	5	414	4	-3	1	187	2	2	26	259	4	4	20	315	3	1
3	339	3	-2	6	309	4	2	2	592	5	3	27	146	5	11	21	20	30	2*
4	47	7	-0	7	331	3	-4	3	246	3	1	28	190	4	1	22	223	3	-3
5	398	4	-5	8	50	6	1	4	45	5	11	29	0	41	-38*	23	91	6	-5
6	133	3	-11	9	431	5	-5	5	222	3	-2	30	241	5	6	24	277	4	1
7	323	3	1	10	327	4	2	6	616	5	-1	H,L= 4, 1			25	27	34	11*	
8	44	12	6*	11	254	3	0	7	266	2	5	1	34	6	26	26	223	5	-3
9	423	3	-8	12	27	16	-7*	8	94	3	3	2	705	6	7	27	95	8	-4
10	127	4	3	13	385	4	-5	9	226	4	-3	3	44	5	13	28	203	5	-3
11	232	3	-2	14	179	3	4	10	574	6	-3	4	39	6	11	29	31	36	20*
12	73	6	-4	15	174	3	2	11	188	2	1	5	37	7	30*	H,L= 4, 3			
13	372	3	-8	16	30	26	-10*	12	139	3	-0	6	762	9	2	1	204	2	7
14	106	6	3	17	395	5	2	13	338	4	-5	7	68	3	6	2	473	5	-1
15	186	3	1	18	63	7	-1	14	440	5	3	8	113	11	0	3	303	3	-1
16	90	6	0	19	125	4	-2	15	71	5	2	9	23	27	9*	4	34	8	5*
17	329	3	1	20	19	36	-6*	16	128	3	-4	10	648	7	-2	5	198	8	4
18	30	34	5*	21	331	4	4	17	284	4	3	11	33	6	2*	6	480	5	-3
19	129	6	7	22	99	6	13	18	325	5	4	12	228	12	3	7	293	4	-3
20	38	28	-8*	23	36	20	3*	19	33	15	11*	13	65	5	2	8	80	4	6
21	316	5	4	24	13	33	-7*	20	132	4	2	14	493	5	-2	9	238	4	2
22	53	12	21*	25	304	4	2	21	207	3	6	15	30	14	-7*	10	434	4	-2
23	88	8	4	26	67	12	-11	22	298	3	0	16	159	3	-3	11	261	3	-3
24	37	40	-8*	27	56	12	18*	23	28	39	-0*	17	57	7	32	12	138	3	-2
	H,L= 4, -4			28	40	25	-23*	24	136	6	5	18	410	4	-1	13	182	3	0
0	0	27	-17*	H,L= 4, -2			25	215	4	3	19	17	28	0*	14	387	3	-5	
1	353	4	-2	0	180	2	-0	26	205	4	3	20	201	3	-1	15	92	6	6
2	39	7	0*	1	405	4	8	27	6	34	-7*	21	28	26	7*	16	201	3	1

STRUCTURE FACTORS CONTINUED FOR
(NH₂)₂CO₃ UO₂ SO₄ - TRISUREADIOXOURANATE (VI) SULFATE.

K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL
17	137	4	6	17	264	4	3	H ₂ L=	5,	-8	15	353	4	2	22	32	33	20*	
18	323	3	-2	18	96	6	-8	1	66	14	7*	16	81	7	4	23	308	4	2
19	76	8	11	19	111	11	-3	2	299	4	1	17	122	5	4	24	66	15	-0*
20	175	3	-2	20	72	9	-2	3	39	41	-11*	18	60	14	8*	25	20	45	-18*
21	91	6	2	21	262	5	-3	H ₂ L=	5,	-7	19	320	5	-5	26	31	51	14*	
22	226	4	1	22	99	7	6	0	217	4	-6	20	55	19	-6*	H ₂ L=	5,	5,	-2
23	69	8	11	23	70	14	-1*	1	163	5	-4	21	63	16	-5*	1	371	3	-3
24	178	5	2	H ₂ L=	4,	6	2	43	21	34*	22	111	9	1	2	206	4	1	
25	121	7	-6	0	74	6	27	3	173	8	10	H ₂ L=	5,	-4	3	319	3	2	
26	207	4	-2	1	229	3	2	4	235	4	2	1	360	4	4	4	29	10	9*
27	29	39	14*	2	30	37	5*	5	205	8	7	2	79	4	7	5	460	4	-1
H ₂ L=	4,	4	3	285	3	-0	6	43	21	5*	3	322	3	1	6	204	2	0	
0	377	4	4	4	109	4	10	7	168	10	8	4	31	16	15*	7	322	3	-5
1	212	3	3	5	238	3	-2	8	246	4	-6	5	453	4	-2	8	60	5	6
2	35	9	13*	6	29	31	11*	9	135	6	6	6	87	5	4	9	424	3	-6
3	179	3	-3	7	276	4	-1	10	90	9	6	7	252	3	-2	10	229	3	-0
4	391	5	-0	8	118	4	6	11	196	6	2	8	43	9	-3*	11	263	4	2
5	145	4	-1	9	162	3	-1	12	217	5	-2	9	393	4	-3	12	224	3	-2
6	108	3	-0	10	16	30	-5*	13	86	15	24	10	130	4	5	13	371	3	-1
7	261	5	-5	11	334	4	7	14	133	7	8	11	183	3	1	14	175	3	-1
8	364	4	-2	12	133	5	13	H ₂ L=	5,	-6	12	117	4	3	15	199	4	2	
9	96	4	0	13	114	5	9	1	265	3	-0	13	367	4	0	16	192	3	3
10	59	6	-3	14	26	31	20*	2	261	3	3	14	92	5	4	17	272	3	-0
11	275	3	-2	15	279	3	-3	3	215	4	-1	15	189	5	2	18	172	3	2
12	280	3	-1	16	99	7	9	4	87	5	5	16	85	11	6	19	99	5	-0
13	43	12	10*	17	59	17	6*	5	261	4	-4	17	340	3	-1	20	105	5	-2
14	84	7	9	18	36	23	20*	6	242	3	1	18	31	40	12*	21	272	5	2
15	292	3	-2	19	273	4	-3	7	185	3	3	19	110	5	4	22	156	4	0
16	290	3	4	20	69	10	1	8	52	9	-2	20	37	17	16*	23	71	9	18
17	0	29	-28*	H ₂ L=	4,	7	9	232	3	2	21	327	4	1	24	138	8	17	
18	56	10	-1	1	247	3	1	10	273	3	3	22	0	40	-9*	25	247	5	-5
19	278	3	2	2	57	12	4*	11	129	5	3	23	0	42	-42*	26	144	7	-3
20	193	5	-4	3	236	3	-2	12	34	36	17*	24	0	42	-38*	27	0	36	-14*
21	53	17	14*	4	15	30	-4*	13	256	4	-0	H ₂ L=	5,	-3	H ₂ L=	5,	5,	-1	
22	120	9	3	5	276	3	4	14	216	5	-6	0	273	3	-1	0	485	5	-2
23	258	5	-0	6	80	9	11	15	112	14	13	1	284	2	-4	1	253	3	1
24	194	4	7	7	231	3	-1	16	15	40	-17*	2	108	3	-5	2	32	10	27*
25	31	41	21*	8	35	19	32*	17	263	6	11	3	338	3	-3	3	323	4	2
26	124	6	-3	9	289	3	2	18	195	5	4	4	261	3	-0	4	468	5	0
H ₂ L=	4,	5	10	81	18	-2	19	70	14	6*	5	345	3	-6	5	162	3	-7	
1	309	4	-4	11	150	6	-3	H ₂ L=	5,	-5	6	137	3	-9	6	38	7	17*	
2	157	3	1	12	54	17	48*	0	110	4	-0	7	365	4	-3	7	343	4	-6
3	282	5	-2	13	280	4	-11	1	312	3	-4	8	288	3	1	8	365	3	0
4	16	25	-3*	14	43	17	-8*	2	45	8	19*	9	246	4	-6	9	138	3	-1
5	334	3	-0	15	114	6	2	3	364	4	-4	10	37	12	9*	10	108	3	-4
6	196	3	3	16	40	21	34*	4	70	6	6	11	461	4	-7	11	303	3	-4
7	248	3	-5	H ₂ L=	4,	8	5	231	4	-7	12	130	3	7	12	302	4	1	
8	27	20	18*	0	71	8	16	6	96	4	4	13	143	4	6	13	89	4	-1
9	339	5	6	1	182	4	1	7	296	3	-4	14	83	6	2	14	165	3	3
10	170	3	2	2	8	33	4*	8	91	5	6	15	451	3	-1	15	264	4	3
11	190	3	-1	3	227	3	3	9	155	3	-4	16	119	4	0	16	339	5	1
12	85	5	1	4	79	10	26	10	41	20	3*	17	56	8	9	17	90	5	-1
13	301	4	-2	5	163	4	9	11	297	3	4	18	19	34	8*	18	150	4	-2
14	159	4	3	6	33	33	1*	12	60	8	11	19	339	4	1	19	288	3	1
15	146	4	1	7	235	4	3	13	152	4	9	20	71	10	5	20	288	3	5
16	113	5	5	8	69	14	9*	14	11	38	-9*	21	61	9	13	21	46	13	32*

STRUCTURE FACTORS CONTINUED FOR
 ((NH2)2CO)3 UO2 SO4 - TRISUREADIOXOURANATE(VI) SULFATE.

K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL
22	138	5	-1	19	63	10	-0	17	73	7	-6	20	119	9	-2	10	45	20	9*
23	261	4	-2	20	301	3	4	18	195	3	4	21	54	20	8*	11	207	5	-4
24	199	4	3	21	57	10	-3	19	88	6	-6	H,L= 5, 6		12	238	5	5		
25	0	41	-21*	22	186	4	-7	20	250	3	3	1	271	3	-2	13	118	13	8
26	136	8	11	23	97	6	11	21	58	11	9*	2	130	4	8	14	0	40	-35*
27	217	4	-1	24	244	3	-2	22	183	5	2	3	229	3	0	15	224	6	10
28	138	6	-2	25	0	44	-35*	23	95	11	-0	4	34	17	-1*	H,L= 6, 6			
	H,L= 5, 0			26	191	4	1	24	213	5	2	5	299	3	-1	1	248	3	-3
1	242	3	-1	27	87	9	5	25	43	34	-2*	6	132	5	8	2	186	3	-0
2	600	6	-6	28	184	4	5	26	178	4	-1	7	183	4	4	3	226	3	2
3	80	3	2	H,L= 5, 2				H,L= 5, 4				8	46	11	9*	4	115	5	5
4	123	3	-0	1	46	8	24	1	199	4	0	9	269	3	2	5	269	3	6
5	245	3	2	2	525	6	-5	2	396	4	-1	10	149	5	2	6	108	4	-3
6	506	5	-5	3	28	15	19*	3	148	4	3	11	154	4	6	7	170	4	-2
7	124	2	-2	4	62	5	8	4	62	6	2	12	46	15	38*	8	80	6	5
8	119	3	1	5	42	7	22	5	223	4	-2	13	245	8	-4	9	319	3	5
9	277	3	3	6	589	6	-9	6	398	5	-3	14	129	7	10	10	99	6	-3
10	369	4	-3	7	32	10	25*	7	130	3	5	15	118	6	-3	11	132	4	3
11	228	3	1	8	111	4	8	8	55	7	15	16	36	40	28*	12	36	17	20*
12	82	4	3	9	58	7	2	9	230	3	-2	17	242	5	-7	13	304	3	-4
13	203	2	4	10	497	6	-7	10	388	4	4	18	108	17	18	14	113	10	-10
14	395	5	2	11	120	4	3	11	59	11	14	H,L= 5, 7		15	92	8	13		
15	150	3	1	12	129	3	3	12	60	8	10	0	32	38	14*	16	33	40	0*
16	116	4	1	13	123	5	4	13	255	4	-1	1	188	5	-2	17	314	4	6
17	181	3	-3	14	436	4	0	14	310	4	-2	2	44	22	33*	18	106	8	13
18	371	4	-1	15	118	4	4	15	53	9	4	3	201	5	1	19	68	13	16*
19	88	5	4	16	124	5	2	16	64	7	20	4	53	16	12*	H,L= 6, 6			
20	169	4	1	17	74	7	1	17	237	3	6	5	175	10	1	8	104	5	1
21	149	4	5	18	324	3	-0	18	221	4	-4	6	69	12	17	1	360	3	2
22	261	3	0	19	0	34	-15*	19	30	39	-13*	7	242	5	8	2	31	17	12*
23	37	41	17*	20	154	4	12	20	88	10	-10	8	45	23	36*	3	373	3	-1
24	223	4	2	21	75	7	16	21	206	6	3	9	135	7	-9	4	90	6	4
25	122	8	-7	22	286	3	2	22	178	6	-6	10	39	43	38*	5	275	3	1
26	193	9	-3	23	29	32	26*	23	0	42	-15*	11	256	5	1	6	45	14	42*
27	46	17	2*	24	179	8	6	24	105	10	1	12	61	16	55*	7	340	3	-1
28	177	5	-0	25	78	13	3	H,L= 5, 5				H,L= 6, 6		-7	8	77	5	4	
	H,L= 5, 5			26	232	4	-0	0	209	3	5	1	153	6	5	9	253	4	-5
0	505	5	-7	27	0	36	-13*	1	254	3	-1	2	237	4	6	10	27	33	10*
1	55	7	9	H,L= 5, 3				2	50	11	5*	3	139	6	17	11	356	3	-0
2	32	8	27*	0	300	3	-5	3	271	3	-5	4	72	11	8	12	37	19	-14*
3	85	5	7	1	254	3	-1	4	185	3	4	5	145	9	4	13	204	4	1
4	501	5	-0	2	24	29	-12*	5	221	4	2	6	208	5	-1	14	6	31	-11*
5	103	3	2	3	158	10	5	6	93	4	0	7	80	13	7	15	315	4	1
6	52	7	5	4	382	4	-4	7	250	3	3	8	98	9	-1	16	37	18	-1*
7	133	2	-0	5	297	3	-4	8	176	3	-1	9	128	7	-3	17	132	4	3
8	434	4	-2	6	56	6	8	9	140	4	-1	H,L= 6, 6		-6	18	0	50	-13*	
9	37	9	29*	7	155	4	-2	10	84	7	2	0	279	3	-2	19	313	4	3
10	105	3	3	8	367	4	-7	11	253	3	-1	1	242	5	2	20	0	50	-30*
11	35	9	18*	9	200	4	1	12	150	4	2	2	30	30	22*	21	104	10	10
12	436	5	3	10	170	3	2	13	103	6	3	3	219	4	2	22	17	51	9*
13	43	10	5*	11	165	5	3	14	60	9	7	4	267	3	3	H,L= 6, 6			
14	232	4	1	12	376	4	2	15	296	3	1	5	187	5	-2	1	280	2	1
15	40	18	14*	13	33	36	10*	16	137	5	3	6	43	13	-7*	2	154	3	1
16	408	3	4	14	204	3	1	17	76	11	-12	7	259	4	3	3	230	3	-0
17	16	28	-9*	15	158	4	-1	18	102	8	18	8	223	4	-8	4	14	25	11*
18	230	3	3	16	281	3	3	19	267	5	4	9	162	6	-2	5	324	4	-5

STRUCTURE FACTORS CONTINUED FOR
(NH2)2CO)3 UO2 SO4 - TRISUREADIOXOURANATE(VI) SULFATE.

K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL
6	64	6	3	10	259	4	-7	11	90	6	4	14	280	3	-2	3	228	4	-0
7	173	3	4	11	129	4	-7	12	186	3	-3	15	49	10	1*	4	129	7	9
8	33	14	5*	12	191	4	1	13	73	9	14	16	175	4	8	5	203	7	-9
9	408	4	1	13	203	3	-0	14	323	3	2	17	103	5	2	6	0	44	-35*
10	32	14	10*	14	263	4	6	15	30	21	-21*	18	269	4	0	7	246	4	2
11	133	4	1	15	127	4	-1	16	187	3	0	19	19	33	13*	8	97	9	6
12	0	28	-9*	16	194	3	0	17	64	10	9	20	188	5	-1	9	184	9	-7
13	342	3	-1	17	261	3	7	18	297	3	-4	21	93	10	6	10	53	16	31*
14	69	7	8	18	192	3	1	19	44	27	23*	22	219	5	-7	11	248	6	6
15	93	6	-3	19	30	33	-0*	20	218	4	3	23	0	43	-3*	12	119	15	3
16	30	31	22*	20	145	6	0	21	98	6	5	H ₂ L=	6,	4	13	130	7	-2	
17	347	4	1	21	279	3	1	22	238	5	-1	0	426	4	-1	14	48	53	34*
18	44	13	0*	22	172	5	8	23	0	40	-17*	1	173	3	5	H ₂ L=	6,	7	
19	61	10	1	23	20	39	10*	24	212	5	8	2	35	21	32*	1	188	5	14
20	0	55	-25*	24	145	7	11	25	79	13	8	3	198	3	0	2	44	25	27*
21	34	1	5	25	242	5	3	H ₂ L=	6,	2	4	368	4	-3	3	133	7	-9	
22	0	54	-41*	26	130	8	8	0	556	5	-2	5	152	3	2	4	0	47	-6*
23	0	50	-21*	H ₂ L=	6,	0	0	1	39	8	27*	6	48	10	2*	5	198	7	-1
24	64	23	41*	0	563	5	-9	2	40	12	35*	7	178	4	-2	6	32	41	3*
H ₂ L=	6,	-2	1	214	4	-0	3	41	10	16*	8	325	3	1	7	106	19	1	
0	209	2	3	2	54	5	47	4	496	5	-8	9	94	5	0	H ₂ L=	7,	-6	
1	378	3	1	3	265	3	-1	5	48	18	11*	10	36	35	11*	1	205	5	-5
2	34	11	7*	4	480	5	-4	6	23	25	8*	11	180	5	-6	2	220	6	-7
3	340	4	3	5	131	3	0	7	32	13	18*	12	296	4	1	3	200	6	-1
4	265	3	-2	6	87	4	7	8	587	4	-6	13	111	5	-3	4	46	21	18*
5	346	3	-8	7	225	2	5	9	74	5	12	14	33	23	-2*	5	179	9	-6
6	70	5	-2	8	452	4	-6	10	92	5	6	15	169	4	1	6	195	5	-5
7	339	9	-1	9	90	6	6	11	40	10	31*	16	270	3	5	7	180	5	-3
8	165	3	-2	10	71	5	2	12	450	3	2	17	65	37	-6*	8	46	61	6*
9	324	4	-5	11	153	3	1	13	0	40	-8*	18	108	13	5	9	205	5	11
10	93	5	4	12	375	3	2	14	137	3	8	19	174	7	4	10	180	6	-6
11	356	4	-1	13	193	3	-1	15	47	9	30*	28	215	11	-8	H ₂ L=	7,	-5	
12	184	3	2	14	119	4	3	16	331	3	1	21	63	16	-2*	0	189	4	-9
13	257	3	-2	15	199	3	2	17	16	31	-5*	H ₂ L=	6,	5	1	164	4	-1	
14	41	11	8*	16	323	3	-2	18	159	4	0	1	154	3	-8	2	18	40	8*
15	321	3	1	17	125	4	-2	19	30	31	-2*	2	221	3	-0	3	214	3	-1
16	187	3	1	18	119	5	5	20	279	3	0	3	142	4	-4	4	209	3	-1
17	134	4	3	19	244	3	2	21	49	35	47*	4	89	6	4	5	136	4	4
18	86	6	9	20	256	3	3	22	140	8	6	5	171	4	-7	6	30	31	-0*
19	304	4	3	21	59	10	-7	23	30	41	-2*	6	172	3	4	7	238	4	-2
20	161	4	-2	22	147	8	3	24	212	5	4	7	106	5	-2	8	178	6	5
21	86	9	-7	23	162	6	-1	25	27	43	6*	8	83	11	9	9	95	8	4
22	82	11	2	24	198	9	-2	H ₂ L=	6,	3	9	214	3	-3	10	36	38	15*	
23	220	7	-3	25	20	41	-13*	1	122	4	2	10	158	4	-2	11	261	4	4
24	86	28	-11*	26	132	8	4	2	344	3	-6	11	91	6	6	12	127	7	-9
25	0	53	-50*	H ₂ L=	6,	1	3	122	3	1	12	28	31	3*	13	92	18	12	
H ₂ L=	6,	-1	1	87	4	-5	4	92	4	-8	13	241	6	7	14	37	53	2*	
1	290	3	-3	2	432	4	-3	5	100	4	8	14	183	5	12	15	229	5	-3
2	287	2	-4	3	26	18	1*	6	331	3	-1	15	31	40	-10*	H ₂ L=	7,	-4	
3	138	3	2	4	77	7	7	7	72	5	0	16	64	14	2*	1	313	3	-2
4	38	8	16*	5	120	3	-2	8	177	3	-3	17	225	12	7	2	62	7	-3
5	315	3	-8	6	404	4	-4	9	61	7	7	18	141	10	-4	3	326	3	1
6	257	4	-1	7	34	12	16*	10	337	3	-3	H ₂ L=	6,	6	4	53	8	46	
7	42	8	-3*	8	164	3	-1	11	61	14	11*	0	136	5	10	5	308	4	-6
8	77	4	-2	9	76	4	9	12	146	3	2	1	248	3	-1	6	62	7	5
9	235	3	3	10	400	4	-7	13	182	5	0	2	27	31	4*	7	247	3	-3

STRUCTURE FACTORS CONTINUED FOR
(NH2)2CO)3 UO2 SO4 - TRISUREADIOXOURANATE(VI) SULFATE.

K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL
8	51	9	35	21	273	5	12	4	356	4	-6	12	262	3	-2	3	153	6	-7
9	293	3	-3	22	84	12	-5	5	183	3	1	13	24	30	13*	4	62	27	28*
10	46	12	5*		H ₂ L=	7,	-1	6	124	4	1	14	142	5	1	5	209	5	-0
11	209	3	4	0	189	3	4	7	105	5	4	15	49	14	10*	6	196	5	-3
12	50	11	8*	1	264	3	-1	8	271	3	-5	16	294	5	6	7	131	7	-8
13	298	4	1	2	22	26	2*	9	115	5	2	17	45	23	32*	8	45	26	27*
14	45	22	-6*	3	277	3	-4	10	125	4	4	18	167	6	9	9	206	5	10
15	166	5	5	4	194	3	-0	11	182	5	5	19	72	13	4*		H ₂ L=	8,	-4
16	40	50	16*	5	233	3	-4	12	287	3	-1	20	235	5	-1	0	66	8	-5
17	321	4	6	6	81	5	-0	13	50	12	-7*		H ₂ L=	7,	4	1	221	3	-3
18	44	29	-4*	7	258	3	3	14	109	5	-0	1	153	4	6	2	0	37	-0*
19	99	9	3	8	241	4	1	15	113	6	9	2	339	3	-2	3	277	4	6
	H ₂ L=	7,	-3	9	173	3	-5	16	268	3	1	3	151	4	-3	4	95	8	11
0	50	8	2	10	137	4	5	17	71	8	-2	4	44	11	12*	5	182	5	-3
1	276	3	-6	11	267	3	0	18	174	4	-2	5	137	4	7	6	0	37	-25*
2	18	28	-2*	12	196	3	-2	19	103	8	-4	6	294	3	-1	7	245	4	3
3	343	4	-3	13	101	5	-2	20	245	7	-2	7	142	4	-1	8	64	21	0*
4	21	27	12*	14	101	5	-2	21	56	18	6*	8	39	15	7*	9	166	5	9
5	117	4	2	15	282	6	8	22	188	9	10	9	181	4	2	10	60	14	9*
6	49	18	-9*	16	159	4	2	23	91	11	15	10	254	3	3	11	260	6	5
7	319	4	-0	17	72	8	-8		H ₂ L=	7,	2	11	120	5	4	12	73	16	17*
8	39	14	16*	18	132	5	-1	1	57	7	11	12	86	9	13	13	111	8	1
9	114	4	7	19	266	4	1	2	479	4	-7	13	164	6	6	14	69	12	17
10	34	20	16*	20	145	6	-3	3	38	38	32*	14	248	5	6		H ₂ L=	8,	-3
11	263	3	3	21	48	25	11*	4	47	11	10*	15	22	49	-33*	1	275	3	-2
12	22	35	-2*	22	151	6	9	5	22	29	-1*	16	101	9	5	2	39	15	-15*
13	118	4	4	23	222	5	8	6	396	3	-5	17	141	12	1	3	240	3	-3
14	45	12	25*		H ₂ L=	7,	0	7	15	30	-18*	18	217	6	2	4	31	35	-1*
15	335	3	-1	1	198	3	2	8	55	8	1		H ₂ L=	7,	5	5	277	3	-1
16	24	41	20*	2	374	3	-8	9	19	36	16*	0	242	3	-18	6	58	18	23*
17	85	10	-4	3	130	4	11	10	320	3	-2	1	127	4	6	7	212	4	6
18	56	16	23*	4	53	7	4	11	33	17	5*	2	29	30	20*	8	51	10	32*
19	325	4	7	5	183	3	2	12	51	9	4	3	144	5	-8	9	262	3	-0
20	45	24	48*	6	380	4	-6	13	61	12	31*	4	242	3	2	10	0	38	-34*
21	0	42	-33*	7	188	4	1	14	344	3	0	5	94	10	-1	11	123	7	3
	H ₂ L=	7,	-2	8	47	9	31*	15	45	12	15*	6	0	38	-8*	12	52	18	58*
1	355	4	-4	9	193	3	2	16	113	5	6	7	196	5	8	13	298	4	4
2	225	3	-0	10	373	3	2	17	0	32	-10*	8	205	5	4	14	34	40	1*
3	328	3	-2	11	69	6	10	18	314	4	4	9	51	56	-17*	15	128	11	-7
4	60	6	17	12	93	6	6	19	25	40	2*	10	33	38	1*	16	48	22	38*
5	344	3	3	13	242	3	7	20	152	6	12	11	192	9	-1	17	312	5	6
6	142	3	7	14	309	4	-1	21	0	42	-4*	12	176	6	8		H ₂ L=	8,	-2
7	242	3	-0	15	43	12	0*	22	221	9	0	13	9	45	-27*	0	107	4	-1
8	39	11	8*	16	111	5	-3		H ₂ L=	7,	3	14	86	10	16	1	231	3	1
9	293	3	1	17	232	4	7	0	361	3	-4		H ₂ L=	7,	6	2	34	22	27*
10	171	3	-2	18	220	3	-2	1	46	9	1*	1	205	5	6	3	281	3	-6
11	185	3	-0	19	41	40	-13*	2	60	7	18	2	95	9	7	4	148	5	8
12	31	28	16*	20	127	7	16	3	61	7	6	3	184	5	-10	5	191	3	0
13	299	3	-1	21	188	5	5	4	311	3	-6	4	32	35	14*	6	21	29	9*
14	133	4	2	22	180	14	-5	5	38	12	19*	5	211	5	12	7	241	3	1
15	153	4	7	23	52	20	19*	6	106	4	0	6	121	13	19	8	129	5	-3
16	36	37	-1*		H ₂ L=	7,	1	7	88	5	5	7	149	7	-14	9	144	4	6
17	322	4	3	0	372	4	-2	8	266	3	-2	8	33	41	-2*	10	44	12	34*
18	126	7	-6	1	158	3	1	9	38	19	23*		H ₂ L=	8,	-5	11	263	4	5
19	97	9	-2	2	80	5	13	10	87	7	4	1	203	5	5	12	113	5	1
20	54	18	9*	3	141	3	0	11	75	9	18	2	233	5	1	13	93	14	-14

STRUCTURE FACTORS CONTINUED FOR
(NH2)2CO)3 UO2 SO4 - TRISUREADIOXOURANATE(VI) SULFATE.

K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL	K	FOB	SG	DEL
14	42	24	32*	10	260	3	-0	8	233	5	-2	9	176	5	-8	5	51	18	38*
15	261	4	4	11	105	5	-1	9	77	11	-1	10	0	42	-37*	6	60	14	12*
16	114	8	-3	12	117	5	8	10	95	9	10	11	252	5	-2	7	46	23	41*
17	93	9	7	13	127	5	6	11	119	7	30	12	121	11	6	8	269	5	-5
18	32	41	13*	14	243	5	-4	12	221	5	6	13	134	7	-4	9	0	40	-1*
	H ₂ L=	8,	-1	15	68	15	-3*	13	79	15	7*	14	28	41	-13*		H ₂ L=	10,	-1
1	246	4	1	16	154	6	16		H ₂ L=	8,	5		H ₂ L=	9,	0	1	183	5	9
2	181	3	-3	17	114	8	7	1	134	7	7	1	144	6	5	2	136	7	9
3	285	4	1	18	240	5	4	2	253	5	10	2	199	3	-3	3	176	5	10
4	95	5	5	19	86	11	11	3	86	10	-9	3	110	6	-1		H ₂ L=	10,	0
5	225	3	-0		H ₂ L=	8,	2	4	63	15	34*	4	75	10	4	0	125	9	-6
6	133	4	-2	0	391	3	-3	5	138	7	1	5	155	8	6	1	110	8	2
7	246	3	-3	1	30	32	-6*	6	241	5	7	6	177	5	0	2	41	33	25*
8	73	7	0	2	77	10	19	7	52	19	-21*	7	85	9	0	3	142	6	4
9	236	3	3	3	57	11	18*		H ₂ L=	9,	-4	8	63	24	-13*	4	129	7	2
10	99	5	-0	4	353	3	2	1	184	5	14	9	207	5	2				
11	152	4	-1	5	5	30	-9*	2	98	9	10	10	160	6	1				
12	65	8	0	6	76	6	1	3	158	7	4	11	20	55	-32*				
13	270	3	2	7	32	36	8*	4	0	40	-7*	12	57	17	-18*				
14	134	7	2	8	291	3	1	5	215	5	9	13	215	5	4				
15	110	7	2	9	41	16	9*		H ₂ L=	9,	-3	14	149	7	-5				
16	104	18	4	10	86	6	2	0	0	39	-40*		H ₂ L=	9,	1				
17	240	5	-3	11	43	15	27*	1	224	5	0	0	287	4	-5				
18	109	9	-9	12	266	4	1	2	54	15	44*	1	116	7	-6				
19	91	10	-2	13	31	38	15*	3	234	4	1	2	0	38	-9*				
	H ₂ L=	8,	0	14	127	7	21	4	47	21	16*	3	116	7	8				
0	300	4	-7	15	31	48	5*	5	187	7	-1	4	276	4	-7				
1	109	4	2	16	252	8	-9	6	0	47	-15*	5	147	8	3				
2	30	20	6*	17	37	42	32*	7	261	4	11	6	0	38	-22*				
3	105	5	9	18	140	7	19	8	68	13	12*	7	153	6	16				
4	317	3	0		H ₂ L=	8,	3	9	156	9	-7	8	274	6	-3				
5	119	4	3	1	41	16	19*	10	0	41	-2*	9	136	6	10				
6	68	12	18	2	342	3	-4		H ₂ L=	9,	-2	10	55	19	9*				
7	190	5	5	3	37	15	28*	1	203	5	-1	11	160	6	6				
8	277	3	-1	4	45	14	17*	2	80	9	16	12	248	5	-3				
9	74	6	5	5	59	9	12	3	193	7	-4	13	84	11	-9				
10	62	17	5*	6	312	3	-1	4	41	25	8*	14	83	11	15				
11	203	3	-0	7	24	31	12*	5	236	4	4		H ₂ L=	9,	2				
12	255	4	2	8	58	9	4	6	76	12	11	1	49	19	-1*				
13	23	32	-4*	9	47	18	32*	7	126	7	-9	2	217	5	-15				
14	76	11	-10	10	267	4	5	8	18	39	9*	3	50	17	8*				
15	220	5	-6	11	12	38	-3*	9	260	4	3	4	25	38	7*				
16	232	5	3	12	123	7	8	10	54	17	-17*	5	0	41	-37*				
17	43	60	13*	13	26	40	8*	11	113	8	0	6	243	4	3				
18	106	9	14	14	265	10	-8	12	41	30	15*	7	57	20	39*				
19	172	6	-3	15	0	41	-5*	13	242	6	8	8	70	28	-4*				
	H ₂ L=	8,	1	16	133	7	16		H ₂ L=	9,	-1	9	31	41	-17*				
1	159	3	5		H ₂ L=	8,	4	0	168	4	5	10	235	5	4				
2	345	3	-3	0	230	4	3	1	224	3	-6	11	37	39	25*				
3	181	3	2	1	59	15	-26*	2	46	12	34*	12	89	11	-2				
4	57	8	16	2	50	16	42*	3	231	4	8		H ₂ L=	9,	3				
5	124	4	11	3	110	7	-0	4	154	8	5	0	282	5	-5				
6	298	3	-4	4	256	4	5	5	203	5	-4	1	0	39	-8*				
7	137	4	2	5	90	11	4	6	0	54	-15*	2	60	35	54*				
8	72	7	18	6	0	38	-18*	7	256	6	11	3	55	16	37*				
9	97	5	8	7	115	7	9	8	128	7	-2	4	276	4	-1				

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TECHNICAL INFORMATION DEPARTMENT
LAWRENCE BERKELEY LABORATORY
UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA 94720