Full wwPDB X-ray Structure Validation Report ⓘ

Jun 17, 2025 – 01:11 pm BST

PDB ID	:	9FPP / pdb_00009fpp
Title	:	FGD2 (Rv0132c) from Mycobacterium tuberculosis with cofactor F420 crystallised with Anderson-Evans polyoxotungstate
Authors	:	Aderemi, A.; Snee, M.; Levy, C.; Leys, D.
Deposited on	:	2024-06-13
Resolution	:	2.35 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references ⓘ) were used in the production of this report:

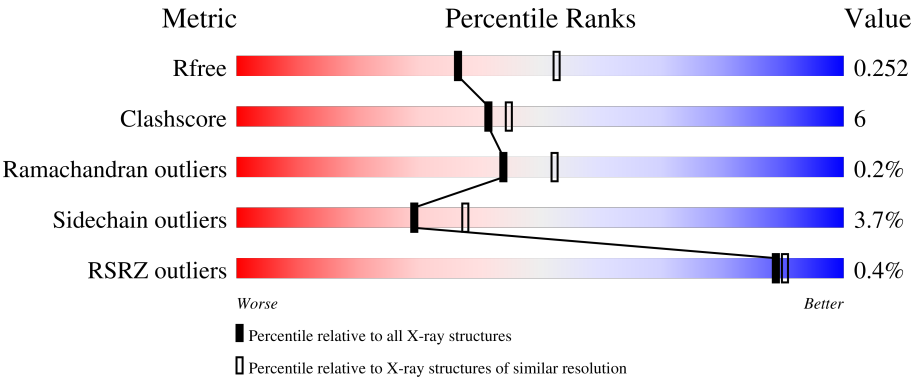
MolProbity	:	4-5-2 with Phenix2.0rc1
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.35 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	1460 (2.36-2.36)
Clashscore	180529	1571 (2.36-2.36)
Ramachandran outliers	177936	1559 (2.36-2.36)
Sidechain outliers	177891	1559 (2.36-2.36)
RSRZ outliers	164620	1460 (2.36-2.36)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	332	83% 11%
1	B	332	% 81% 13%
1	E	332	% 82% 12%
1	F	332	81% 12%

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 10957 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

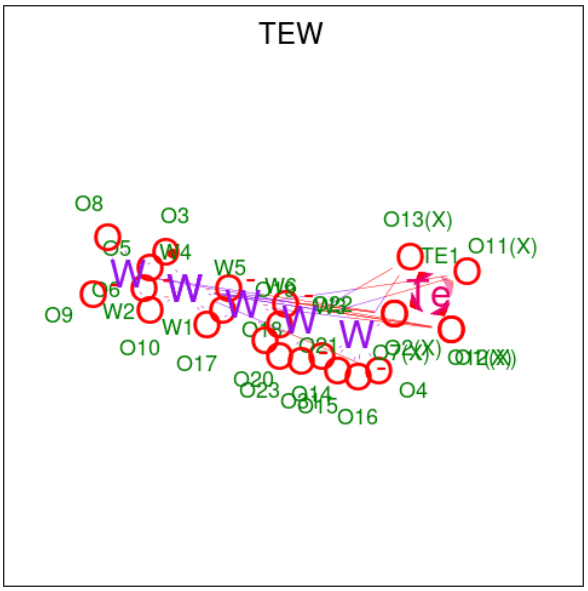
- Molecule 1 is a protein called F420-dependent hydroxymycolic acid dehydrogenase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	319	Total	C	N	O	S	0	2	0
			2463	1566	440	454	3			
1	B	319	Total	C	N	O	S	0	2	0
			2456	1562	436	455	3			
1	E	319	Total	C	N	O	S	0	1	0
			2452	1559	436	454	3			
1	F	318	Total	C	N	O	S	0	2	0
			2458	1562	441	452	3			

There are 8 discrepancies between the modelled and reference sequences:

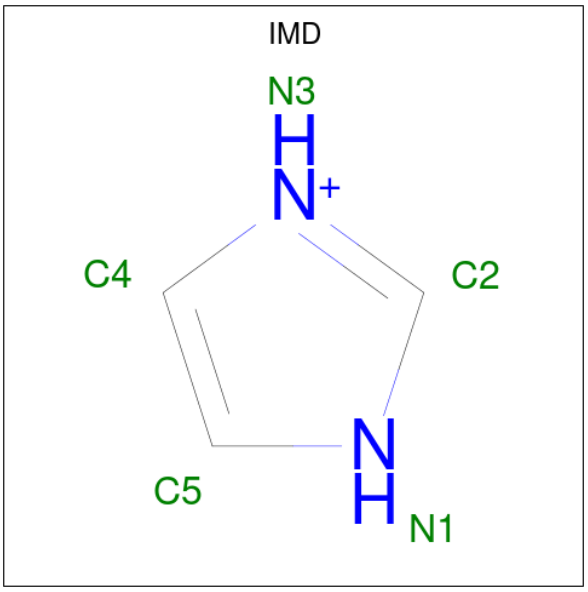
Chain	Residue	Modelled	Actual	Comment	Reference
A	29	GLY	-	expression tag	UNP P96809
A	30	SER	-	expression tag	UNP P96809
B	29	GLY	-	expression tag	UNP P96809
B	30	SER	-	expression tag	UNP P96809
E	29	GLY	-	expression tag	UNP P96809
E	30	SER	-	expression tag	UNP P96809
F	29	GLY	-	expression tag	UNP P96809
F	30	SER	-	expression tag	UNP P96809

- Molecule 2 is 6-tungstotellurate(VI) (CCD ID: TEW) (formula: $O_{24}TeW_6$).



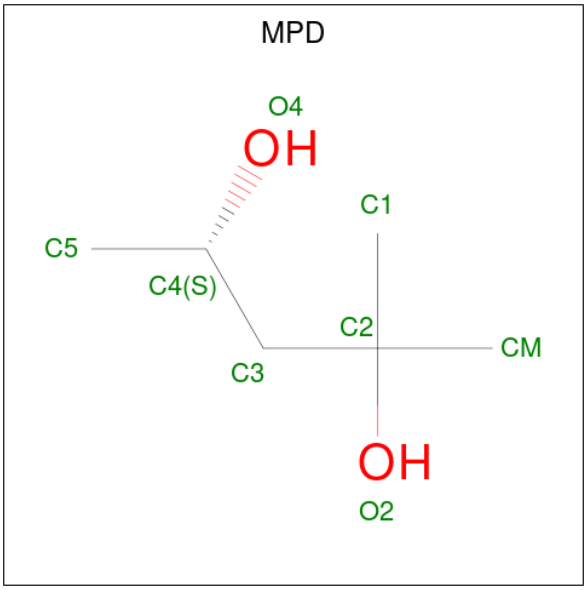
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	O	Te	W	0	1
			62	48	2	12		
2	A	1	Total	O	Te	W	0	0
			31	24	1	6		
2	A	1	Total	O	Te	W	0	0
			31	24	1	6		
2	B	1	Total	O	Te	W	0	0
			31	24	1	6		
2	E	1	Total	O	Te	W	0	0
			27	20	1	6		
2	E	1	Total	O	Te	W	0	1
			62	48	2	12		
2	E	1	Total	O	Te	W	0	0
			31	24	1	6		

- Molecule 3 is IMIDAZOLE (CCD ID: IMD) (formula: $C_3H_5N_2$).



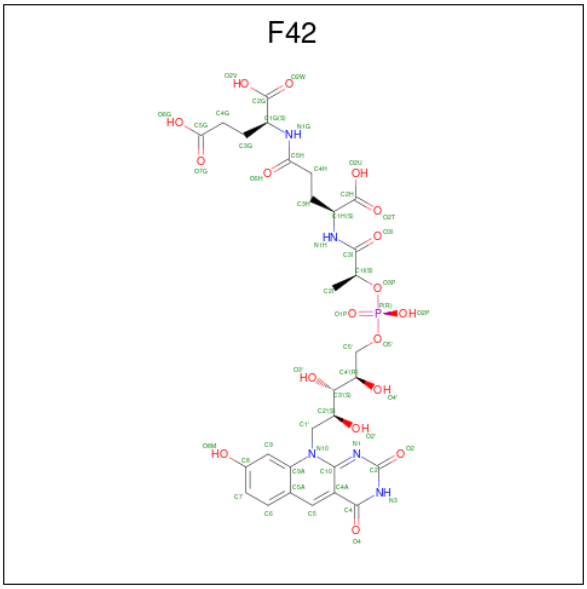
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C N 5 3 2	0	0
3	E	1	Total C N 5 3 2	0	0

- Molecule 4 is (4S)-2-METHYL-2,4-PENTANEDIOL (CCD ID: MPD) (formula: $C_6H_{14}O_2$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	B	1	Total C O 8 6 2	0	0
4	F	1	Total C O 8 6 2	0	0

- Molecule 5 is COENZYME F420 (CCD ID: F42) (formula: $C_{29}H_{36}N_5O_{18}P$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
5	B	1	Total	C	N	O	P	0	0
			53	29	5	18	1		
5	F	1	Total	C	N	O	P	0	0
			53	29	5	18	1		

- Molecule 6 is water.

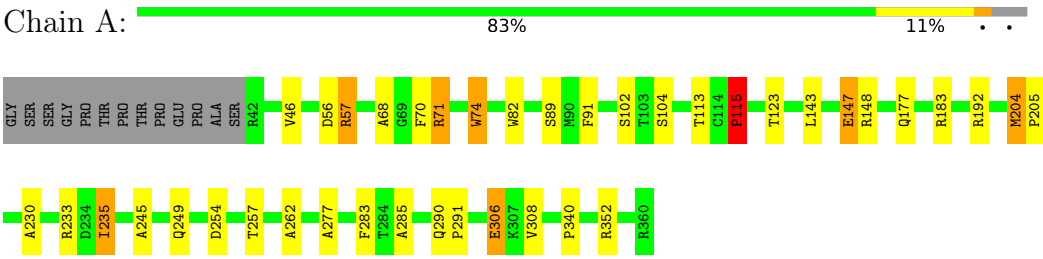
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	182	Total	O	0	0
			182	182		
6	B	163	Total	O	0	0
			163	163		
6	E	178	Total	O	0	0
			178	178		
6	F	198	Total	O	0	0
			198	198		

3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

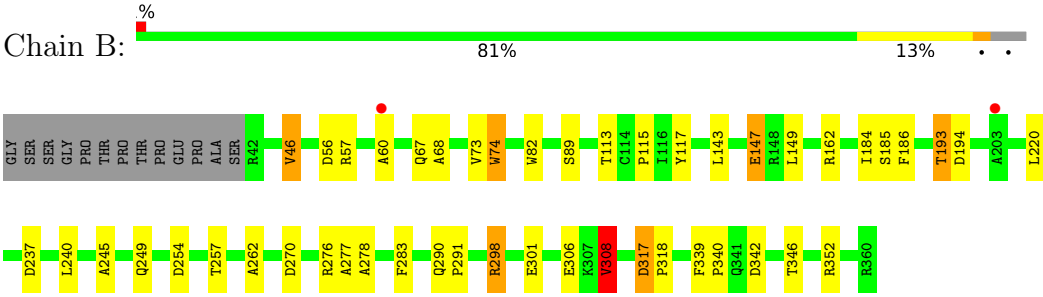
• Molecule 1: F420-dependent hydroxymycolic acid dehydrogenase

Chain A:



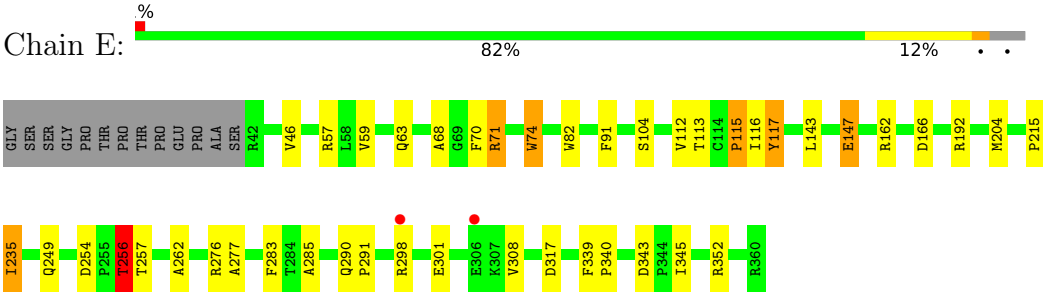
• Molecule 1: F420-dependent hydroxymycolic acid dehydrogenase

Chain B:



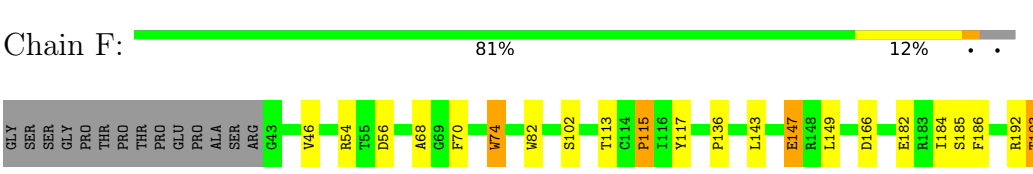
• Molecule 1: F420-dependent hydroxymycolic acid dehydrogenase

Chain E:



• Molecule 1: F420-dependent hydroxymycolic acid dehydrogenase

Chain F:




L220
A230
Q231
A232
R233
Q249
D264
T257
A262
E263
D270
D271
K272
R276
F283
T284
A285
Q290
P291
E306
K307
V308
D317
P318
D342
R352
P357
R360

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	87.31Å 89.31Å 155.63Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	77.82 – 2.35 77.82 – 2.35	Depositor EDS
% Data completeness (in resolution range)	100.0 (77.82-2.35) 100.0 (77.82-2.35)	Depositor EDS
R_{merge}	0.28	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.89 (at 2.34Å)	Xtriage
Refinement program	REFMAC 5.8.0425	Depositor
R, R_{free}	0.210 , 0.251 0.211 , 0.252	Depositor DCC
R_{free} test set	2615 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å^2)	20.0	Xtriage
Anisotropy	0.553	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 43.2	EDS
L-test for twinning[2]	$< \|L\| > = 0.45$, $< L^2 > = 0.28$	Xtriage
Estimated twinning fraction	0.000 for k,h,-l	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	10957	wwPDB-VP
Average B, all atoms (Å^2)	21.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 59.91 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 1.6460e-05. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: IMD, MPD, TEW, F42

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	0.61	0/2534	1.18	5/3459 (0.1%)
1	B	0.60	0/2527	1.17	6/3451 (0.2%)
1	E	0.62	0/2520	1.19	10/3442 (0.3%)
1	F	0.60	1/2528 (0.0%)	1.22	13/3448 (0.4%)
All	All	0.61	1/10109 (0.0%)	1.19	34/13800 (0.2%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	2
1	B	0	2
1	E	0	1
1	F	0	3
All	All	0	8

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	276	ARG	NE-CZ	5.03	1.38	1.33

All (34) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	F	342	ASP	CA-CB-CG	9.30	121.90	112.60
1	B	147	GLU	CB-CA-C	-7.93	92.81	109.38
1	F	276	ARG	CA-CB-CG	7.57	129.24	114.10
1	A	147	GLU	CB-CA-C	-7.48	93.74	109.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	E	147	GLU	CB-CA-C	-7.38	93.95	109.38
1	F	147	GLU	N-CA-CB	6.93	123.98	111.37
1	F	276	ARG	CG-CD-NE	6.91	127.19	112.00
1	F	342	ASP	CB-CA-C	6.68	121.50	110.81
1	E	115	PRO	N-CA-CB	-6.05	96.90	103.25
1	E	117	TYR	N-CA-CB	5.95	120.55	110.49
1	E	204	MET	CB-CA-C	5.84	116.36	109.47
1	F	115	PRO	N-CA-CB	-5.81	97.15	103.25
1	E	71	ARG	CG-CD-NE	5.74	124.64	112.00
1	F	276	ARG	NE-CZ-NH2	5.74	124.37	119.20
1	F	276	ARG	CB-CG-CD	5.54	124.04	111.30
1	F	117	TYR	N-CA-CB	5.50	119.79	110.49
1	E	339	PHE	CA-CB-CG	5.49	119.29	113.80
1	F	56	ASP	CA-CB-CG	5.47	118.07	112.60
1	E	162	ARG	CG-CD-NE	5.44	123.97	112.00
1	B	117	TYR	N-CA-CB	5.43	119.67	110.49
1	A	204	MET	CB-CA-C	5.42	115.86	109.47
1	E	166	ASP	CA-CB-CG	5.39	117.99	112.60
1	B	194	ASP	CA-CB-CG	5.31	117.91	112.60
1	B	339	PHE	CA-CB-CG	5.24	119.03	113.80
1	F	204	MET	CB-CA-C	5.23	115.64	109.47
1	B	308	VAL	N-CA-CB	5.22	119.29	110.56
1	A	91	PHE	CA-CB-CG	-5.20	108.60	113.80
1	B	56	ASP	CA-CB-CG	5.13	117.73	112.60
1	E	256	THR	CA-CB-OG1	-5.12	101.91	109.60
1	A	115	PRO	N-CA-CB	-5.08	97.92	103.25
1	F	194	ASP	CA-CB-CG	5.08	117.68	112.60
1	F	166	ASP	CA-CB-CG	5.05	117.66	112.60
1	E	91	PHE	CA-CB-CG	-5.05	108.75	113.80
1	A	57	ARG	NE-CZ-NH1	-5.02	116.48	121.50

There are no chirality outliers.

All (8) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	192	ARG	Sidechain
1	A	57	ARG	Sidechain
1	B	162	ARG	Sidechain
1	B	298	ARG	Sidechain
1	E	192	ARG	Sidechain
1	F	233	ARG	Sidechain
1	F	360[A]	ARG	Sidechain

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Mol	Chain	Res	Type	Group
1	F	360[B]	ARG	Sidechain

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2463	0	2392	26	0
1	B	2456	0	2377	29	0
1	E	2452	0	2370	25	0
1	F	2458	0	2388	35	0
2	A	124	0	0	13	0
2	B	31	0	0	1	0
2	E	120	0	0	6	0
3	A	5	0	5	2	0
3	E	5	0	5	2	0
4	B	8	0	14	0	0
4	F	8	0	14	0	0
5	B	53	0	31	0	0
5	F	53	0	31	1	0
6	A	182	0	0	8	0
6	B	163	0	0	5	0
6	E	178	0	0	9	0
6	F	198	0	0	13	0
All	All	10957	0	9627	125	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 6.

All (125) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:232:ALA:HB2	6:F:501:HOH:O	1.54	1.06
1:E:276:ARG:NH1	2:E:401:TEW:O9	1.95	1.00
1:B:60:ALA:HB2	6:B:531:HOH:O	1.71	0.89
2:A:401[B]:TEW:O22	1:B:298:ARG:NH2	2.07	0.88
1:B:276:ARG:NH1	1:B:342:ASP:OD2	2.08	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:54[A]:ARG:NH1	6:F:503:HOH:O	2.15	0.79
1:E:116:ILE:HG13	6:E:505:HOH:O	1.81	0.78
1:A:214:GLY:HA3	2:A:403:TEW:O14	1.84	0.78
2:A:401[B]:TEW:O4	6:A:501:HOH:O	2.04	0.74
1:A:123:THR:HG22	6:B:532:HOH:O	1.89	0.72
1:B:234:ASP:OD2	6:B:501:HOH:O	2.09	0.71
2:A:401[B]:TEW:O18	2:A:401[B]:TEW:O21	2.10	0.70
1:B:46:VAL:HG22	1:B:73:VAL:HG12	1.74	0.70
1:A:215:PRO:HD2	2:A:403:TEW:O11	1.93	0.68
1:F:263:GLU:O	6:F:501:HOH:O	2.11	0.68
1:A:233[A]:ARG:HD3	6:A:659:HOH:O	1.94	0.68
1:F:232:ALA:CA	6:F:501:HOH:O	2.42	0.66
1:E:345:ILE:HB	6:E:623:HOH:O	1.94	0.66
1:E:234:ASP:OD2	6:E:501:HOH:O	2.14	0.65
2:A:402:TEW:O31	6:A:503:HOH:O	2.14	0.65
1:F:194:ASP:OD2	6:F:502:HOH:O	2.14	0.65
2:A:401[A]:TEW:O21	6:A:502:HOH:O	2.14	0.64
1:E:117:TYR:N	6:E:505:HOH:O	2.31	0.63
1:A:148:ARG:NH1	6:A:506:HOH:O	2.25	0.62
2:A:401[A]:TEW:O8	1:F:182:GLU:OE1	2.18	0.62
1:F:342:ASP:OD1	6:F:504:HOH:O	2.16	0.62
1:B:184:ILE:O	1:B:193:THR:CG2	2.48	0.62
2:E:403:TEW:O10	3:E:404:IMD:N1	2.31	0.62
1:B:82:TRP:CH2	1:B:147:GLU:HG2	2.36	0.61
1:F:184:ILE:O	1:F:193:THR:CG2	2.49	0.61
1:B:185:SER:HA	1:B:193:THR:HG22	1.83	0.60
1:E:298:ARG:HD2	6:E:576:HOH:O	2.02	0.59
1:A:245:ALA:O	1:A:249:GLN:HG2	2.02	0.59
1:B:245:ALA:O	1:B:249:GLN:HG2	2.03	0.58
1:E:59:VAL:O	1:E:63:GLN:HG3	2.05	0.57
1:F:185:SER:HA	1:F:193:THR:HG22	1.85	0.57
1:B:67:GLN:NE2	6:B:502:HOH:O	2.18	0.56
1:E:117:TYR:CD2	6:E:505:HOH:O	2.53	0.56
1:F:232:ALA:N	6:F:501:HOH:O	2.37	0.56
1:E:57:ARG:HD2	6:E:523:HOH:O	2.06	0.55
1:F:136:PRO:HA	6:F:541:HOH:O	2.05	0.55
1:E:215:PRO:HD2	2:E:403:TEW:O7	2.06	0.55
1:B:278:ALA:HB1	1:B:308:VAL:HG22	1.89	0.55
1:A:215:PRO:HG2	2:A:403:TEW:O22	2.08	0.54
1:F:232:ALA:CB	6:F:501:HOH:O	2.26	0.54
1:E:345:ILE:HG13	6:E:603:HOH:O	2.05	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:68:ALA:HB1	1:E:352:ARG:HB2	1.91	0.53
1:B:290:GLN:HB2	1:B:291:PRO:CD	2.38	0.53
1:A:68:ALA:HB1	1:A:352:ARG:HB2	1.92	0.52
1:F:360[B]:ARG:CZ	1:F:360[B]:ARG:HB2	2.38	0.52
2:B:403:TEW:O19	3:E:404:IMD:H2	2.10	0.52
1:F:290:GLN:HB2	1:F:291:PRO:CD	2.40	0.52
1:B:186:PHE:HB3	1:B:193:THR:HB	1.92	0.51
1:E:57:ARG:NH2	2:E:402[B]:TEW:O3	2.37	0.51
1:E:290:GLN:HB2	1:E:291:PRO:CD	2.41	0.51
1:B:68:ALA:HB1	1:B:352:ARG:HB2	1.92	0.50
1:A:71:ARG:HG3	6:A:627:HOH:O	2.12	0.50
1:F:68:ALA:HB1	1:F:352:ARG:HB2	1.92	0.50
1:A:290:GLN:HB2	1:A:291:PRO:CD	2.42	0.50
1:F:186:PHE:HB3	1:F:193:THR:HB	1.93	0.49
1:A:230:ALA:HB3	1:A:235:ILE:HD13	1.94	0.49
1:A:254:ASP:HB3	1:A:257:THR:HG23	1.96	0.48
2:A:403:TEW:O21	3:A:404:IMD:H5	2.13	0.48
1:E:285:ALA:HB2	1:E:308:VAL:HG22	1.95	0.48
1:E:254:ASP:HB3	1:E:257:THR:HG23	1.96	0.48
1:F:230:ALA:O	1:F:262:ALA:HA	2.13	0.48
1:E:254:ASP:OD1	1:E:256:THR:HB	2.13	0.47
1:F:291:PRO:HD2	6:F:616:HOH:O	2.14	0.47
1:A:254:ASP:HB2	1:F:249:GLN:NE2	2.29	0.47
1:F:82:TRP:CG	1:F:283:PHE:CZ	3.02	0.47
1:A:82:TRP:CG	1:A:283:PHE:CZ	3.02	0.47
1:B:230:ALA:O	1:B:262:ALA:HA	2.15	0.47
1:B:270:ASP:HB2	6:B:586:HOH:O	2.15	0.46
1:A:56:ASP:O	6:A:505:HOH:O	2.20	0.46
1:B:82:TRP:CG	1:B:283:PHE:CZ	3.03	0.46
1:E:82:TRP:CG	1:E:283:PHE:CZ	3.03	0.46
1:A:177:GLN:HG3	6:A:529:HOH:O	2.15	0.45
1:A:285:ALA:HB2	1:A:308:VAL:HG22	1.97	0.45
1:B:254:ASP:HB3	1:B:257:THR:HG23	1.98	0.45
1:F:270:ASP:HB2	6:F:563:HOH:O	2.16	0.45
1:E:230:ALA:HB3	1:E:235:ILE:HD13	1.98	0.45
1:F:254:ASP:HB3	1:F:257:THR:HG23	1.99	0.45
1:A:183:ARG:NE	2:A:401[B]:TEW:O5	2.49	0.44
1:F:82:TRP:CE3	1:F:149:LEU:HD21	2.52	0.44
1:F:262:ALA:HB1	6:F:501:HOH:O	2.18	0.44
1:F:186:PHE:H	1:F:193:THR:HG22	1.82	0.44
1:E:113:THR:O	1:E:143:LEU:HA	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:230:ALA:O	1:A:262:ALA:HA	2.16	0.44
1:E:46:VAL:HG23	1:E:70:PHE:CD2	2.53	0.44
1:A:216:GLN:HG3	2:A:403:TEW:O22	2.18	0.44
2:A:403:TEW:O20	3:A:404:IMD:N1	2.51	0.43
1:F:113:THR:O	1:F:143:LEU:HA	2.18	0.43
1:F:317:ASP:HA	1:F:318:PRO:HD3	1.92	0.43
1:E:230:ALA:O	1:E:262:ALA:HA	2.17	0.43
1:B:113:THR:O	1:B:143:LEU:HA	2.19	0.43
1:B:317:ASP:HA	1:B:318:PRO:HD3	1.93	0.42
1:F:74:TRP:C	1:F:74:TRP:CD1	2.97	0.42
1:B:57:ARG:O	1:B:60:ALA:HB3	2.19	0.42
1:F:46:VAL:HG23	1:F:70:PHE:CD1	2.54	0.42
1:B:74:TRP:C	1:B:74:TRP:CD1	2.97	0.42
1:A:277:ALA:HB1	1:A:340:PRO:HG2	2.01	0.42
2:E:402[B]:TEW:O4	2:E:402[B]:TEW:O2	2.38	0.42
1:F:306:GLU:CD	1:F:306:GLU:H	2.27	0.42
2:E:402[B]:TEW:O16	2:E:402[B]:TEW:O31	2.37	0.42
5:F:402:F42:H4'	5:F:402:F42:H1'2	1.78	0.42
1:A:46:VAL:HG23	1:A:70:PHE:CD2	2.56	0.41
1:E:74:TRP:CD1	1:E:74:TRP:C	2.98	0.41
1:F:285:ALA:HB2	1:F:308:VAL:HG22	2.01	0.41
1:F:357:PRO:HB3	6:F:652:HOH:O	2.19	0.41
1:A:74:TRP:CD1	1:A:74:TRP:C	2.98	0.41
1:B:186:PHE:H	1:B:193:THR:HG22	1.84	0.41
1:A:204:MET:HA	1:A:205:PRO:HD3	1.92	0.41
1:B:277:ALA:HB1	1:B:340:PRO:HG2	2.02	0.41
1:F:360[B]:ARG:CZ	1:F:360[B]:ARG:CB	2.97	0.41
1:A:113:THR:O	1:A:143:LEU:HA	2.20	0.41
6:E:524:HOH:O	1:F:192:ARG:HD2	2.21	0.41
1:B:278:ALA:HB1	1:B:308:VAL:CG2	2.50	0.41
1:E:277:ALA:HB1	1:E:340:PRO:HG2	2.03	0.41
1:B:82:TRP:CE3	1:B:149:LEU:HD21	2.55	0.40
1:B:306[B]:GLU:CD	1:B:306[B]:GLU:H	2.29	0.40
1:B:220:LEU:C	1:B:220:LEU:HD23	2.46	0.40
1:F:220:LEU:C	1:F:220:LEU:HD23	2.46	0.40
1:A:306[A]:GLU:CD	1:A:306[A]:GLU:H	2.29	0.40
1:B:237:ASP:OD2	1:B:240:LEU:HG	2.21	0.40
1:E:343:ASP:OD1	1:E:343:ASP:N	2.51	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	319/332 (96%)	310 (97%)	7 (2%)	2 (1%)	22	24
1	B	319/332 (96%)	308 (97%)	10 (3%)	1 (0%)	37	43
1	E	318/332 (96%)	309 (97%)	9 (3%)	0	100	100
1	F	317/332 (96%)	308 (97%)	9 (3%)	0	100	100
All	All	1273/1328 (96%)	1235 (97%)	35 (3%)	3 (0%)	44	52

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	89	SER
1	A	89	SER
1	A	115	PRO

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	245/254 (96%)	236 (96%)	9 (4%)	29	38
1	B	244/254 (96%)	236 (97%)	8 (3%)	33	42
1	E	243/254 (96%)	232 (96%)	11 (4%)	23	29
1	F	244/254 (96%)	235 (96%)	9 (4%)	29	38
All	All	976/1016 (96%)	939 (96%)	37 (4%)	29	37

All (37) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	71	ARG
1	A	74	TRP
1	A	102	SER
1	A	104	SER
1	A	115	PRO
1	A	147	GLU
1	A	235	ILE
1	A	306[A]	GLU
1	A	306[B]	GLU
1	B	46	VAL
1	B	74	TRP
1	B	115	PRO
1	B	193	THR
1	B	301	GLU
1	B	308	VAL
1	B	317	ASP
1	B	346	THR
1	E	71	ARG
1	E	74	TRP
1	E	104	SER
1	E	112	VAL
1	E	115	PRO
1	E	147	GLU
1	E	235	ILE
1	E	249	GLN
1	E	256	THR
1	E	301	GLU
1	E	317	ASP
1	F	74	TRP
1	F	102	SER
1	F	115	PRO
1	F	147	GLU
1	F	193	THR
1	F	272	LYS
1	F	306	GLU
1	F	317	ASP
1	F	342	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (17) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	83	GLN
1	A	85	ASN

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Mol	Chain	Res	Type
1	A	135	ASN
1	B	63	GLN
1	B	83	GLN
1	B	135	ASN
1	B	177	GLN
1	B	354	ASN
1	E	63	GLN
1	E	67	GLN
1	E	83	GLN
1	E	85	ASN
1	E	189	HIS
1	F	83	GLN
1	F	85	ASN
1	F	177	GLN
1	F	311	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains (i)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

15 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
4	MPD	F	401	-	7,7,7	0.22	0	9,10,10	0.50	0
2	TEW	A	402	6	29,42,42	0.89	1 (3%)	12,129,129	3.04	6 (50%)
2	TEW	A	403	-	29,42,42	0.84	0	12,129,129	2.32	4 (33%)
2	TEW	E	403	-	29,42,42	0.88	1 (3%)	12,129,129	3.10	5 (41%)
3	IMD	A	404	-	3,5,5	0.25	0	4,5,5	0.56	0
4	MPD	B	401	-	7,7,7	0.23	0	9,10,10	0.43	0
2	TEW	A	401[B]	-	29,42,42	0.92	1 (3%)	12,129,129	3.73	5 (41%)
2	TEW	E	401	1	18,38,42	0.65	0	12,111,129	3.22	7 (58%)
2	TEW	E	402[B]	6	29,42,42	0.87	1 (3%)	12,129,129	4.86	7 (58%)
5	F42	B	402	-	51,55,55	1.33	5 (9%)	64,79,79	2.24	5 (7%)
2	TEW	A	401[A]	6	29,42,42	0.95	2 (6%)	12,129,129	3.23	8 (66%)
2	TEW	E	402[A]	-	29,42,42	0.89	1 (3%)	12,129,129	3.77	7 (58%)
5	F42	F	402	-	51,55,55	1.20	4 (7%)	64,79,79	2.19	7 (10%)
2	TEW	B	403	-	29,42,42	0.82	0	12,129,129	2.34	5 (41%)
3	IMD	E	404	-	3,5,5	0.25	0	4,5,5	0.58	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	MPD	F	401	-	-	2/5/5/5	-
3	IMD	A	404	-	-	-	0/1/1/1
4	MPD	B	401	-	-	3/5/5/5	-
5	F42	B	402	-	-	5/53/53/53	0/3/3/3
5	F42	F	402	-	-	10/53/53/53	0/3/3/3
3	IMD	E	404	-	-	-	0/1/1/1

All (16) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	B	402	F42	C10-N1	4.73	1.39	1.33
5	F	402	F42	C10-N1	4.04	1.38	1.33
5	B	402	F42	C9-C8	3.94	1.44	1.37
5	B	402	F42	C4-N3	3.81	1.39	1.33
5	F	402	F42	O8M-C8	-3.75	1.28	1.37
5	F	402	F42	C9-C8	3.52	1.43	1.37
5	F	402	F42	C4-N3	3.23	1.38	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	B	402	F42	O8M-C8	-3.18	1.29	1.37
2	E	402[A]	TEW	W5-O11	-2.46	2.21	2.34
2	A	401[A]	TEW	W6-O13	-2.35	2.22	2.34
5	B	402	F42	C4A-C10	2.33	1.43	1.41
2	A	401[A]	TEW	W2-O7	-2.17	2.23	2.34
2	A	402	TEW	W6-O13	-2.16	2.23	2.34
2	E	403	TEW	W6-O13	-2.14	2.23	2.34
2	A	401[B]	TEW	W6-O13	-2.13	2.23	2.34
2	E	402[B]	TEW	W5-O11	-2.02	2.24	2.34

All (66) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	B	402	F42	C4A-C4-N3	-11.37	116.47	124.40
5	F	402	F42	C4A-C4-N3	-11.04	116.70	124.40
5	B	402	F42	C2-N3-C4	11.03	124.46	115.14
2	E	402[B]	TEW	O11-TE1-O7	10.87	104.44	94.65
5	F	402	F42	C2-N3-C4	10.60	124.09	115.14
2	E	402[B]	TEW	O1-TE1-O12	-9.84	85.79	94.65
2	A	401[B]	TEW	O13-TE1-O1	-8.90	86.64	94.65
2	E	402[A]	TEW	O11-TE1-O2	-7.42	87.98	94.65
2	E	402[A]	TEW	O13-TE1-O12	-7.31	88.08	94.65
2	A	401[A]	TEW	O11-TE1-O7	-7.01	88.35	94.65
2	E	403	TEW	O7-TE1-O2	6.81	100.78	94.65
2	A	401[B]	TEW	O7-TE1-O2	6.26	100.29	94.65
2	A	402	TEW	O13-TE1-O2	5.90	92.17	85.21
2	E	403	TEW	O11-TE1-O7	5.63	99.73	94.65
2	E	401	TEW	O7-TE1-O11	5.19	99.33	94.65
2	E	401	TEW	O1-TE1-O13	-5.10	90.07	94.65
2	A	403	TEW	O11-TE1-O7	4.98	99.13	94.65
2	E	402[A]	TEW	O13-TE1-O2	4.82	90.91	85.21
2	E	401	TEW	O1-TE1-O2	4.77	90.85	85.21
2	A	401[B]	TEW	O11-TE1-O7	4.77	98.95	94.65
2	B	403	TEW	O13-TE1-O1	-4.71	90.41	94.65
2	E	402[B]	TEW	O13-TE1-O11	-4.71	79.65	85.21
2	A	403	TEW	O11-TE1-O2	4.59	98.79	94.65
2	A	402	TEW	O13-TE1-O1	-4.41	90.68	94.65
2	A	402	TEW	O13-TE1-O12	-4.21	90.87	94.65
2	E	401	TEW	O12-TE1-O1	-4.11	90.95	94.65
2	A	401[A]	TEW	O1-TE1-O12	-3.91	91.14	94.65
2	E	402[A]	TEW	O11-TE1-O7	3.89	98.15	94.65
2	A	401[B]	TEW	O12-TE1-O7	-3.69	80.85	85.21

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	E	402[B]	TEW	O12-TE1-O11	3.69	89.56	85.21
2	A	401[A]	TEW	O13-TE1-O11	3.59	89.45	85.21
2	E	402[B]	TEW	O7-TE1-O1	-3.57	80.99	85.21
2	B	403	TEW	O7-TE1-O1	3.56	89.42	85.21
2	E	401	TEW	O7-TE1-O2	-3.55	91.46	94.65
2	A	402	TEW	O1-TE1-O12	-3.28	91.70	94.65
2	A	401[A]	TEW	O11-TE1-O2	-3.22	91.76	94.65
2	A	402	TEW	O1-TE1-O2	3.22	89.01	85.21
2	A	401[A]	TEW	O12-TE1-O11	3.17	88.95	85.21
2	A	402	TEW	O7-TE1-O2	-3.17	91.80	94.65
5	B	402	F42	C9A-N10-C10	-3.15	117.78	121.91
2	E	403	TEW	O13-TE1-O1	-3.12	91.85	94.65
2	E	403	TEW	O12-TE1-O7	-3.10	81.54	85.21
2	E	403	TEW	O13-TE1-O2	-3.06	81.59	85.21
2	E	402[B]	TEW	O1-TE1-O2	2.99	88.74	85.21
5	F	402	F42	C1'-N10-C10	2.98	121.08	118.41
5	F	402	F42	C9A-N10-C10	-2.93	118.08	121.91
2	E	401	TEW	O12-TE1-O13	2.86	97.23	94.65
2	A	401[A]	TEW	O7-TE1-O1	2.79	88.51	85.21
2	B	403	TEW	O13-TE1-O12	-2.76	92.17	94.65
5	B	402	F42	O4'-C4'-C5'	-2.71	103.82	109.92
2	A	401[A]	TEW	O1-TE1-O2	2.63	88.31	85.21
2	A	403	TEW	O12-TE1-O11	-2.61	82.13	85.21
2	A	401[A]	TEW	O7-TE1-O2	2.54	96.94	94.65
2	E	401	TEW	O2-TE1-O11	-2.50	92.40	94.65
2	B	403	TEW	O11-TE1-O2	-2.49	92.41	94.65
2	A	403	TEW	O13-TE1-O11	-2.45	82.31	85.21
2	A	401[B]	TEW	O7-TE1-O1	2.40	88.04	85.21
2	E	402[B]	TEW	O7-TE1-O2	-2.38	92.51	94.65
2	B	403	TEW	O1-TE1-O2	2.38	88.02	85.21
5	B	402	F42	C1'-C2'-C3'	-2.37	103.16	109.79
2	E	402[A]	TEW	O12-TE1-O7	2.30	87.92	85.21
2	E	402[A]	TEW	O1-TE1-O2	2.25	87.87	85.21
2	E	402[A]	TEW	O1-TE1-O12	2.21	96.65	94.65
5	F	402	F42	C1'-C2'-C3'	-2.18	103.69	109.79
5	F	402	F42	O2P-P-O1P	2.09	122.59	112.24
5	F	402	F42	C5-C4A-C10	2.06	119.68	117.11

There are no chirality outliers.

All (20) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	B	401	MPD	CM-C2-C3-C4
5	F	402	F42	C5'-O5'-P-O1P
5	F	402	F42	N1G-C1G-C3G-C4G
5	F	402	F42	C5'-O5'-P-O3P
5	B	402	F42	C1G-C3G-C4G-C5G
5	B	402	F42	N1G-C1G-C2G-O2V
4	B	401	MPD	O2-C2-C3-C4
5	B	402	F42	N1G-C1G-C2G-O2W
5	F	402	F42	C5'-O5'-P-O2P
4	F	401	MPD	C2-C3-C4-O4
4	B	401	MPD	C1-C2-C3-C4
5	F	402	F42	C1G-C3G-C4G-C5G
5	F	402	F42	C2G-C1G-C3G-C4G
5	F	402	F42	C4'-C5'-O5'-P
5	B	402	F42	C3G-C4G-C5G-O7G
5	B	402	F42	C3G-C4G-C5G-O6G
5	F	402	F42	N1H-C1H-C3H-C4H
5	F	402	F42	C3G-C4G-C5G-O6G
4	F	401	MPD	C2-C3-C4-C5
5	F	402	F42	C3G-C4G-C5G-O7G

There are no ring outliers.

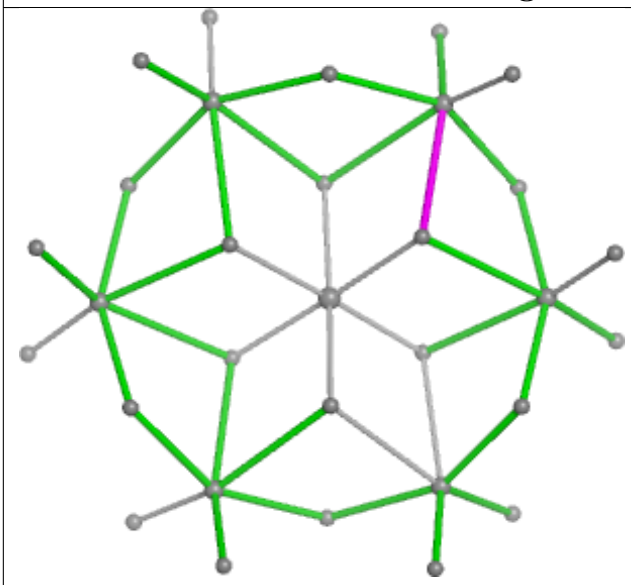
11 monomers are involved in 21 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	402	TEW	1	0
2	A	403	TEW	6	0
2	E	403	TEW	2	0
3	A	404	IMD	2	0
2	A	401[B]	TEW	4	0
2	E	401	TEW	1	0
2	E	402[B]	TEW	3	0
2	A	401[A]	TEW	2	0
5	F	402	F42	1	0
2	B	403	TEW	1	0
3	E	404	IMD	2	0

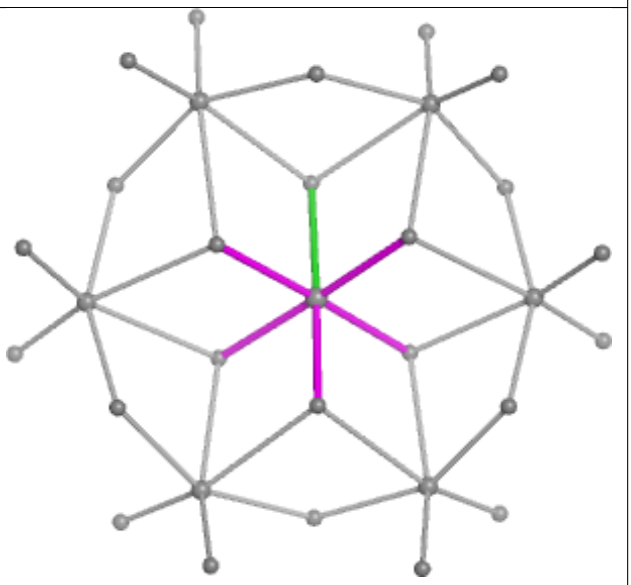
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be

highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

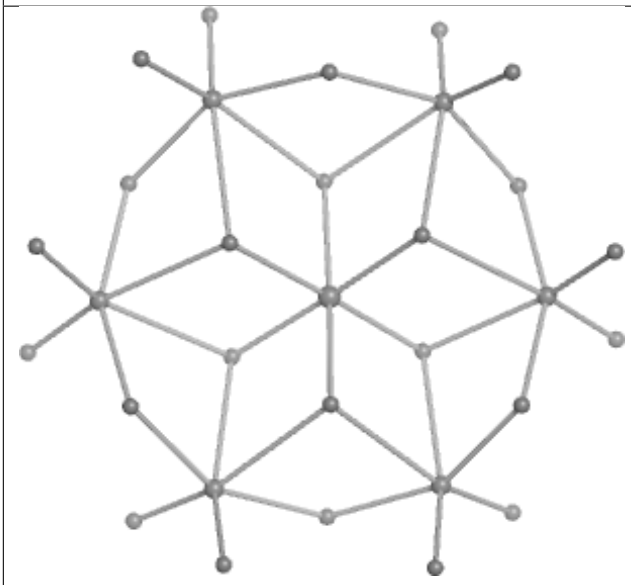
Ligand TEW A 402



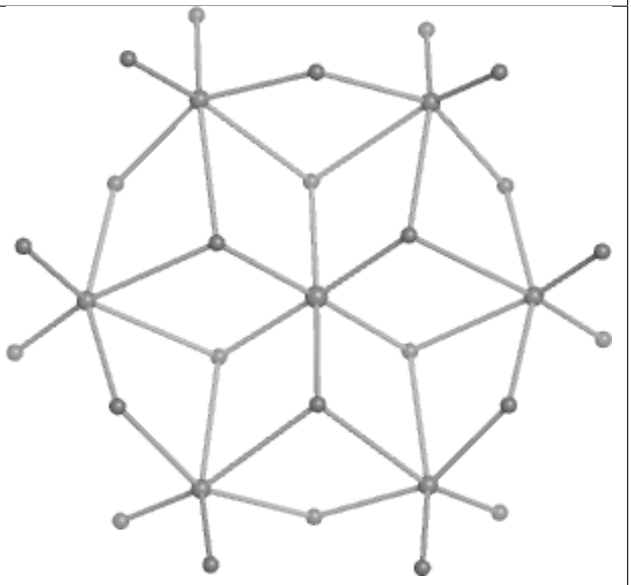
Bond lengths



Bond angles

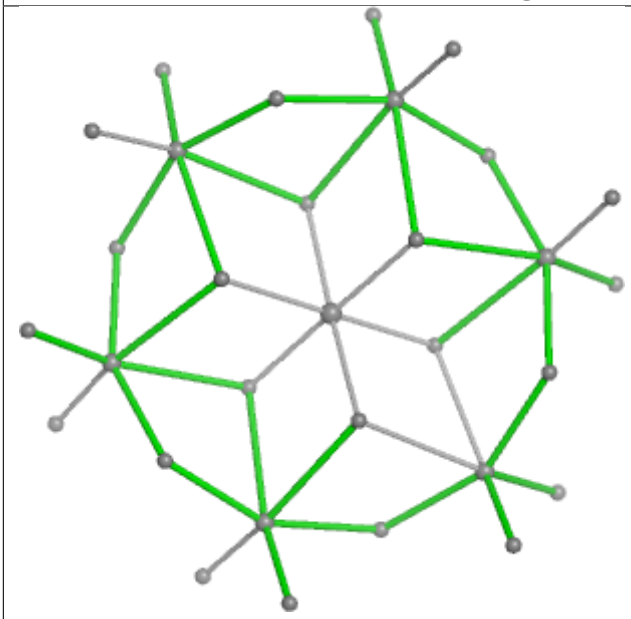


Torsions

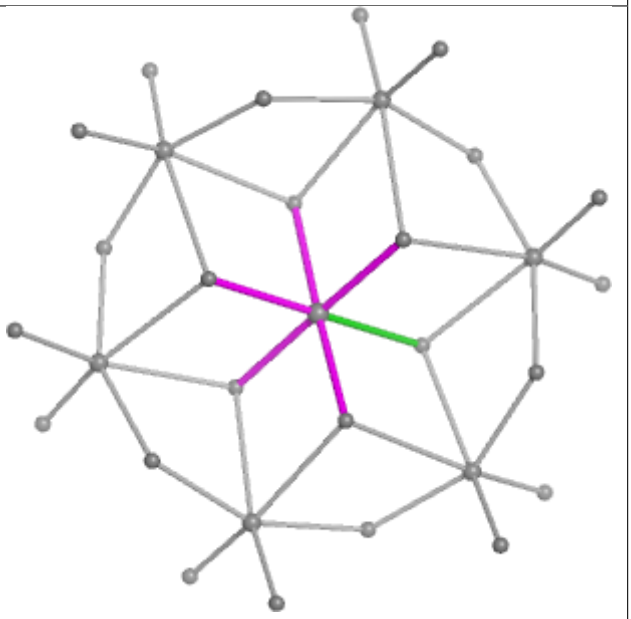


Rings

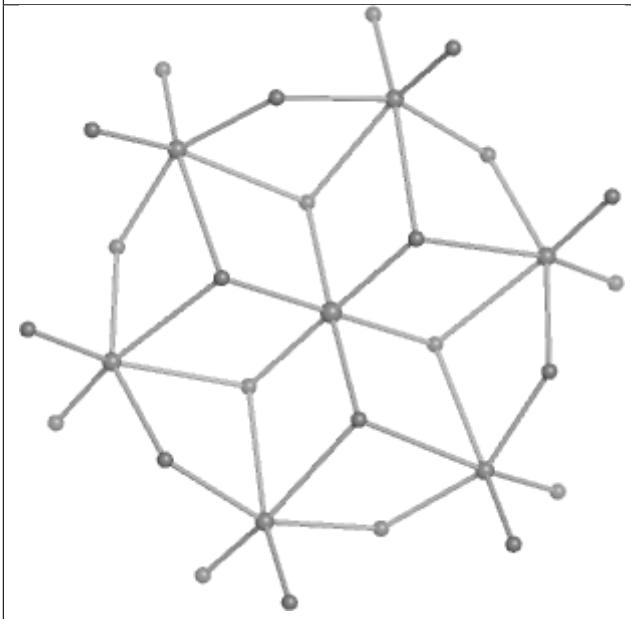
Ligand TEW A 403



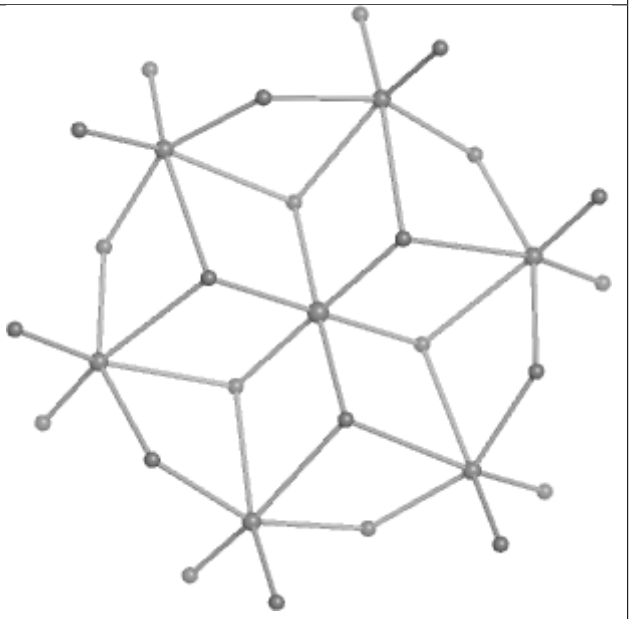
Bond lengths



Bond angles

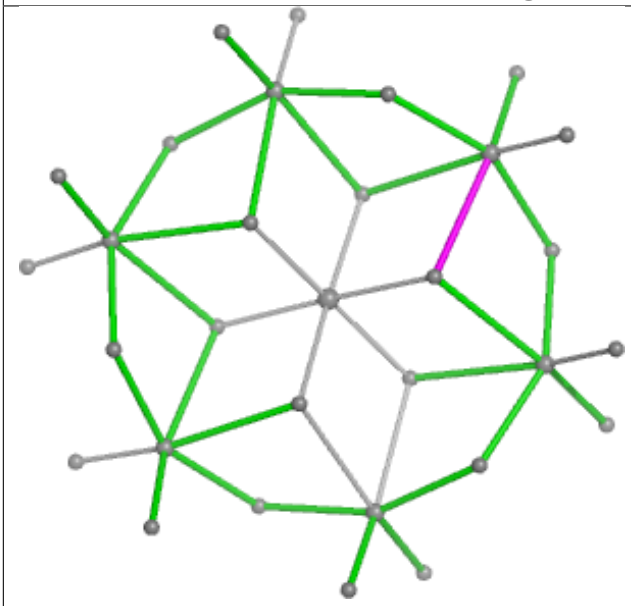


Torsions

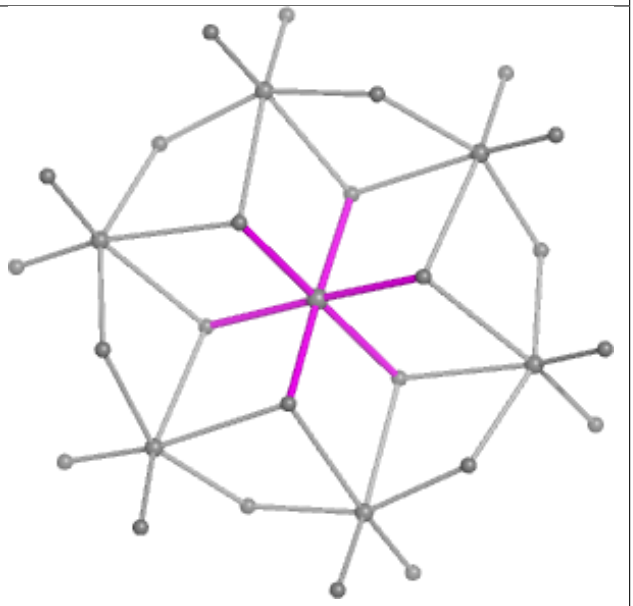


Rings

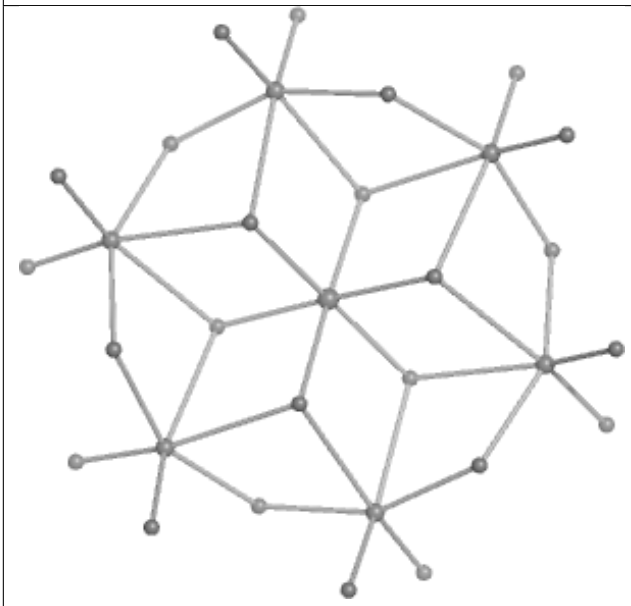
Ligand TEW E 403



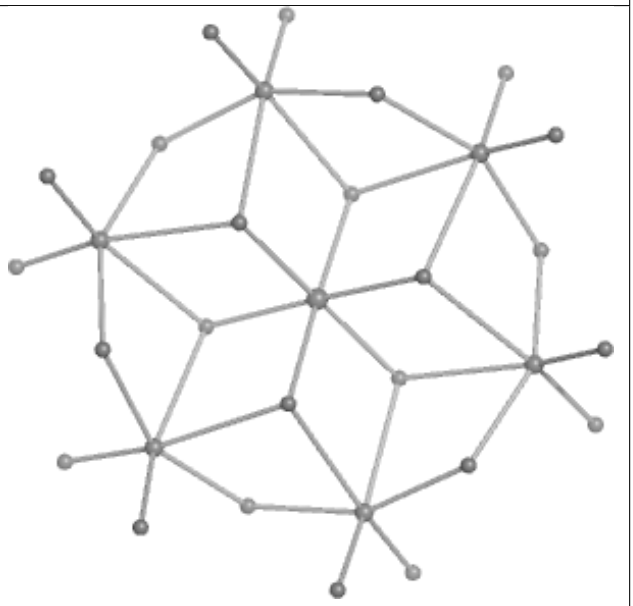
Bond lengths



Bond angles

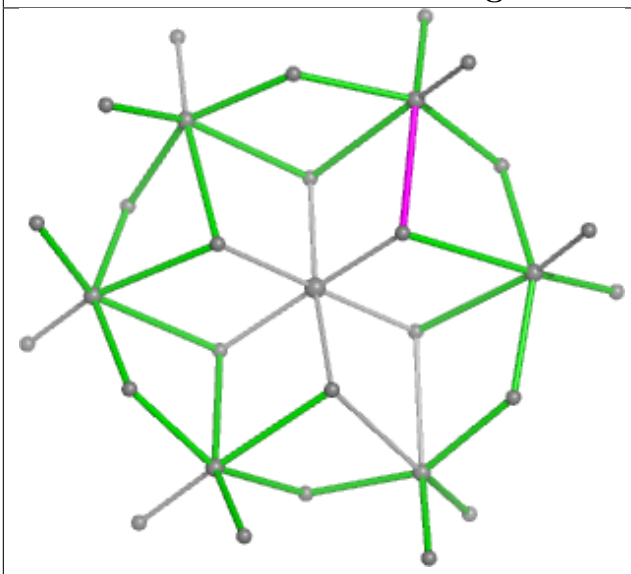


Torsions

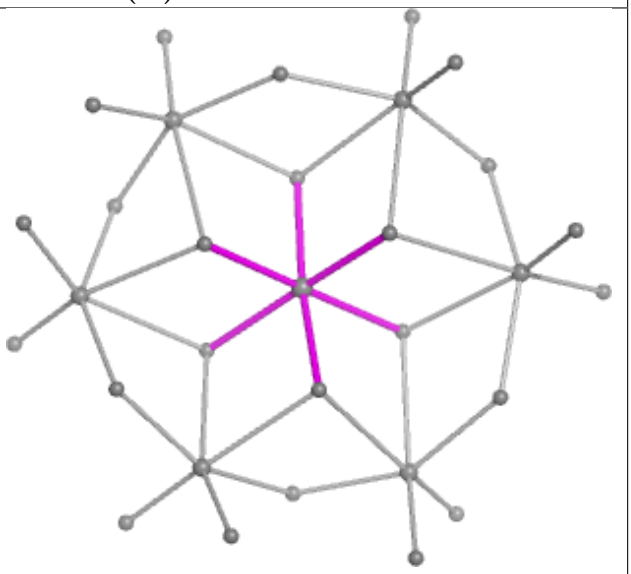


Rings

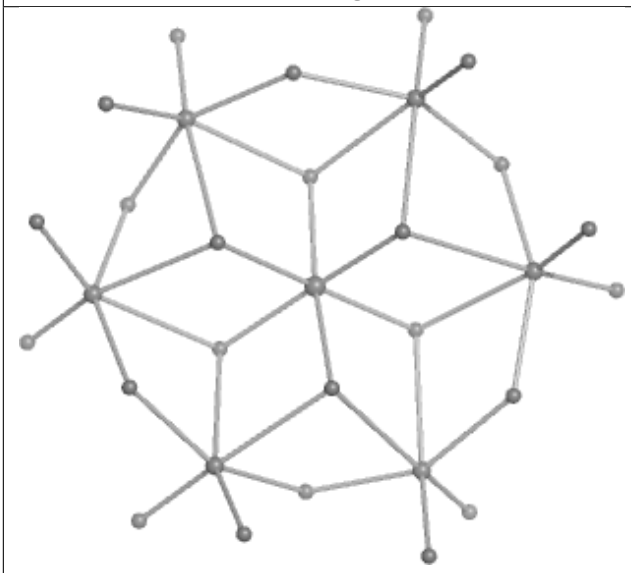
Ligand TEW A 401 (B)



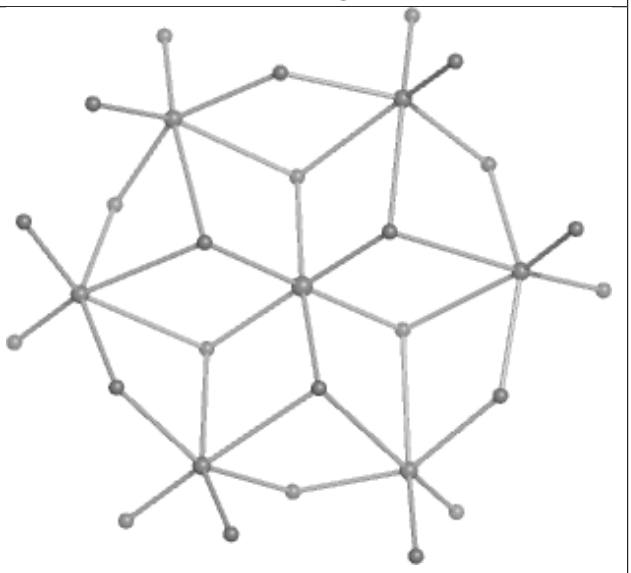
Bond lengths



Bond angles

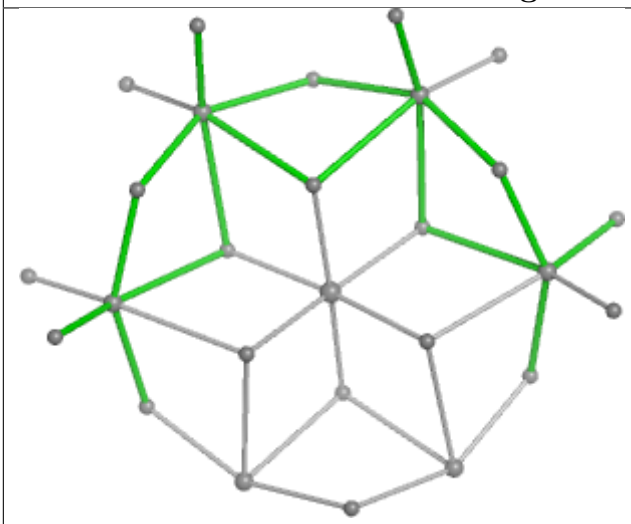


Torsions

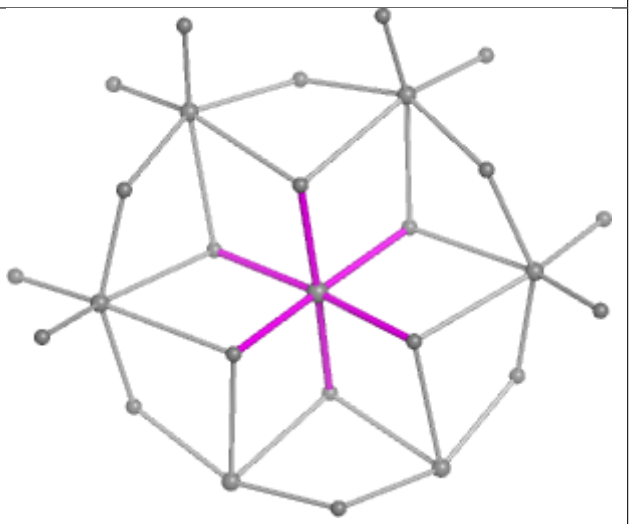


Rings

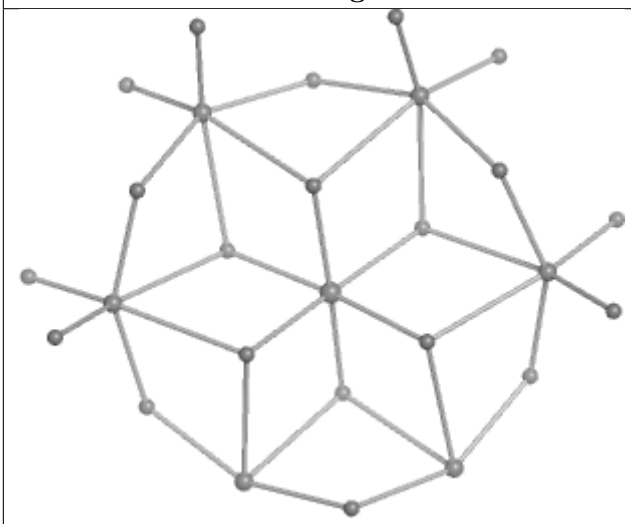
Ligand TEW E 401



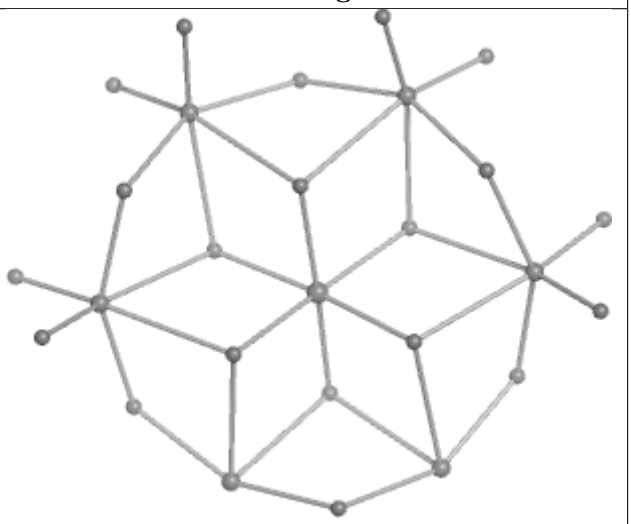
Bond lengths



Bond angles

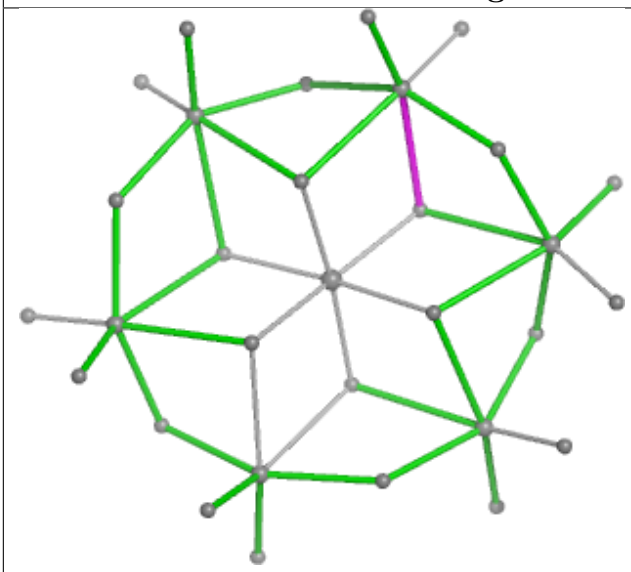


Torsions

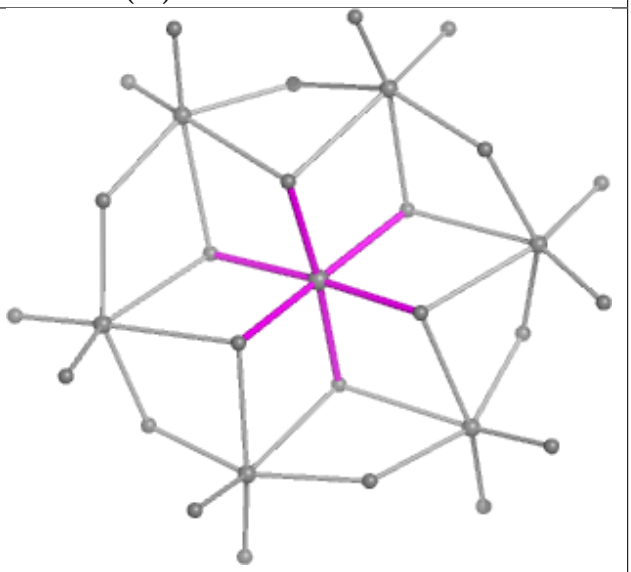


Rings

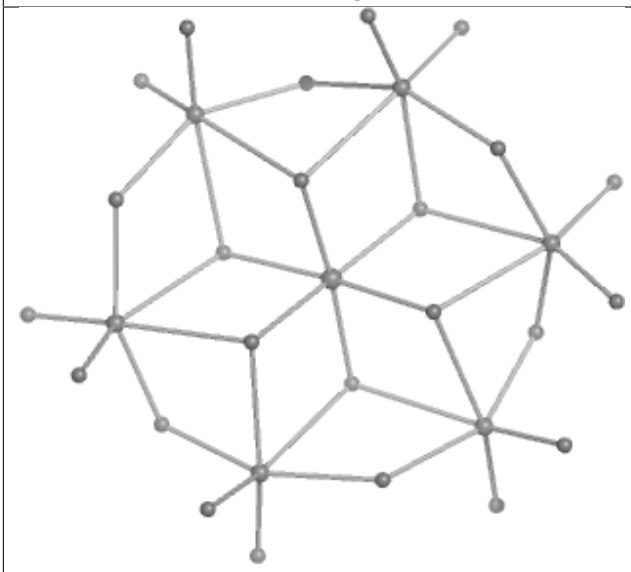
Ligand TEW E 402 (B)



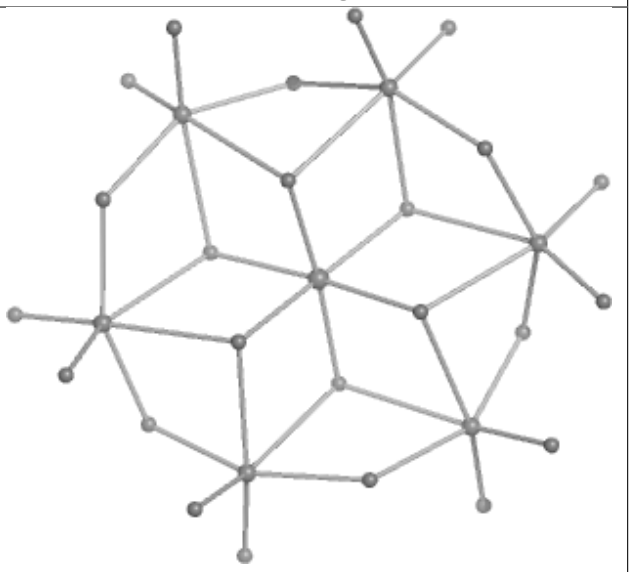
Bond lengths



Bond angles

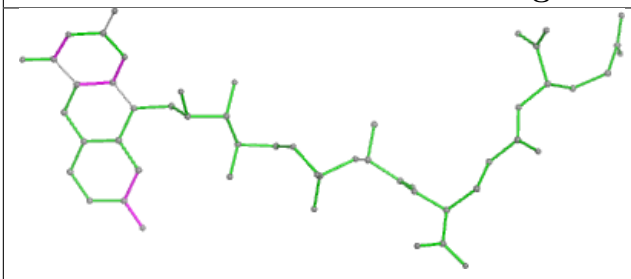


Torsions

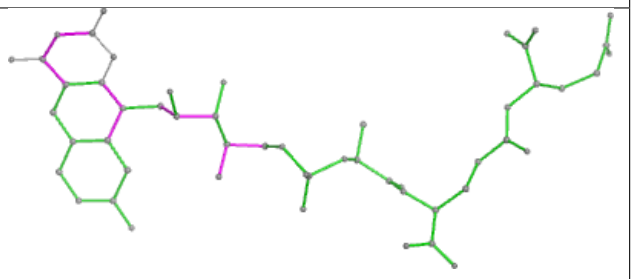


Rings

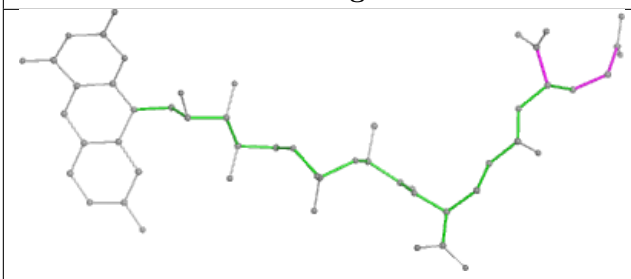
Ligand F42 B 402



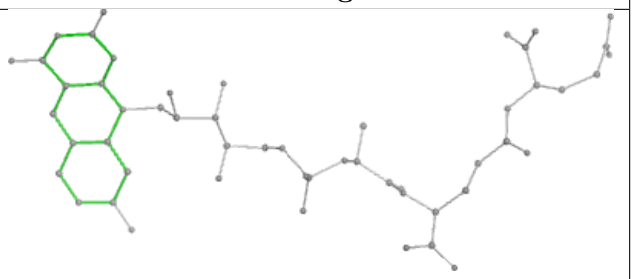
Bond lengths



Bond angles

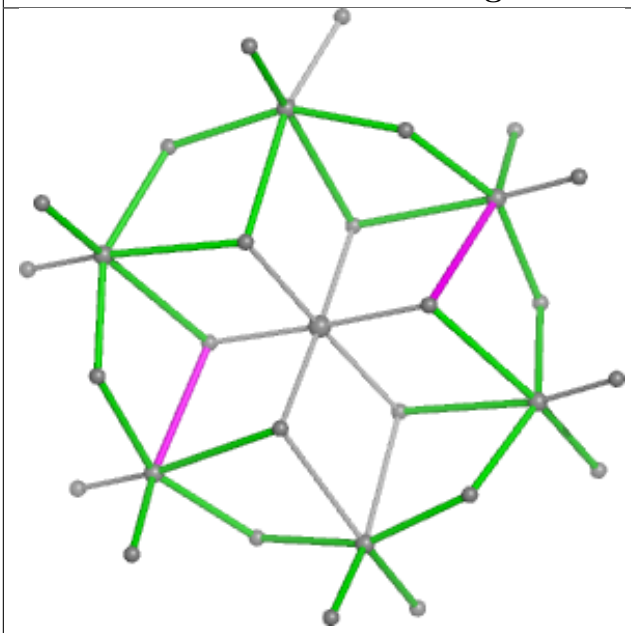


Torsions

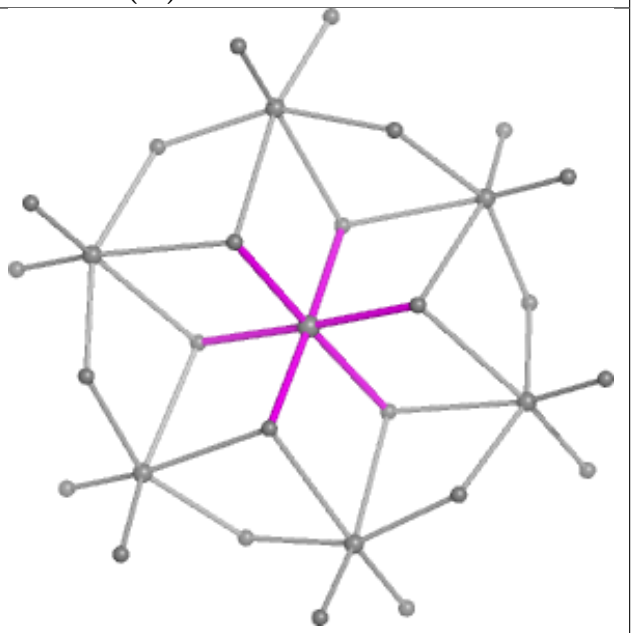


Rings

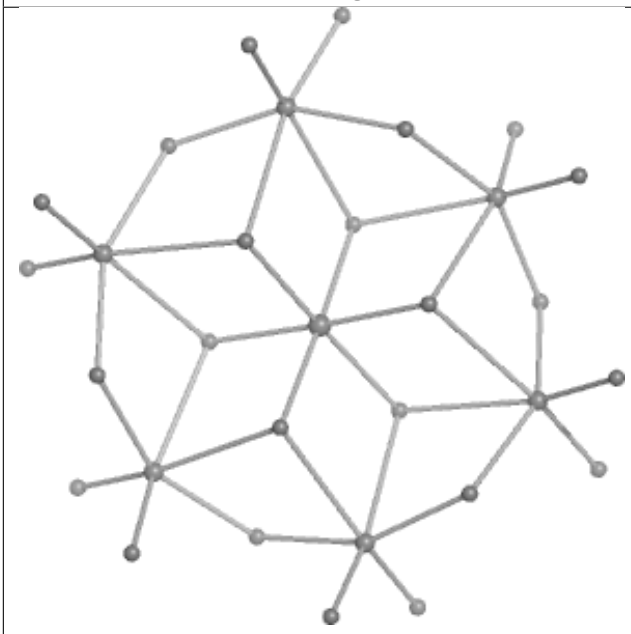
Ligand TEW A 401 (A)



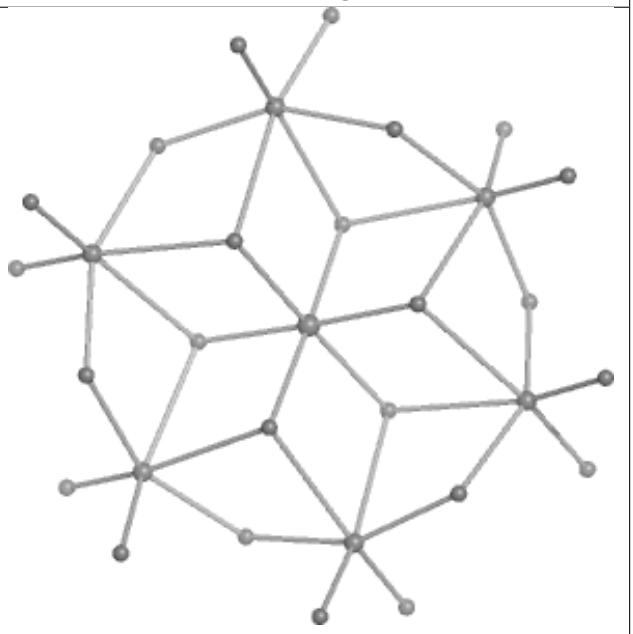
Bond lengths



Bond angles

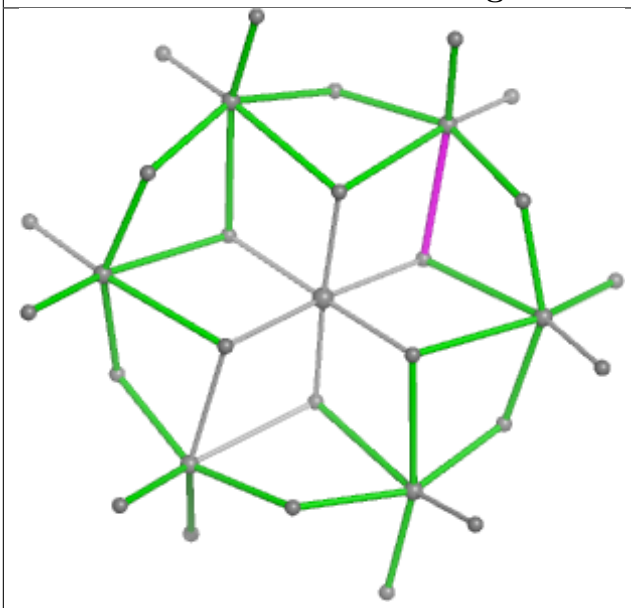


Torsions

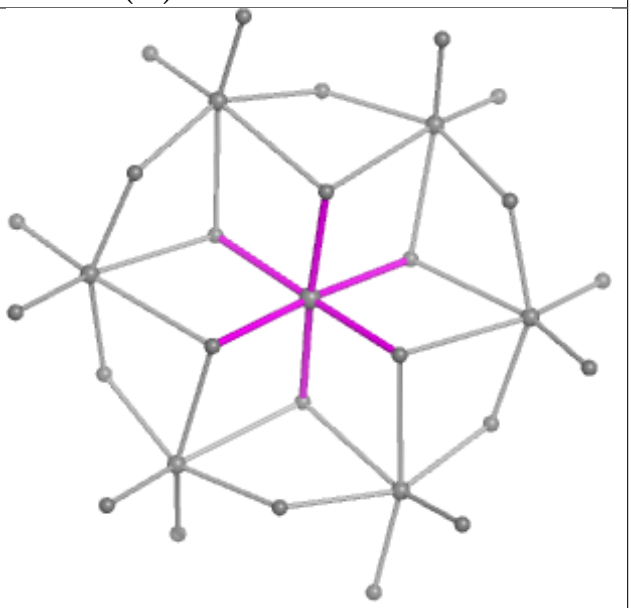


Rings

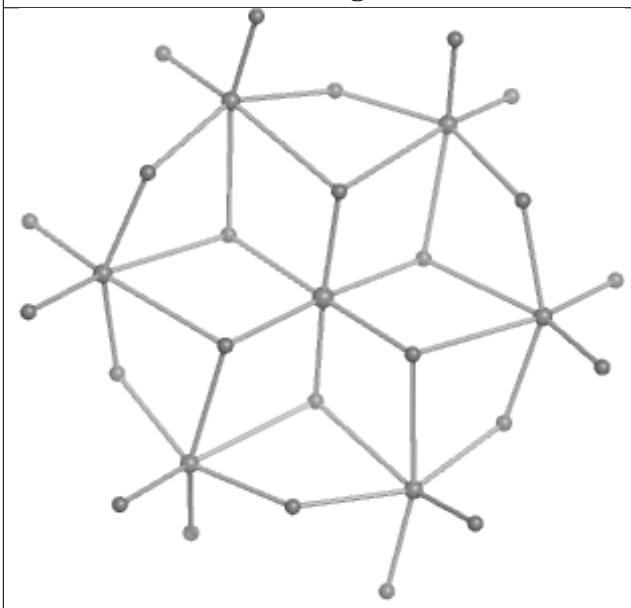
Ligand TEW E 402 (A)



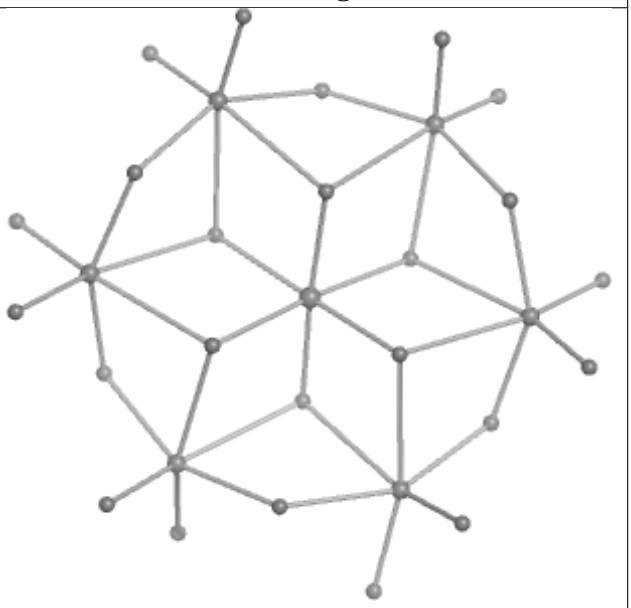
Bond lengths



Bond angles

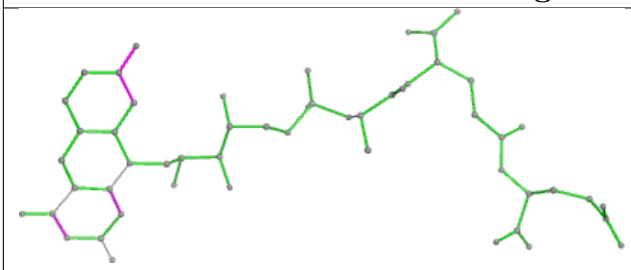


Torsions

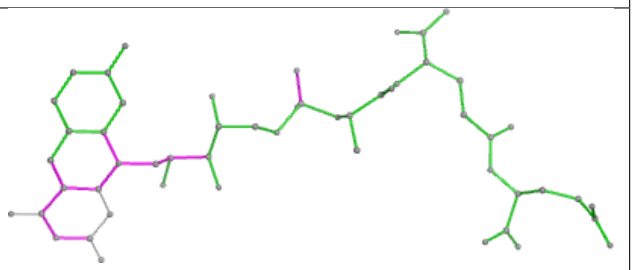


Rings

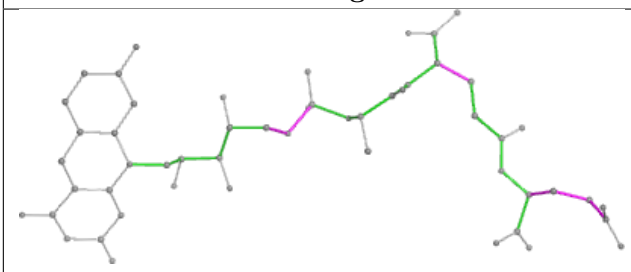
Ligand F42 F 402



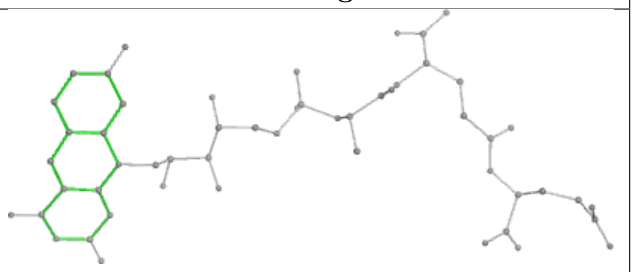
Bond lengths



Bond angles

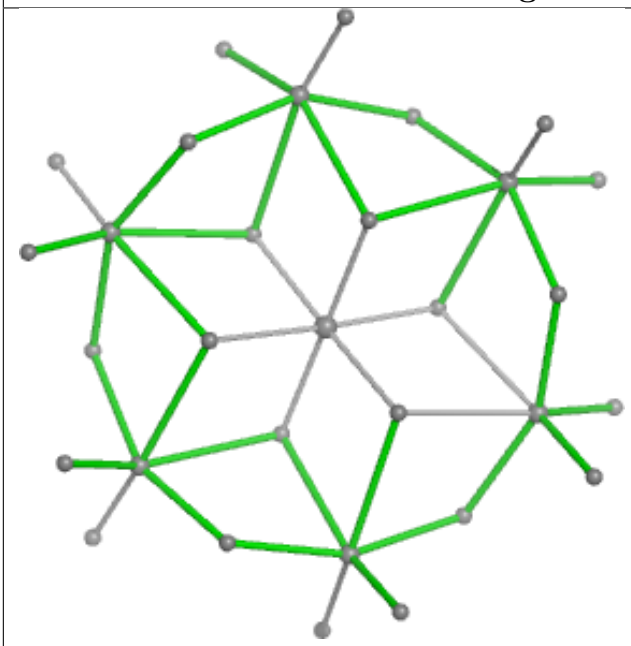


Torsions

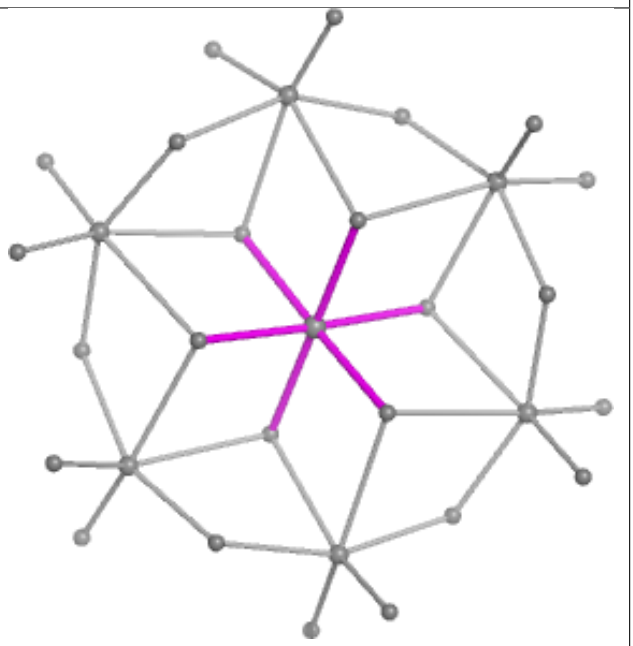


Rings

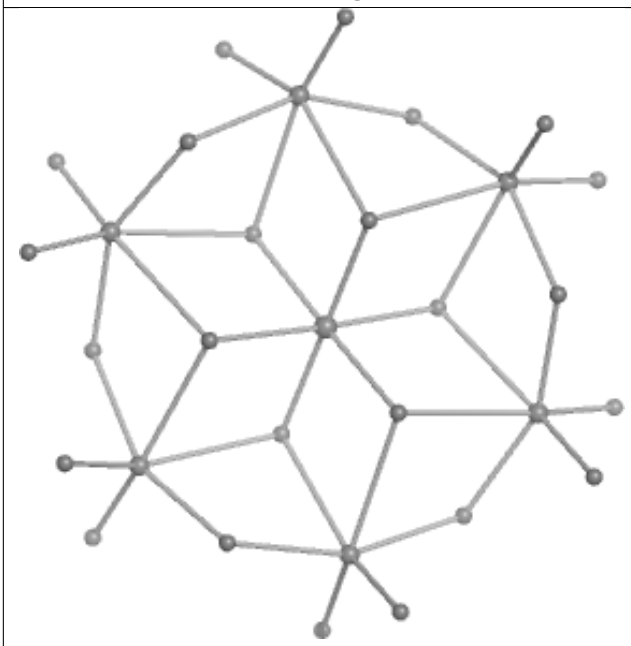
Ligand TEW B 403



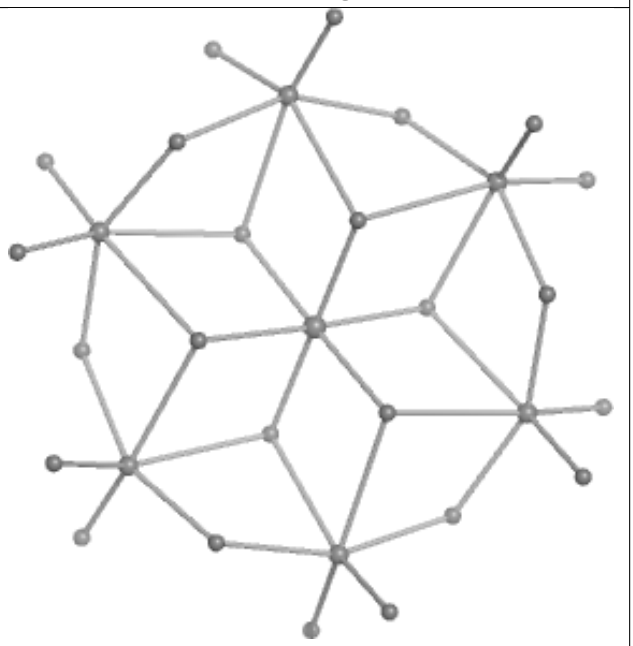
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	319/332 (96%)	-0.10	0	100	100	8, 18, 35, 60	2 (0%)
1	B	319/332 (96%)	0.01	2 (0%)	85	88	9, 20, 43, 60	2 (0%)
1	E	319/332 (96%)	-0.02	2 (0%)	85	88	9, 18, 36, 50	1 (0%)
1	F	318/332 (95%)	0.10	1 (0%)	90	91	8, 20, 40, 63	2 (0%)
All	All	1275/1328 (96%)	-0.00	5 (0%)	89	90	8, 19, 38, 63	7 (0%)

All (5) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	60	ALA	3.9
1	F	360[A]	ARG	3.7
1	B	203	ALA	2.8
1	E	306	GLU	2.2
1	E	298	ARG	2.2

6.2 Non-standard residues in protein, DNA, RNA chains

There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates

There are no oligosaccharides in this entry.

6.4 Ligands

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum,

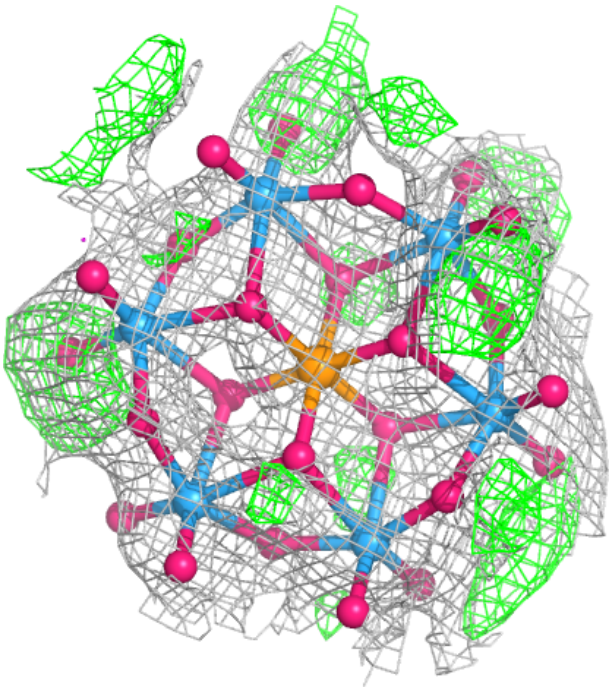
median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

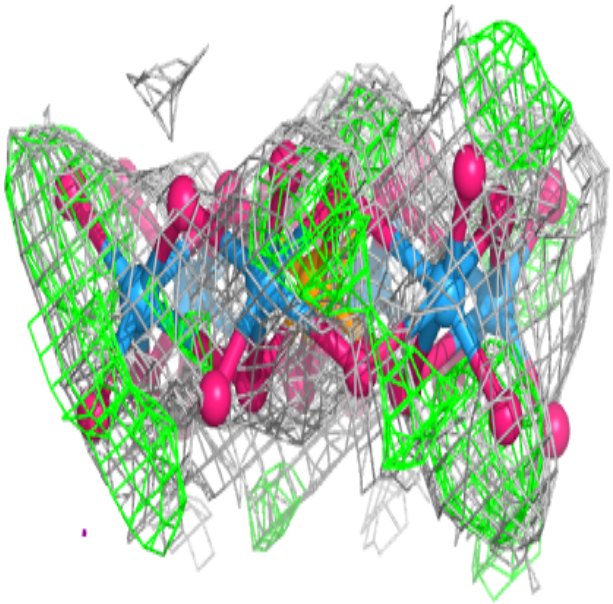
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	TEW	A	403	31/31	0.69	0.26	49,62,69,71	31
2	TEW	E	403	31/31	0.79	0.22	58,70,74,78	31
4	MPD	B	401	8/8	0.81	0.16	28,31,34,36	0
3	IMD	E	404	5/5	0.83	0.12	47,48,48,50	0
3	IMD	A	404	5/5	0.84	0.12	46,47,48,49	0
4	MPD	F	401	8/8	0.88	0.12	29,33,36,38	0
2	TEW	E	401	27/31	0.89	0.13	35,39,42,43	27
5	F42	B	402	53/53	0.90	0.11	19,25,63,71	0
5	F42	F	402	53/53	0.90	0.10	17,25,58,65	0
2	TEW	A	401[B]	31/31	0.98	0.08	30,32,37,43	31
2	TEW	E	402[A]	31/31	0.98	0.08	23,31,44,46	31
2	TEW	E	402[B]	31/31	0.98	0.08	25,32,35,41	31
2	TEW	A	402	31/31	0.98	0.07	26,38,50,57	7
2	TEW	A	401[A]	31/31	0.98	0.08	19,29,43,47	31
2	TEW	B	403	31/31	0.99	0.07	29,41,51,56	31

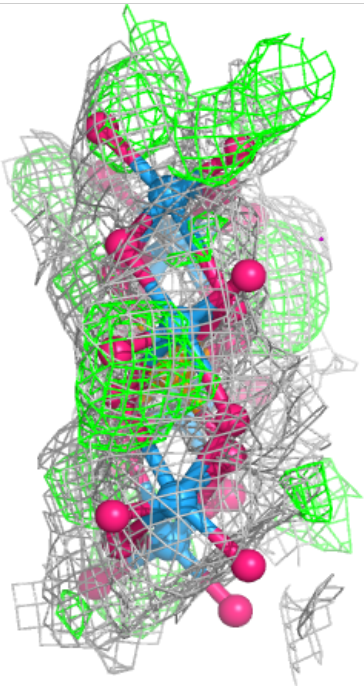
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around TEW A 403:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

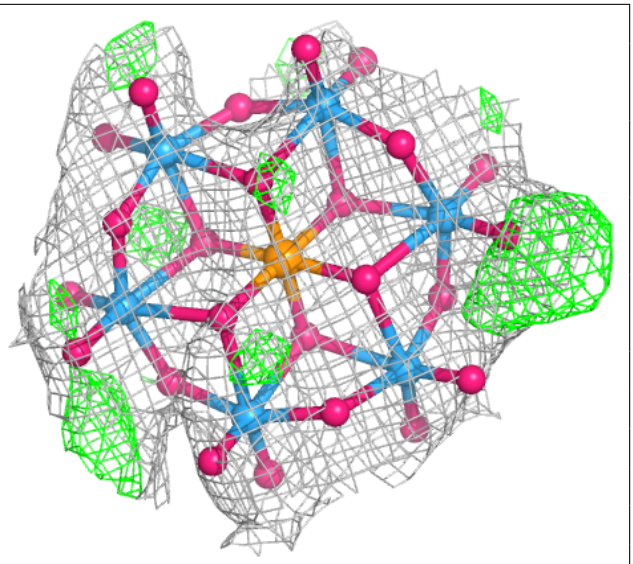


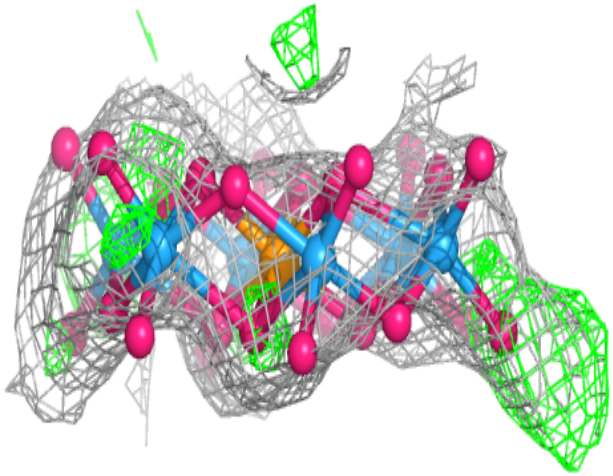


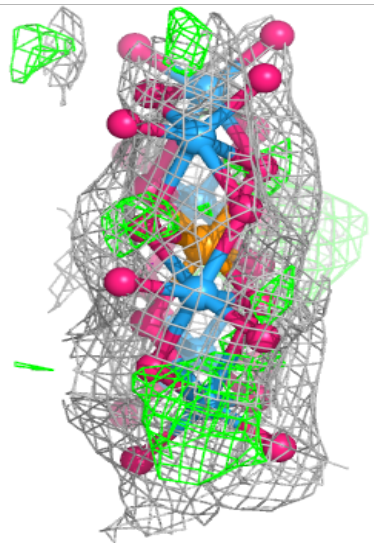


Electron density around TEW E 403:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

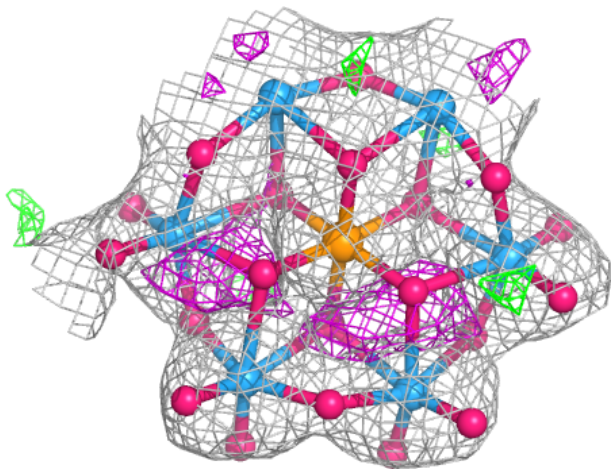


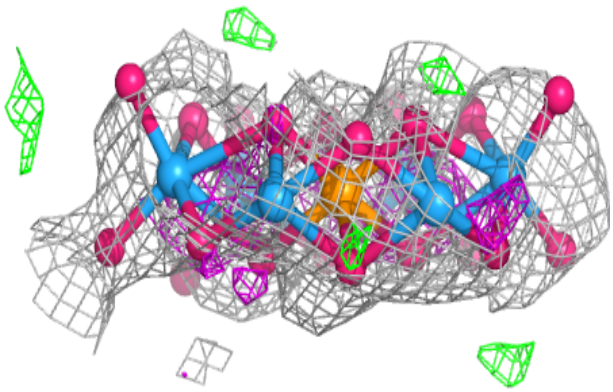


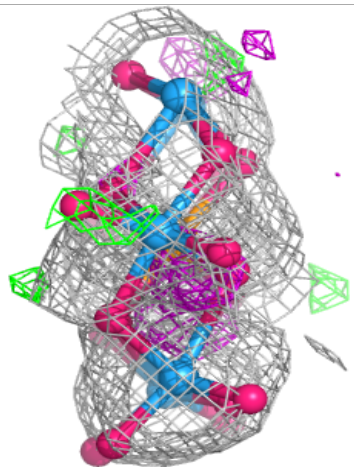


Electron density around TEW E 401:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

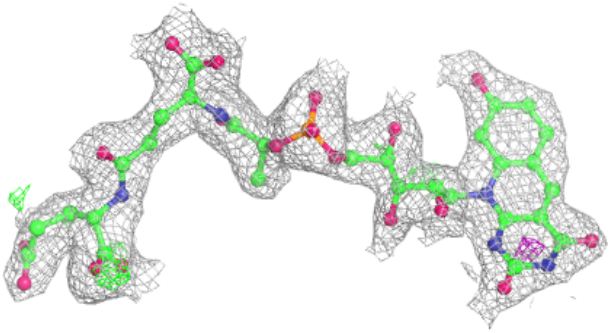


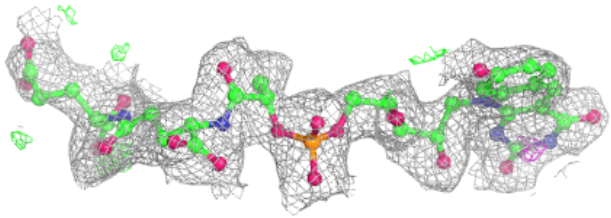


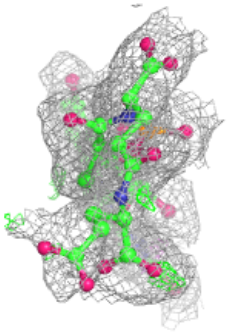


Electron density around F42 B 402:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

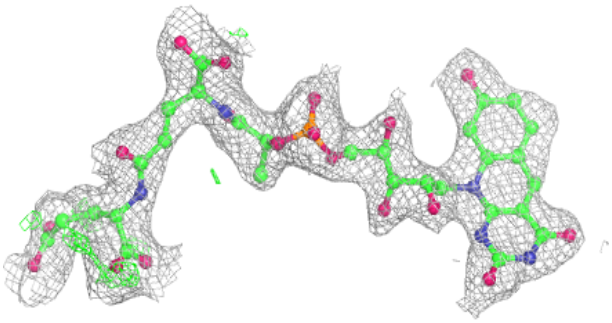


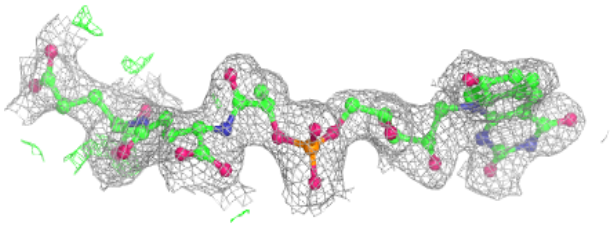


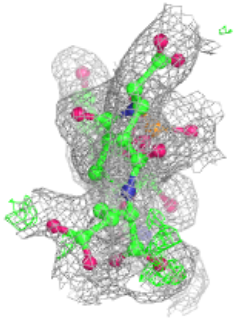


Electron density around F42 F 402:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

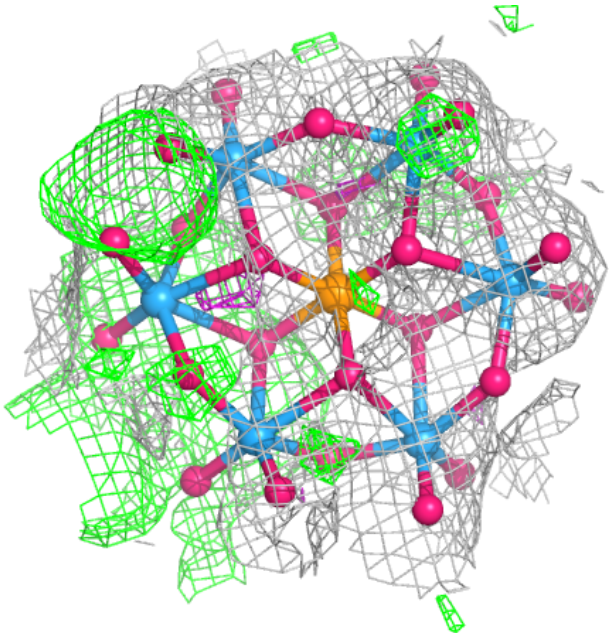


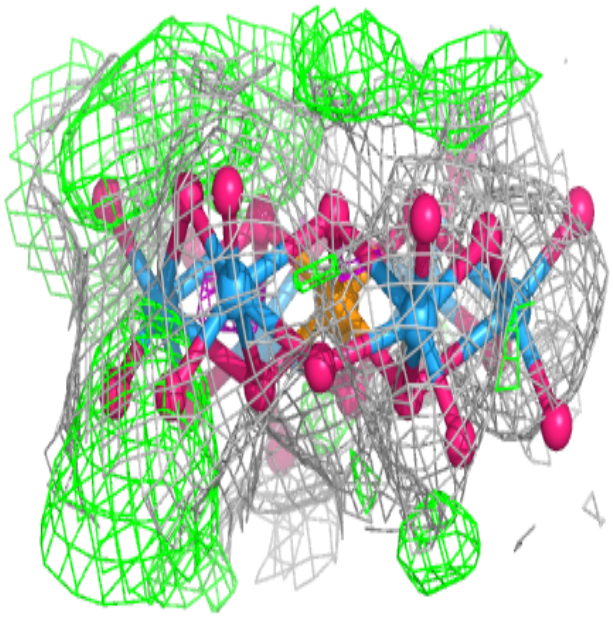


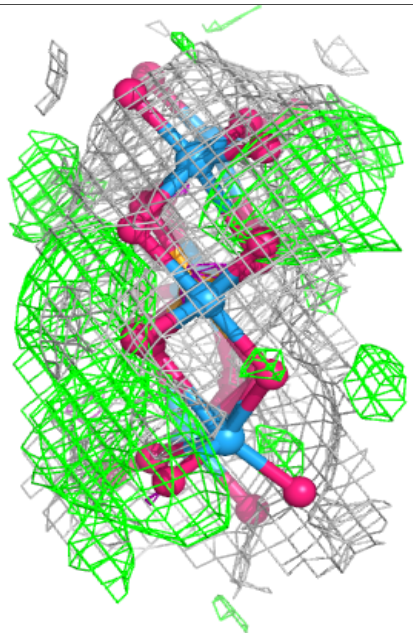


Electron density around TEW A 401 (B):

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

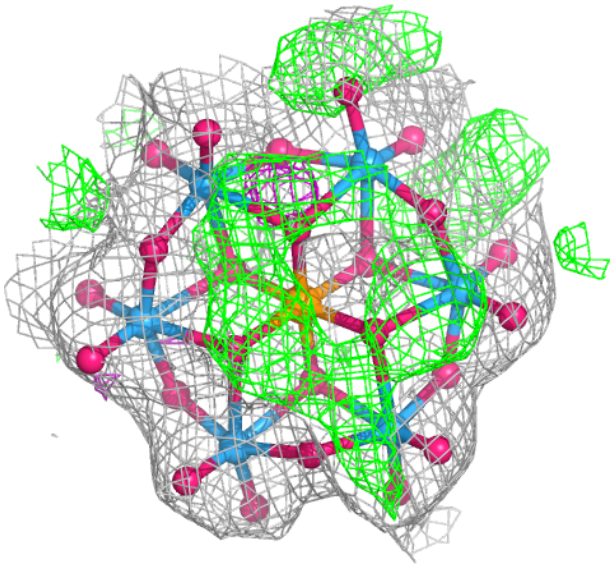


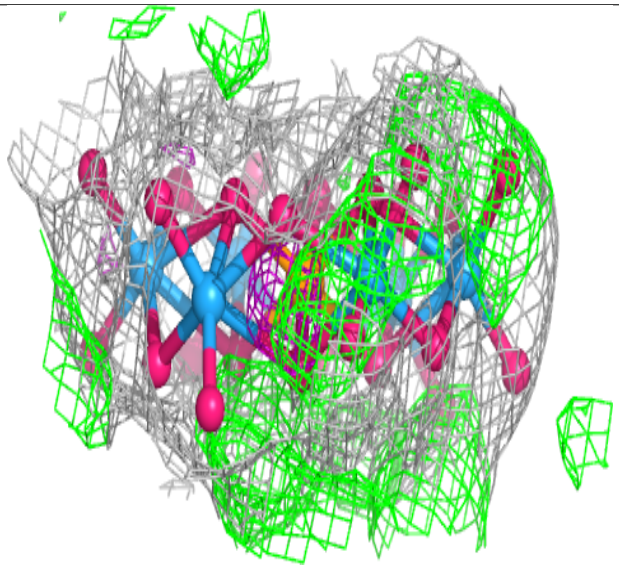


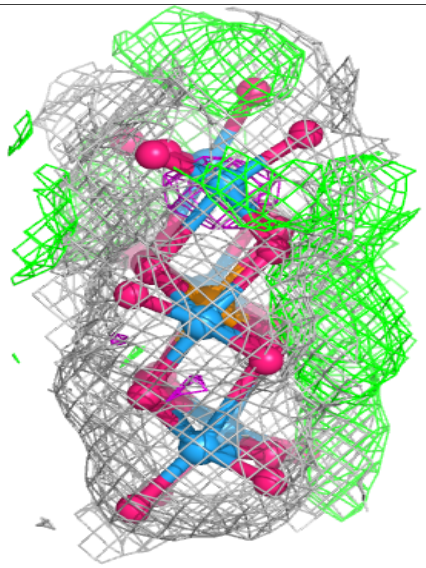


Electron density around TEW E 402 (A):

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

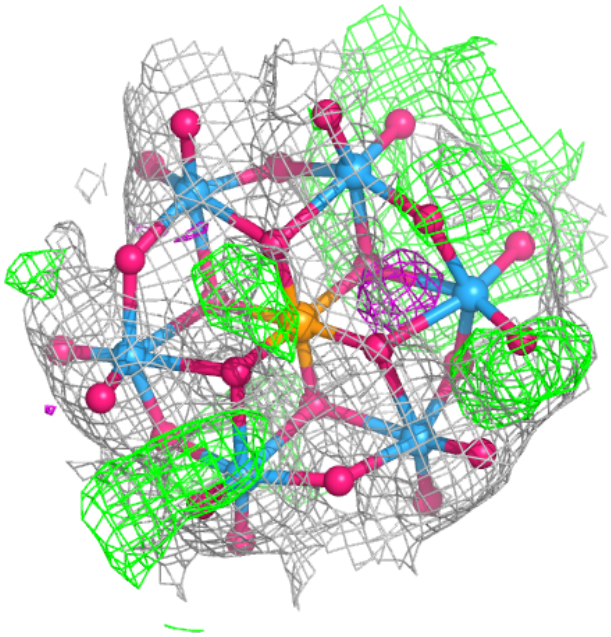


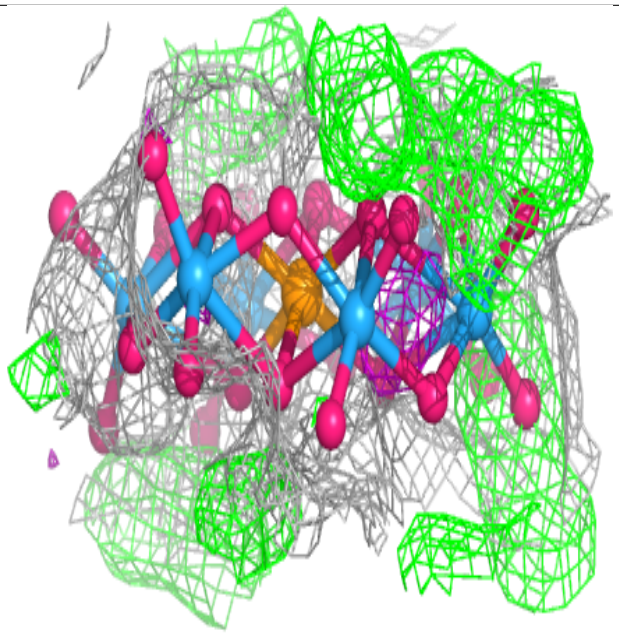


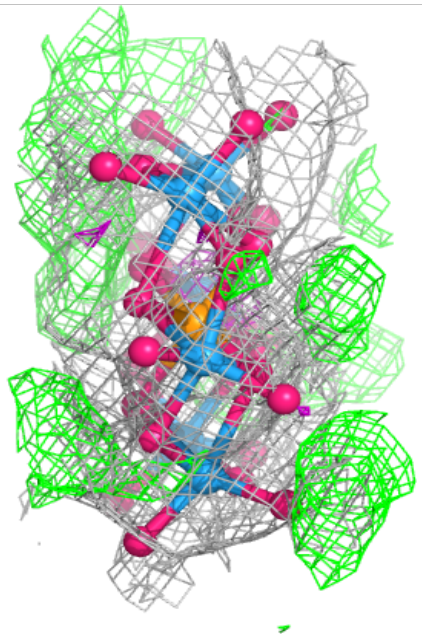


Electron density around TEW E 402 (B):

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

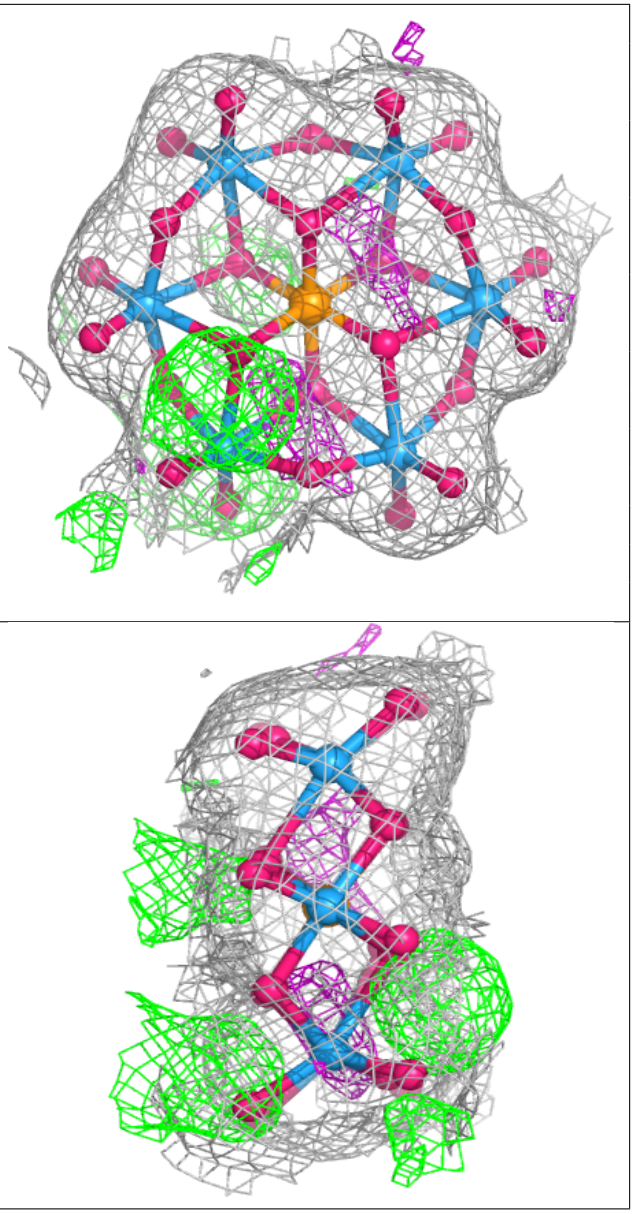


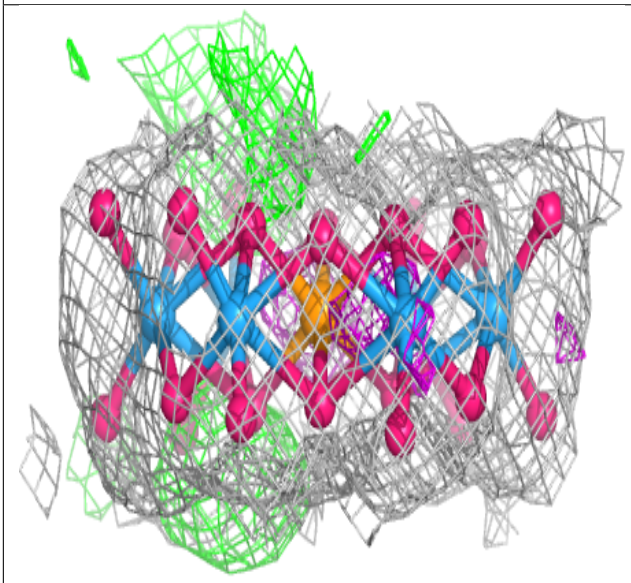




Electron density around TEW A 402:

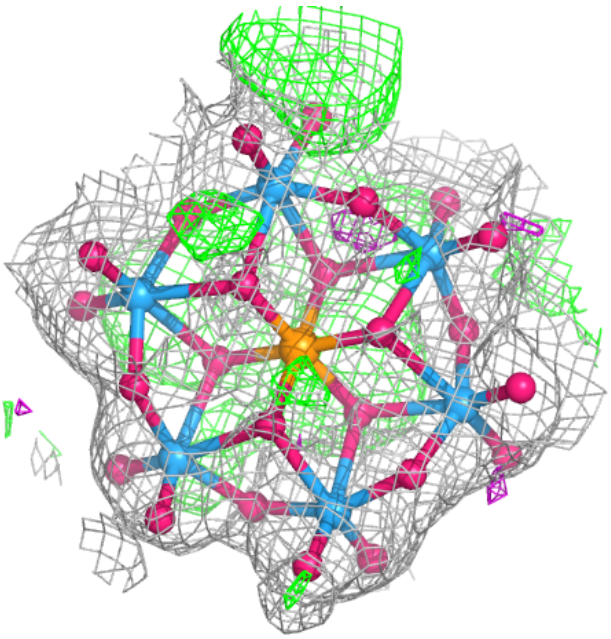
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

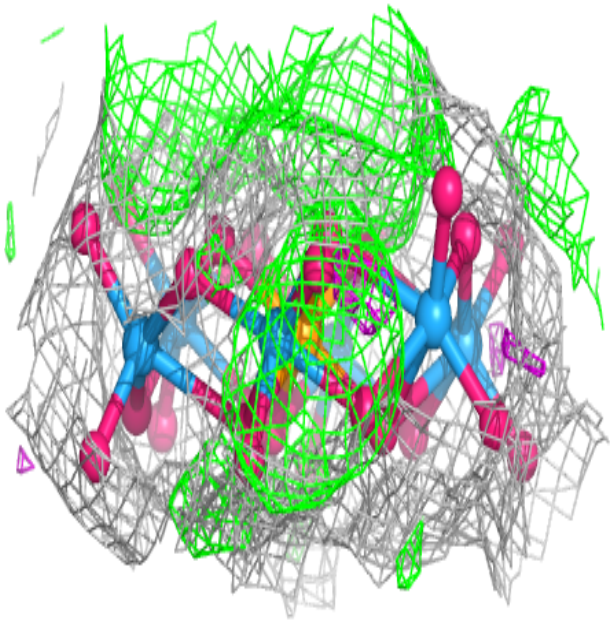


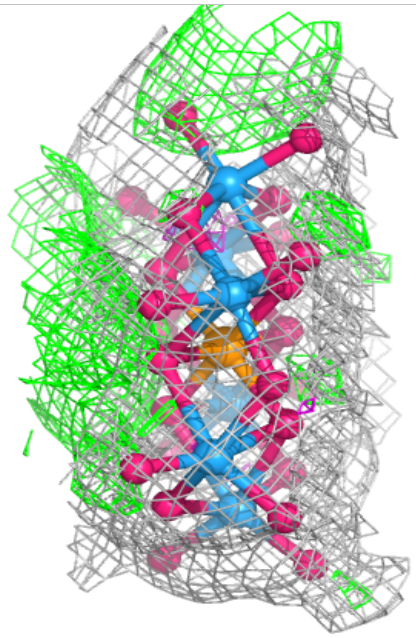


Electron density around TEW A 401 (A):

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

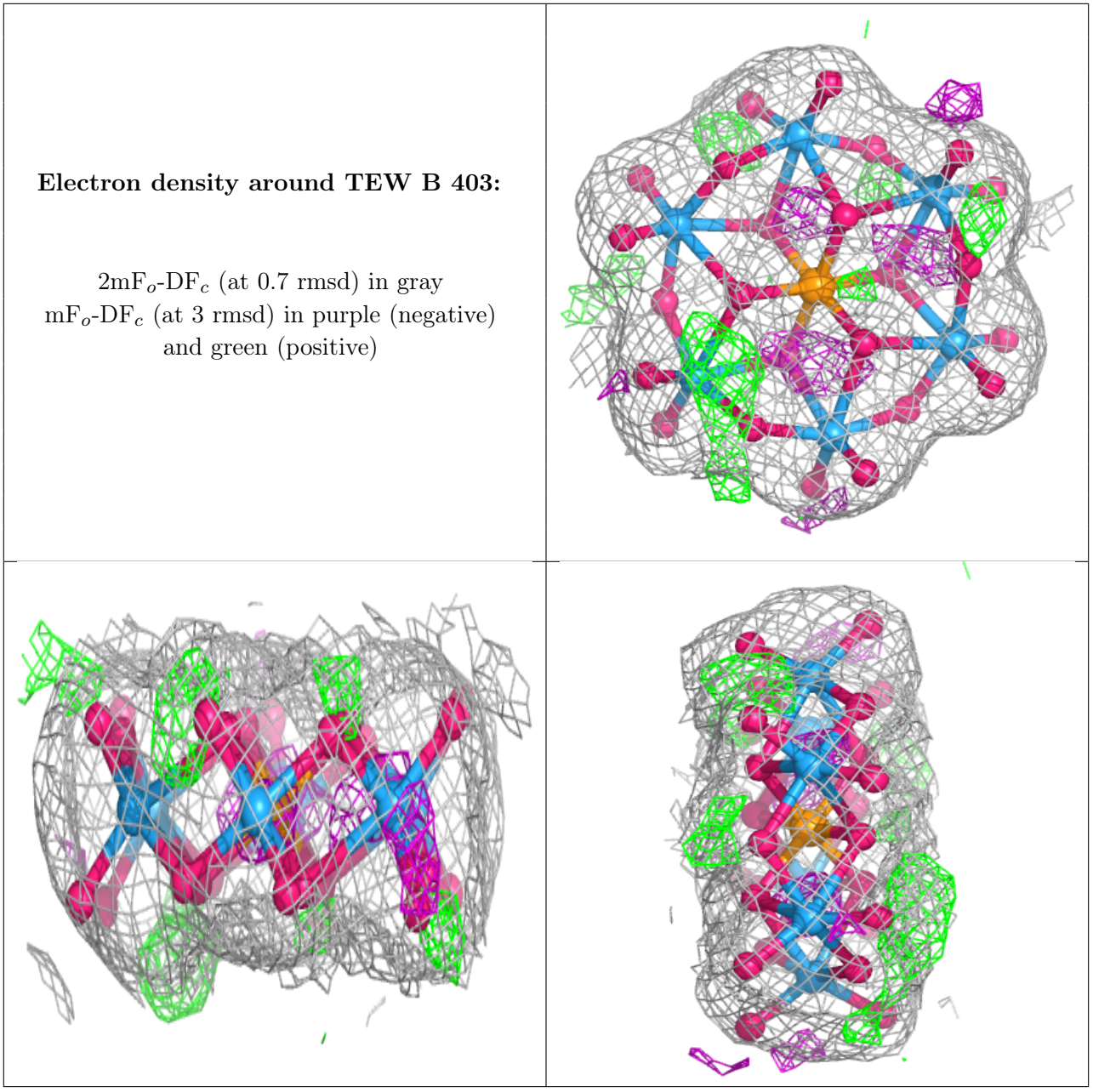






Electron density around TEW B 403:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.5 Other polymers

There are no such residues in this entry.