



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 26, 2026 – 03:24 am BST

PDB ID : 7B9A / pdb_00007b9a
Title : CooS-V with Xe-soaked
Authors : Jeoung, J.H.; Dobbek, H.
Deposited on : 2020-12-14
Resolution : 2.50 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 Phenix2.0
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.015 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.50

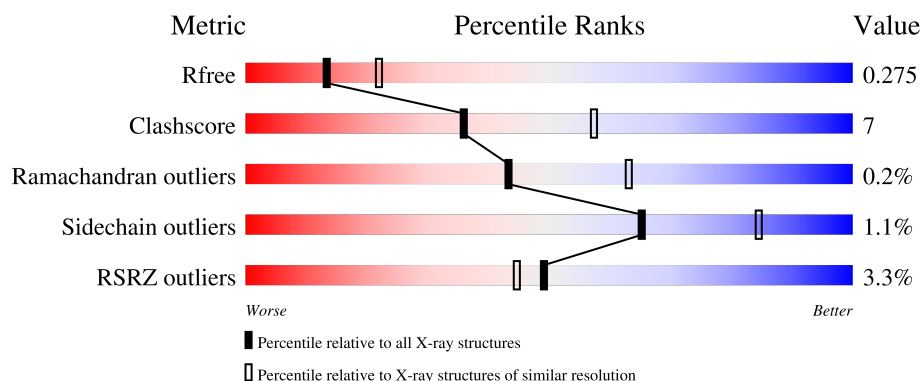
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.50 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}	180053	5829 (2.50-2.50)
Clashscore	190562	6492 (2.50-2.50)
Ramachandran outliers	187476	6378 (2.50-2.50)
Sidechain outliers	187428	6380 (2.50-2.50)
RSRZ outliers	180081	5833 (2.50-2.50)

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 $\leq 5\%$. 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	629	2% 84% 16%
1	B	629	3% 84% 16%
1	C	629	3% 83% 16% .
1	D	629	6% 81% 18% .

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard

residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	XE	A	703	-	-	X	-
3	XE	A	711	-	-	X	-
3	XE	A	713	-	-	X	-
3	XE	B	1005	-	-	X	-
3	XE	B	1009	-	-	X	-
3	XE	B	1010	-	-	X	-
3	XE	B	1014	-	-	X	-
3	XE	C	708	-	-	X	-
3	XE	C	709	-	-	X	X
3	XE	C	715	-	-	X	-
3	XE	D	1011	-	-	X	-
3	XE	D	1016	-	-	X	-
3	XE	D	1019	-	-	X	-
3	XE	D	1022	-	-	X	-
4	BR	B	1020	-	-	X	-
4	BR	B	1022	-	-	X	-
4	BR	C	720	-	-	X	-
5	TJN	C	723	-	-	X	-
5	TJN	D	1023	-	-	X	-

2 Entry composition [i](#)

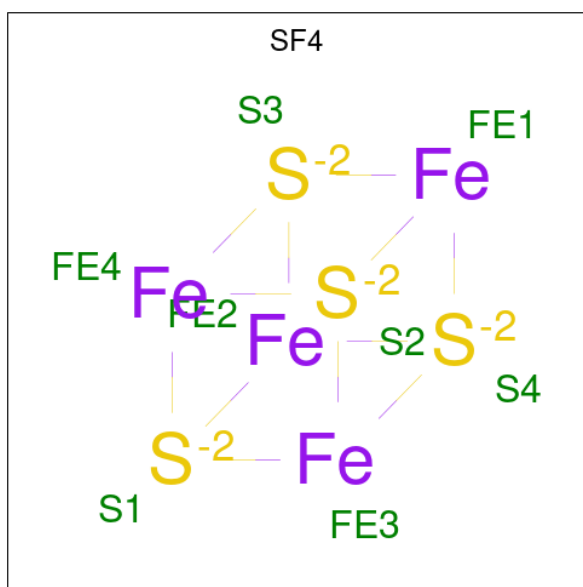
There are 7 unique types of molecules in this entry. The entry contains 19287 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Carbon monoxide dehydrogenase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	629	Total	C	N	O	S	0	0	0
			4784	3041	814	898	31			
1	B	628	Total	C	N	O	S	0	0	0
			4776	3036	813	897	30			
1	C	629	Total	C	N	O	S	0	0	0
			4784	3041	814	898	31			
1	D	629	Total	C	N	O	S	0	0	0
			4784	3041	814	898	31			

- Molecule 2 is IRON/SULFUR CLUSTER (CCD ID: SF4) (formula: Fe₄S₄) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	Fe	S	0	0
			8	4	4		
2	B	1	Total	Fe	S	0	0
			8	4	4		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	C	1	Total	Fe	S	0	0
			8	4	4		
2	D	1	Total	Fe	S	0	0
			8	4	4		

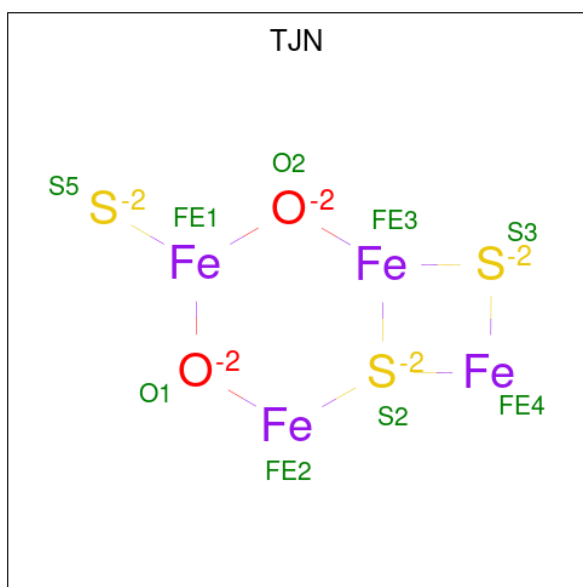
- Molecule 3 is XENON (CCD ID: XE) (formula: Xe) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	18	Total	Xe	0	0
			18	18		
3	B	14	Total	Xe	0	0
			14	14		
3	C	14	Total	Xe	0	0
			14	14		
3	D	15	Total	Xe	0	0
			15	15		

- Molecule 4 is BROMIDE ION (CCD ID: BR) (formula: Br).

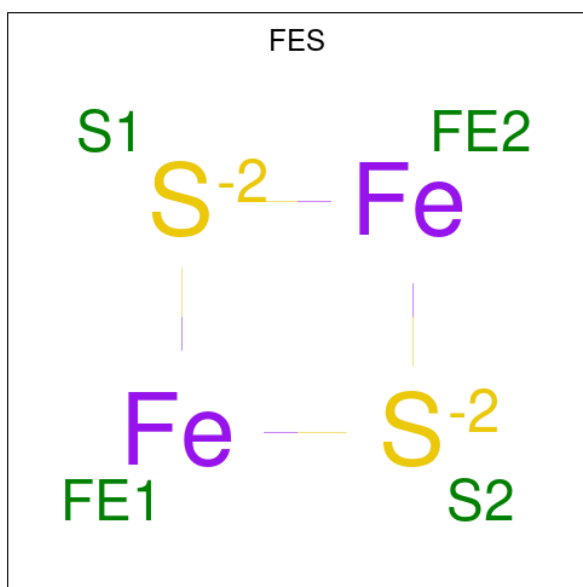
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	3	Total	Br	0	0
			3	3		
4	B	9	Total	Br	0	0
			9	9		
4	C	6	Total	Br	0	0
			6	6		
4	D	5	Total	Br	0	0
			5	5		

- Molecule 5 is hybrid cluster with four iron two oxygen and three sulfur (CCD ID: TJN) (formula: Fe₄O₂S₃) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total	Fe	O	S	0	0
			9	4	2	3		
5	C	1	Total	Fe	O	S	0	0
			9	4	2	3		
5	D	1	Total	Fe	O	S	0	0
			9	4	2	3		

- Molecule 6 is FE2/S2 (INORGANIC) CLUSTER (CCD ID: FES) (formula: Fe_2S_2).



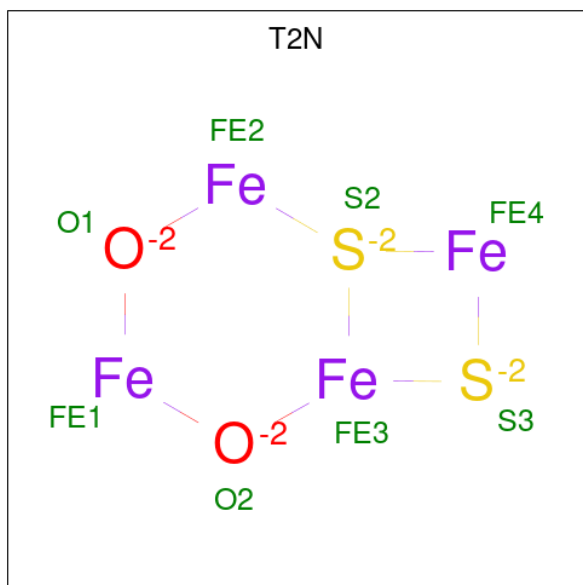
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	B	1	Total	Fe	S	0	0
			4	2	2		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	D	1	Total	Fe	S	0	0
			4	2	2		

- Molecule 7 is 3,5-dioxa-7-thia-1-thionia-2 λ^2 ,4 λ^2 ,6 λ^3 ,8 λ^2 -tetraferrobicyclo[4.2.0]octane (CCD ID: T2N) (formula: Fe₄O₂S₂).

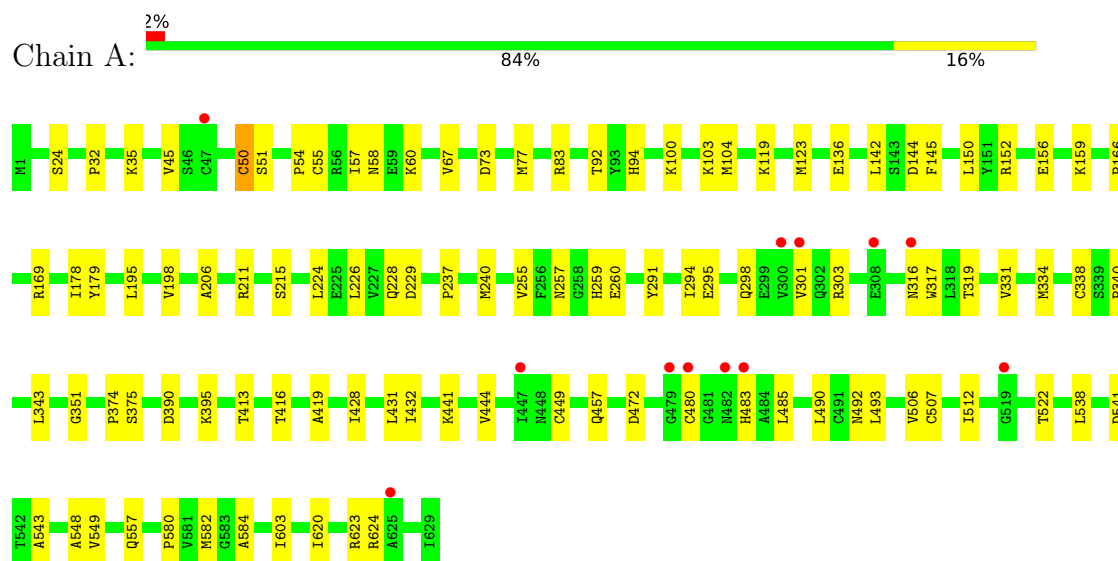


Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
7	B	1	Total	Fe	O	S	0	0
			8	4	2	2		

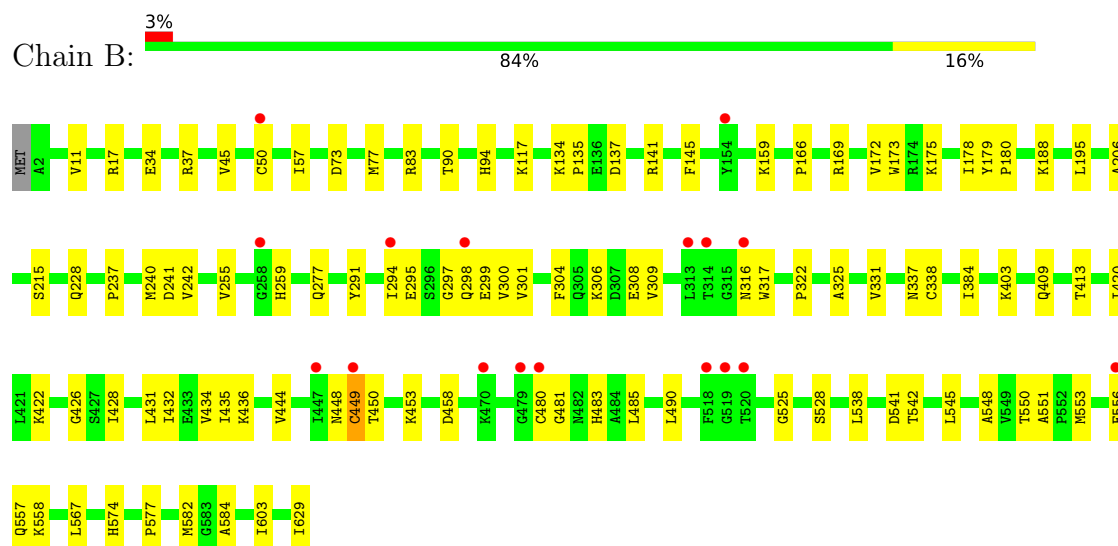
3 Residue-property plots

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.

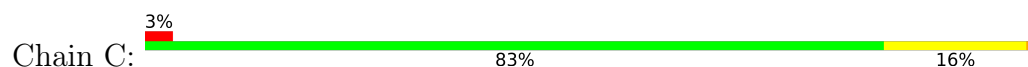
• Molecule 1: Carbon monoxide dehydrogenase

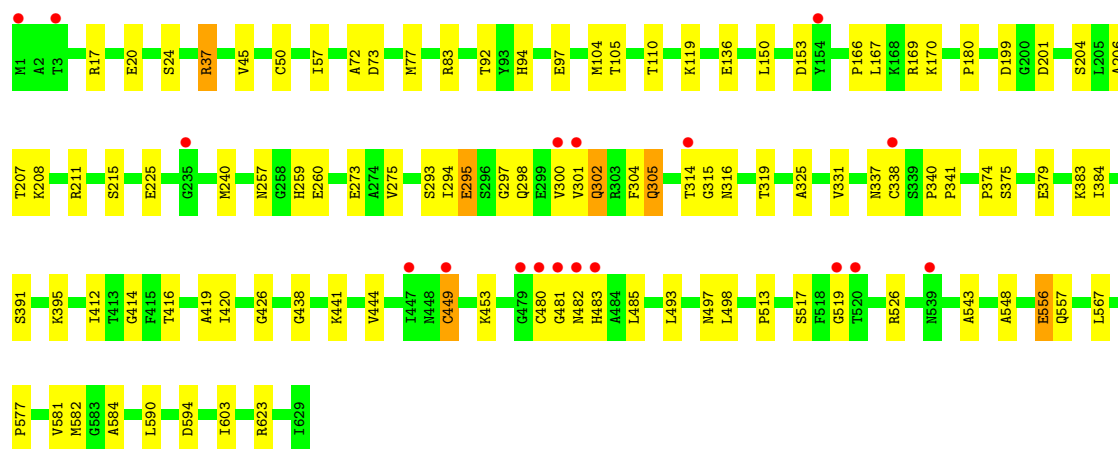


• Molecule 1: Carbon monoxide dehydrogenase

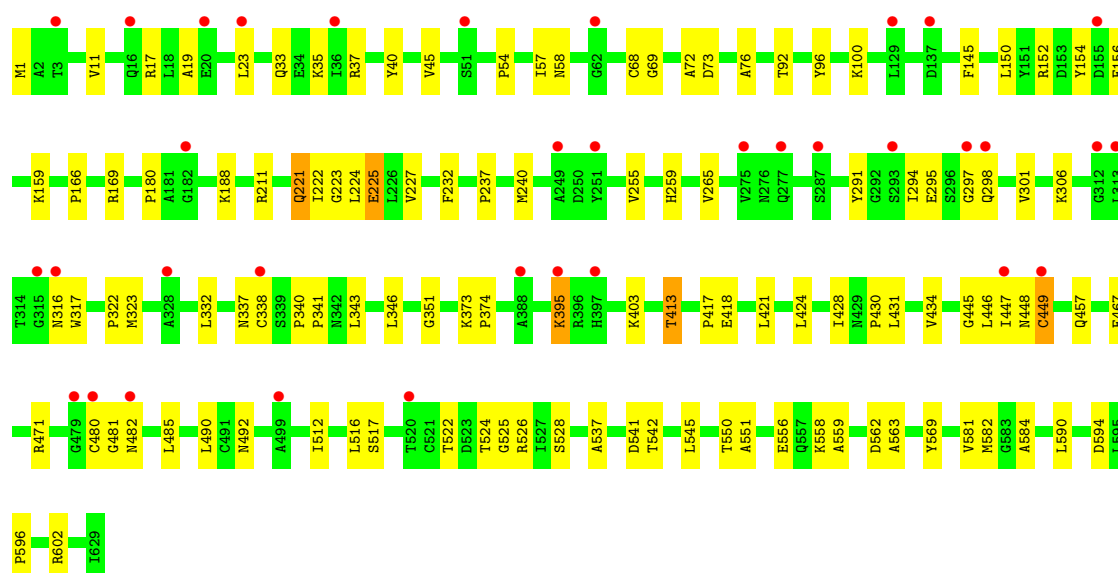
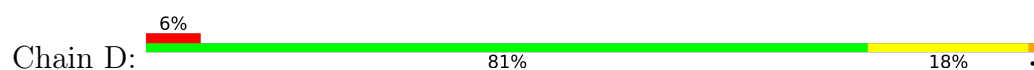


• Molecule 1: Carbon monoxide dehydrogenase





• Molecule 1: Carbon monoxide dehydrogenase



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	69.41Å 230.05Å 82.74Å 90.00° 101.52° 90.00°	Depositor
Resolution (Å)	20.00 – 2.50 20.00 – 2.50	Depositor EDS
% Data completeness (in resolution range)	95.1 (20.00-2.50) 95.0 (20.00-2.50)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	6.81 (at 2.50Å)	Xtriage
Refinement program	PHENIX 1.18.2_3874	Depositor
R, R_{free}	0.236 , 0.276 0.236 , 0.275	Depositor DCC
R_{free} test set	4154 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å ²)	23.5	Xtriage
Anisotropy	0.102	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 34.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.39$, $\langle L^2 \rangle = 0.21$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.84	EDS
Total number of atoms	19287	wwPDB-VP
Average B, all atoms (Å ²)	26.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.80% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: XE, TJN, T2N, SF4, FES, BR

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	0.11	0/4871	0.30	0/6610
1	B	0.11	0/4863	0.30	0/6600
1	C	0.18	0/4871	0.31	0/6610
1	D	0.32	5/4871 (0.1%)	0.36	1/6610 (0.0%)
All	All	0.20	5/19476 (0.0%)	0.32	1/26430 (0.0%)

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	222	ILE	C-O	-6.95	1.16	1.24
1	D	225	GLU	C-O	-6.32	1.16	1.24
1	D	227	VAL	C-O	-6.25	1.16	1.24
1	D	225	GLU	N-CA	-6.15	1.38	1.46
1	D	223	GLY	C-O	-5.37	1.17	1.24

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	221	GLN	N-CA-C	7.62	119.28	110.97

There are no chirality outliers.

There are no planarity outliers.

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	4784	0	4877	63	0
1	B	4776	0	4866	73	0
1	C	4784	0	4877	70	0
1	D	4784	0	4877	79	0
2	A	8	0	0	0	0
2	B	8	0	0	0	0
2	C	8	0	0	0	0
2	D	8	0	0	0	0
3	A	18	0	0	15	0
3	B	14	0	0	11	0
3	C	14	0	0	12	0
3	D	15	0	0	14	0
4	A	3	0	0	0	0
4	B	9	0	0	4	0
4	C	6	0	0	2	0
4	D	5	0	0	1	0
5	A	9	0	0	0	0
5	C	9	0	0	2	0
5	D	9	0	0	3	0
6	B	4	0	0	0	0
6	D	4	0	0	0	0
7	B	8	0	0	1	0
All	All	19287	0	19497	282	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 7.

All (282) 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:B:538:LEU:HD11	3:B:1009:XE:XE	2.58	0.81
3:D:1012:XE:XE	3:D:1022:XE:XE	3.57	0.79
1:B:277:GLN:HB2	4:B:1020:BR:BR	2.42	0.74
1:D:225:GLU:HG3	1:D:526:ARG:NH2	2.03	0.74
1:C:498:LEU:HD23	3:C:709:XE:XE	2.66	0.73
1:C:498:LEU:HA	3:C:709:XE:XE	2.67	0.72
1:C:273:GLU:HB3	4:C:720:BR:BR	2.45	0.71
3:C:706:XE:XE	3:C:710:XE:XE	3.65	0.70
1:C:24:SER:H	3:C:711:XE:XE	2.53	0.70
1:C:275:VAL:HG12	4:C:720:BR:BR	2.47	0.70
1:D:374:PRO:HD2	3:D:1019:XE:XE	2.73	0.67
1:D:337:ASN:ND2	1:D:556:GLU:OE2	2.28	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:169:ARG:NH2	1:A:541:ASP:OD2	2.28	0.67
1:C:374:PRO:HD2	3:C:713:XE:XE	2.72	0.66
1:B:444:VAL:HG22	1:B:548:ALA:HB3	1.78	0.66
1:C:45:VAL:HB	1:C:57:ILE:HB	1.79	0.65
1:C:449:CYS:SG	5:C:723:TJN:S5	2.93	0.65
1:D:1:MET:HE1	1:D:19:ALA:HB1	1.78	0.65
1:A:444:VAL:HG22	1:A:548:ALA:HB3	1.79	0.65
1:D:590:LEU:HA	1:D:594:ASP:HB2	1.79	0.65
1:D:421:LEU:HD21	3:D:1016:XE:XE	2.76	0.64
1:D:447:ILE:HD11	3:D:1011:XE:XE	2.76	0.64
1:A:316:ASN:OD1	1:A:457:GLN:NE2	2.31	0.64
1:D:154:TYR:HE1	1:D:211:ARG:HH22	1.44	0.63
1:C:37:ARG:NH1	1:D:54:PRO:O	2.32	0.62
1:D:166:PRO:HG2	1:D:169:ARG:HB2	1.80	0.62
1:A:543:ALA:O	1:A:623:ARG:NH1	2.33	0.62
1:D:542:THR:HA	1:D:545:LEU:HD12	1.81	0.62
1:A:374:PRO:HD2	3:A:711:XE:XE	2.77	0.62
1:A:32:PRO:HA	1:A:35:LYS:HD2	1.82	0.60
1:B:277:GLN:CB	4:B:1020:BR:BR	3.03	0.60
1:D:525:GLY:O	1:D:528:SER:HB3	2.02	0.60
1:B:298:GLN:HB2	1:B:483:HIS:CE1	2.36	0.60
1:A:45:VAL:HB	1:A:57:ILE:HB	1.83	0.60
1:B:11:VAL:HG13	1:B:322:PRO:HG3	1.83	0.60
1:C:426:GLY:HA2	3:C:714:XE:XE	2.80	0.60
1:C:582:MET:HE1	3:C:708:XE:XE	2.80	0.59
1:D:445:GLY:HA3	3:D:1022:XE:XE	2.81	0.59
1:D:551:ALA:HB2	3:D:1011:XE:XE	2.81	0.59
1:B:77:MET:HE2	1:B:206:ALA:HA	1.84	0.58
1:B:582:MET:HE1	3:B:1005:XE:XE	2.81	0.58
1:C:302:GLN:OE1	1:C:414:GLY:N	2.37	0.58
1:D:417:PRO:HB3	3:D:1016:XE:XE	2.82	0.58
1:A:92:THR:HG23	1:A:150:LEU:HD22	1.84	0.58
1:B:255:VAL:HG22	1:B:291:TYR:HB2	1.85	0.58
1:C:300:VAL:HG13	1:C:304:PHE:HD2	1.70	0.57
1:A:103:LYS:NZ	1:A:144:ASP:OD1	2.38	0.57
1:B:551:ALA:HB2	3:B:1007:XE:XE	2.83	0.57
1:D:485:LEU:HD22	1:D:490:LEU:HD22	1.86	0.57
1:B:166:PRO:HG2	1:B:169:ARG:HB2	1.87	0.57
1:C:259:HIS:NE2	1:C:295:GLU:OE2	2.37	0.57
1:D:316:ASN:OD1	1:D:457:GLN:NE2	2.36	0.57
1:B:316:ASN:HB2	1:B:480:CYS:SG	2.45	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:431:LEU:HD13	3:D:1014:XE:XE	2.83	0.56
1:A:492:ASN:HB2	3:A:713:XE:XE	2.84	0.56
1:A:100:LYS:HG2	3:A:721:XE:XE	2.84	0.56
1:D:351:GLY:HA2	1:D:395:LYS:HG3	1.87	0.56
1:B:556:GLU:OE1	1:B:557:GLN:N	2.39	0.56
1:D:582:MET:HE1	3:D:1009:XE:XE	2.83	0.56
1:C:556:GLU:H	1:C:556:GLU:CD	2.13	0.56
1:D:23:LEU:HD13	1:D:346:LEU:HG	1.87	0.56
1:B:603:ILE:HG21	3:B:1005:XE:XE	2.84	0.55
1:C:225:GLU:HG3	1:C:526:ARG:NH2	2.22	0.55
1:A:237:PRO:HA	1:A:413:THR:O	2.05	0.55
1:B:582:MET:HB3	4:B:1022:BR:BR	2.61	0.55
1:D:446:LEU:HD13	1:D:550:THR:HG23	1.88	0.55
1:B:297:GLY:O	1:B:301:VAL:HG13	2.06	0.55
1:A:351:GLY:HA2	1:A:395:LYS:HG3	1.88	0.55
1:A:104:MET:HE2	3:A:711:XE:XE	2.85	0.55
1:B:237:PRO:HA	1:B:413:THR:O	2.07	0.55
1:B:241:ASP:OD2	1:B:306:LYS:NZ	2.30	0.55
1:B:180:PRO:HB2	1:B:215:SER:HB3	1.89	0.54
1:C:17:ARG:NH1	1:C:325:ALA:O	2.38	0.54
1:A:119:LYS:HD3	1:A:226:LEU:HD22	1.90	0.54
1:C:482:ASN:ND2	1:C:517:SER:OG	2.39	0.54
1:D:447:ILE:HG23	3:D:1022:XE:XE	2.86	0.54
1:C:444:VAL:HG22	1:C:548:ALA:HB3	1.89	0.54
1:A:195:LEU:HD22	1:B:90:THR:HG21	1.89	0.54
1:C:302:GLN:HE21	1:C:519:GLY:HA2	1.71	0.54
1:D:100:LYS:HG2	3:D:1018:XE:XE	2.86	0.53
1:D:76:ALA:HB1	1:D:581:VAL:HG12	1.89	0.53
1:D:68:CYS:SG	1:D:69:GLY:N	2.81	0.53
1:D:340:PRO:HD2	1:D:343:LEU:HD11	1.89	0.53
1:A:485:LEU:HD22	1:A:490:LEU:HD12	1.91	0.53
1:C:77:MET:HE2	1:C:206:ALA:HA	1.90	0.53
1:D:152:ARG:NH1	1:D:156:GLU:O	2.42	0.53
1:D:424:LEU:HD22	1:D:430:PRO:HB2	1.90	0.53
1:A:224:LEU:HD11	1:A:522:THR:HG21	1.91	0.53
1:B:431:LEU:HD13	3:B:1010:XE:XE	2.86	0.53
1:B:431:LEU:HD21	3:B:1015:XE:XE	2.86	0.53
1:A:428:ILE:HD13	3:A:714:XE:XE	2.87	0.53
1:D:373:LYS:HE2	3:D:1019:XE:XE	2.86	0.53
1:A:152:ARG:NH1	1:A:156:GLU:O	2.42	0.52
1:A:255:VAL:HG22	1:A:291:TYR:HB2	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:543:ALA:O	1:C:623:ARG:NH1	2.39	0.52
1:A:24:SER:H	3:A:709:XE:XE	2.70	0.52
1:D:45:VAL:HB	1:D:57:ILE:HB	1.90	0.52
1:D:317:TRP:HB2	1:D:338:CYS:HB2	1.90	0.52
1:B:317:TRP:CD1	1:B:450:THR:HG22	2.45	0.52
1:B:542:THR:HA	1:B:545:LEU:HD12	1.91	0.52
1:B:242:VAL:HG23	1:B:409:GLN:HB3	1.93	0.51
1:D:73:ASP:HA	1:D:584:ALA:HB1	1.92	0.51
1:A:54:PRO:O	1:B:37:ARG:NH2	2.42	0.51
1:A:259:HIS:CE1	1:A:295:GLU:HG3	2.45	0.51
1:C:94:HIS:CD2	1:C:260:GLU:HG2	2.46	0.51
1:C:225:GLU:HG3	1:C:526:ARG:HH21	1.75	0.51
1:A:73:ASP:HA	1:A:584:ALA:HB1	1.92	0.51
1:A:77:MET:HE2	1:A:206:ALA:HA	1.92	0.51
1:A:603:ILE:HG21	3:A:703:XE:XE	2.88	0.51
1:A:416:THR:H	1:A:419:ALA:HB3	1.76	0.51
1:A:104:MET:HG3	3:A:711:XE:XE	2.88	0.51
1:B:422:LYS:HA	3:B:1014:XE:XE	2.89	0.51
1:C:438:GLY:O	1:C:441:LYS:NZ	2.43	0.51
1:C:493:LEU:H	3:C:715:XE:XE	2.71	0.51
1:C:92:THR:HG23	1:C:150:LEU:HD22	1.92	0.51
1:B:259:HIS:CE1	1:B:558:LYS:HE2	2.47	0.50
1:B:331:VAL:HG11	1:B:384:ILE:HG23	1.93	0.50
1:B:485:LEU:HD22	1:B:490:LEU:HD12	1.93	0.50
1:C:302:GLN:HE21	1:C:519:GLY:CA	2.25	0.50
1:B:73:ASP:HA	1:B:584:ALA:HB1	1.94	0.50
1:A:480:CYS:HA	1:A:483:HIS:CD2	2.47	0.50
1:A:506:VAL:HG13	3:A:715:XE:XE	2.90	0.50
1:B:298:GLN:HB2	1:B:483:HIS:HE1	1.76	0.50
1:B:426:GLY:HA2	3:B:1014:XE:XE	2.90	0.50
1:B:557:GLN:HE21	3:B:1026:XE:XE	2.73	0.50
1:D:180:PRO:HA	1:D:211:ARG:HD3	1.94	0.50
1:D:448:ASN:HB3	1:D:481:GLY:HA3	1.94	0.49
1:B:83:ARG:C	1:B:557:GLN:HG2	2.37	0.49
1:D:255:VAL:HG22	1:D:291:TYR:HB2	1.94	0.49
1:C:590:LEU:HA	1:C:594:ASP:HB2	1.94	0.49
1:D:40:TYR:OH	1:D:58:ASN:ND2	2.41	0.49
1:A:298:GLN:HA	1:A:301:VAL:HG22	1.95	0.48
1:A:50:CYS:SG	1:A:51:SER:N	2.86	0.48
1:A:198:VAL:HG22	1:B:337:ASN:HB3	1.95	0.48
1:C:153:ASP:OD2	1:D:96:TYR:OH	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:412:ILE:HD12	1:C:513:PRO:HG3	1.96	0.48
1:A:317:TRP:HB2	1:A:338:CYS:HB2	1.95	0.48
1:C:449:CYS:HA	1:C:480:CYS:HB2	1.94	0.48
1:B:420:ILE:HG23	3:B:1010:XE:XE	2.90	0.48
1:C:104:MET:HE2	1:C:375:SER:HB3	1.95	0.48
1:B:525:GLY:O	1:B:528:SER:OG	2.21	0.48
1:C:207:THR:O	1:C:211:ARG:HG2	2.14	0.48
1:A:316:ASN:O	1:A:319:THR:OG1	2.27	0.48
1:C:83:ARG:C	1:C:557:GLN:HG2	2.38	0.48
1:C:136:GLU:OE1	1:C:136:GLU:N	2.43	0.48
1:D:431:LEU:HA	1:D:434:VAL:HG22	1.96	0.48
1:A:229:ASP:OD1	1:A:303:ARG:NH2	2.44	0.48
1:A:58:ASN:OD1	1:A:60:LYS:HG2	2.14	0.47
1:C:57:ILE:HG21	1:C:72:ALA:HB2	1.95	0.47
1:D:17:ARG:HD2	1:D:403:LYS:HD2	1.95	0.47
1:B:449:CYS:HB3	7:B:1025:T2N:S2	2.54	0.47
1:C:497:ASN:O	3:C:709:XE:XE	3.10	0.47
1:D:449:CYS:SG	5:D:1023:TJN:S5	2.96	0.47
1:A:431:LEU:HD13	3:A:708:XE:XE	2.91	0.47
1:B:117:LYS:HD3	1:B:135:PRO:HG2	1.97	0.47
1:B:308:GLU:HG2	1:B:309:VAL:HG23	1.95	0.47
1:B:428:ILE:O	1:B:432:ILE:HG12	2.15	0.47
1:A:375:SER:H	3:A:711:XE:XE	2.76	0.47
1:C:567:LEU:HD21	1:C:603:ILE:HG12	1.97	0.47
1:A:240:MET:HE3	1:A:301:VAL:HB	1.97	0.46
1:A:432:ILE:HD12	1:A:538:LEU:HD11	1.97	0.46
1:D:556:GLU:HG3	1:D:558:LYS:H	1.81	0.46
1:B:298:GLN:HA	1:B:301:VAL:HG22	1.97	0.46
1:A:94:HIS:CD2	1:A:260:GLU:HG2	2.50	0.46
1:A:428:ILE:O	1:A:432:ILE:HG12	2.16	0.46
1:C:481:GLY:O	1:C:485:LEU:HG	2.16	0.46
1:B:173:TRP:CD1	1:B:178:ILE:HD11	2.51	0.46
1:D:92:THR:HG23	1:D:150:LEU:HD22	1.97	0.46
1:D:563:ALA:HB2	3:D:1011:XE:XE	2.93	0.46
1:A:166:PRO:HG2	1:A:169:ARG:HB2	1.98	0.46
1:B:169:ARG:NH2	1:B:541:ASP:OD2	2.39	0.46
1:B:259:HIS:CE1	1:B:295:GLU:HG3	2.50	0.46
1:D:57:ILE:HG21	1:D:72:ALA:HB2	1.98	0.46
1:D:259:HIS:NE2	1:D:295:GLU:HG3	2.30	0.46
1:B:317:TRP:HB2	1:B:338:CYS:HB2	1.97	0.46
1:D:492:ASN:HB2	3:D:1020:XE:XE	2.94	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:298:GLN:HE21	1:B:483:HIS:CE1	2.35	0.45
1:D:11:VAL:HG13	1:D:322:PRO:HG2	1.97	0.45
1:D:301:VAL:HG23	1:D:413:THR:HG21	1.97	0.45
1:A:145:PHE:HZ	1:A:159:LYS:HG3	1.81	0.45
1:A:83:ARG:NH1	1:A:580:PRO:HG2	2.31	0.45
1:A:136:GLU:OE1	1:A:136:GLU:N	2.47	0.45
1:D:337:ASN:HD21	1:D:558:LYS:HD2	1.81	0.45
1:A:620:ILE:O	1:A:624:ARG:HG3	2.17	0.45
1:B:435:ILE:HG21	3:B:1009:XE:XE	2.94	0.45
1:B:453:LYS:HB3	1:B:577:PRO:HG3	1.98	0.45
1:C:199:ASP:OD2	1:C:208:LYS:NZ	2.48	0.45
1:B:550:THR:OG1	1:B:574:HIS:ND1	2.41	0.45
1:D:188:LYS:HE3	1:D:188:LYS:HB3	1.67	0.45
1:C:449:CYS:HB3	5:C:723:TJN:S2	2.57	0.44
1:D:559:ALA:HB2	5:D:1023:TJN:S5	2.57	0.44
1:A:493:LEU:H	3:A:713:XE:XE	2.79	0.44
1:B:582:MET:CB	4:B:1022:BR:BR	3.20	0.44
1:D:512:ILE:HD12	1:D:516:LEU:HD21	1.99	0.44
1:D:17:ARG:HH11	1:D:403:LYS:HB2	1.82	0.44
1:C:166:PRO:HG2	1:C:169:ARG:HB2	1.97	0.44
1:B:481:GLY:O	1:B:485:LEU:HG	2.17	0.44
1:D:298:GLN:HA	1:D:301:VAL:HG22	2.00	0.44
1:D:373:LYS:HE2	1:D:373:LYS:HB3	1.85	0.44
1:B:145:PHE:HZ	1:B:159:LYS:HB3	1.83	0.44
1:B:240:MET:HE2	1:B:240:MET:HB2	1.85	0.44
1:C:167:LEU:HA	1:C:170:LYS:HE3	2.00	0.44
1:C:300:VAL:HG13	1:C:304:PHE:CD2	2.52	0.44
1:D:237:PRO:HA	1:D:413:THR:O	2.18	0.44
1:D:323:MET:HE1	1:D:332:LEU:HD13	1.99	0.43
1:A:83:ARG:C	1:A:557:GLN:HG2	2.43	0.43
1:B:300:VAL:O	1:B:304:PHE:N	2.47	0.43
1:C:416:THR:H	1:C:419:ALA:HB3	1.83	0.43
1:D:541:ASP:OD1	1:D:542:THR:N	2.51	0.43
1:C:298:GLN:HA	1:C:301:VAL:HG22	1.99	0.43
1:C:331:VAL:HG11	1:C:384:ILE:HG23	2.00	0.43
1:D:232:PHE:CE1	1:D:265:VAL:HG11	2.53	0.43
1:A:123:MET:HE2	1:A:142:LEU:HD11	2.00	0.43
1:B:436:LYS:HG2	1:B:629:ILE:HG21	2.00	0.43
1:C:493:LEU:HG	3:C:715:XE:XE	2.96	0.43
1:A:507:CYS:HB3	1:A:512:ILE:O	2.18	0.43
1:D:145:PHE:HZ	1:D:159:LYS:HB3	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:337:ASN:HA	1:D:338:CYS:HA	1.73	0.43
1:C:337:ASN:HA	1:C:338:CYS:HA	1.71	0.43
1:D:428:ILE:HD11	1:D:537:ALA:HB2	2.00	0.43
1:A:178:ILE:HA	1:A:211:ARG:NH1	2.34	0.43
1:B:431:LEU:HA	1:B:434:VAL:HG22	2.00	0.43
1:C:97:GLU:HG2	3:C:712:XE:XE	2.96	0.43
1:C:340:PRO:HA	1:C:341:PRO:HD3	1.85	0.43
1:D:524:THR:HG21	1:D:562:ASP:HB3	2.01	0.43
1:B:295:GLU:O	1:B:299:GLU:HG2	2.19	0.43
1:C:257:ASN:HB2	1:C:293:SER:HB3	2.00	0.42
1:D:449:CYS:HB3	5:D:1023:TJN:S2	2.59	0.42
1:B:308:GLU:H	1:B:308:GLU:CD	2.28	0.42
1:C:240:MET:HE1	1:C:305:GLN:HA	2.00	0.42
1:A:94:HIS:NE2	1:A:228:GLN:OE1	2.47	0.42
1:B:45:VAL:HB	1:B:57:ILE:HB	2.01	0.42
1:D:297:GLY:O	1:D:301:VAL:HG13	2.20	0.42
1:D:542:THR:HG21	1:D:569:TYR:CZ	2.54	0.42
1:A:549:VAL:CG1	3:A:705:XE:XE	3.46	0.42
1:B:448:ASN:ND2	1:B:553:MET:H	2.17	0.42
1:B:34:GLU:HA	1:B:37:ARG:HG2	2.02	0.42
1:D:467:GLU:HB3	1:D:471:ARG:NH1	2.34	0.42
1:B:94:HIS:NE2	1:B:228:GLN:OE1	2.52	0.42
1:C:201:ASP:HB3	1:C:204:SER:HB3	2.01	0.42
1:C:314:THR:OG1	1:C:315:GLY:N	2.53	0.42
1:C:379:GLU:O	1:C:383:LYS:HG3	2.20	0.42
1:A:55:CYS:SG	1:A:67:VAL:HG23	2.59	0.42
1:A:582:MET:HE1	3:A:703:XE:XE	2.98	0.42
1:C:225:GLU:CG	1:C:526:ARG:HH21	2.33	0.42
1:D:33:GLN:HB3	1:D:37:ARG:HH22	1.84	0.42
1:D:225:GLU:OE2	1:D:522:THR:O	2.38	0.42
1:C:316:ASN:OD1	1:C:319:THR:HG23	2.20	0.42
1:D:449:CYS:HA	1:D:480:CYS:HB2	2.02	0.42
1:B:450:THR:OG1	1:B:458:ASP:OD1	2.34	0.41
1:C:416:THR:O	1:C:420:ILE:HG12	2.19	0.41
1:D:23:LEU:HD23	4:D:1006:BR:BR	2.75	0.41
1:D:340:PRO:HA	1:D:341:PRO:HD3	1.83	0.41
1:A:316:ASN:OD1	1:A:319:THR:HG23	2.20	0.41
1:B:188:LYS:HB3	1:B:188:LYS:HE2	1.77	0.41
1:C:119:LYS:HB2	1:C:119:LYS:HE3	1.87	0.41
1:C:453:LYS:HB3	1:C:577:PRO:HG3	2.03	0.41
1:D:482:ASN:ND2	1:D:517:SER:OG	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:73:ASP:HA	1:C:584:ALA:HB1	2.01	0.41
1:A:257:ASN:O	1:A:334:MET:HA	2.20	0.41
1:B:556:GLU:OE1	1:B:558:LYS:N	2.30	0.41
1:B:322:PRO:O	1:B:325:ALA:HB3	2.20	0.41
1:C:391:SER:O	1:C:395:LYS:HB2	2.20	0.41
1:C:581:VAL:HG21	3:C:708:XE:XE	2.99	0.41
1:D:418:GLU:CD	1:D:418:GLU:H	2.29	0.41
1:B:137:ASP:O	1:B:141:ARG:HG3	2.21	0.41
1:B:172:VAL:O	1:B:175:LYS:HG3	2.20	0.41
1:D:596:PRO:HG3	1:D:602:ARG:HB3	2.03	0.41
1:C:225:GLU:CG	1:C:526:ARG:NH2	2.84	0.41
1:C:480:CYS:HA	1:C:483:HIS:ND1	2.36	0.41
1:A:340:PRO:HD2	1:A:343:LEU:HD11	2.02	0.40
1:D:449:CYS:SG	1:D:559:ALA:HB2	2.61	0.40
1:A:441:LYS:HG2	1:A:472:ASP:HB2	2.03	0.40
1:B:17:ARG:CZ	1:B:403:LYS:HG3	2.51	0.40
1:B:134:LYS:HE3	1:B:135:PRO:HD2	2.02	0.40
1:B:567:LEU:HD11	1:B:603:ILE:HD11	2.04	0.40
1:C:180:PRO:HB2	1:C:215:SER:HB3	2.03	0.40
1:C:297:GLY:O	1:C:301:VAL:HG13	2.22	0.40
1:A:390:ASP:OD2	3:A:712:XE:XE	3.17	0.40
1:C:105:THR:OG1	1:C:110:THR:OG1	2.36	0.40
1:D:240:MET:SD	1:D:306:LYS:HB2	2.61	0.40
1:D:395:LYS:HA	1:D:395:LYS:HD2	1.87	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	627/629 (100%)	594 (95%)	32 (5%)	1 (0%)	43 63

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	626/629 (100%)	596 (95%)	29 (5%)	1 (0%)	43	63
1	C	627/629 (100%)	592 (94%)	34 (5%)	1 (0%)	43	63
1	D	627/629 (100%)	594 (95%)	31 (5%)	2 (0%)	36	55
All	All	2507/2516 (100%)	2376 (95%)	126 (5%)	5 (0%)	43	63

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	294	ILE
1	C	294	ILE
1	D	294	ILE
1	B	294	ILE
1	D	395	LYS

5.3.2 Protein sidechains ⓘ

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	516/516 (100%)	511 (99%)	5 (1%)	68	86
1	B	515/516 (100%)	511 (99%)	4 (1%)	73	88
1	C	516/516 (100%)	508 (98%)	8 (2%)	55	79
1	D	516/516 (100%)	511 (99%)	5 (1%)	68	86
All	All	2063/2064 (100%)	2041 (99%)	22 (1%)	65	84

All (22) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	50	CYS
1	A	179	TYR
1	A	215	SER
1	A	331	VAL
1	A	449	CYS
1	B	50	CYS

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Mol	Chain	Res	Type
1	B	179	TYR
1	B	195	LEU
1	B	449	CYS
1	C	20	GLU
1	C	37	ARG
1	C	50	CYS
1	C	295	GLU
1	C	302	GLN
1	C	305	GLN
1	C	449	CYS
1	C	556	GLU
1	D	35	LYS
1	D	221	GLN
1	D	224	LEU
1	D	413	THR
1	D	449	CYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (19) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	276	ASN
1	A	316	ASN
1	A	342	ASN
1	A	382	GLN
1	A	397	HIS
1	A	457	GLN
1	A	497	ASN
1	B	122	GLN
1	B	259	HIS
1	B	298	GLN
1	B	337	ASN
1	B	557	GLN
1	C	337	ASN
1	C	342	ASN
1	C	407	ASN
1	D	12	ASN
1	D	94	HIS
1	D	228	GLN
1	D	407	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](#)

Of 94 ligands modelled in this entry, 84 are monoatomic - leaving 10 for Mogul analysis.

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	$\# Z > 2$
6	FES	D	1001	1	0,4,4	-	-	-		
5	TJN	D	1023	1	0,10,10	-	-	-		
7	T2N	B	1025	1	0,9,9	-	-	-		
2	SF4	C	701	-	0,12,12	-	-	-		
2	SF4	B	1002	-	0,12,12	-	-	-		
5	TJN	A	724	1	0,10,10	-	-	-		
5	TJN	C	723	1	0,10,10	-	-	-		
2	SF4	D	1007	-	0,12,12	-	-	-		
6	FES	B	1001	1	0,4,4	-	-	-		
2	SF4	A	701	-	0,12,12	-	-	-		

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
6	FES	D	1001	1	-	-	0/1/1/1
5	TJN	D	1023	1	-	-	0/1/2/2
7	T2N	B	1025	1	-	-	0/1/2/2
2	SF4	C	701	-	-	-	0/6/5/5
2	SF4	B	1002	-	-	-	0/6/5/5
5	TJN	A	724	1	-	-	0/1/2/2
5	TJN	C	723	1	-	-	0/1/2/2
2	SF4	D	1007	-	-	-	0/6/5/5
6	FES	B	1001	1	-	-	0/1/1/1
2	SF4	A	701	-	-	-	0/6/5/5

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

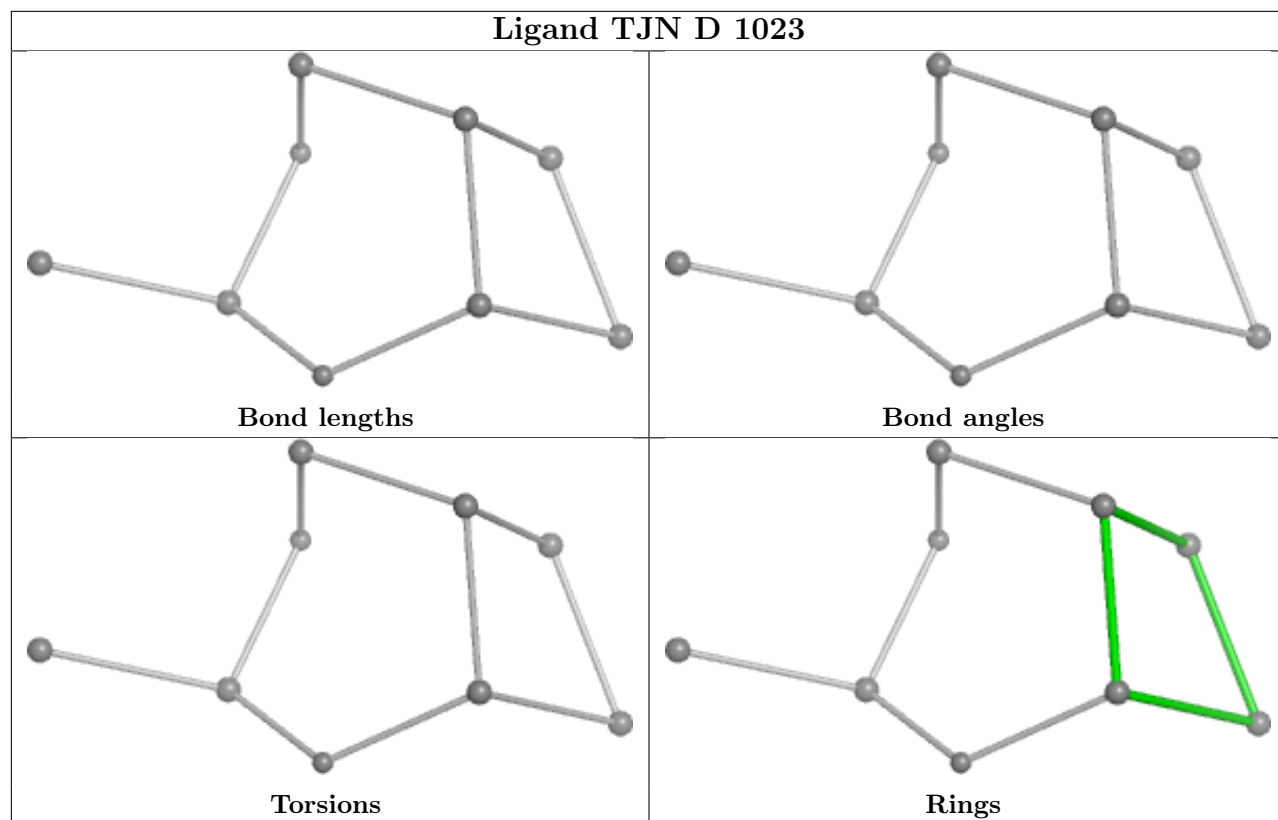
There are no torsion outliers.

There are no ring outliers.

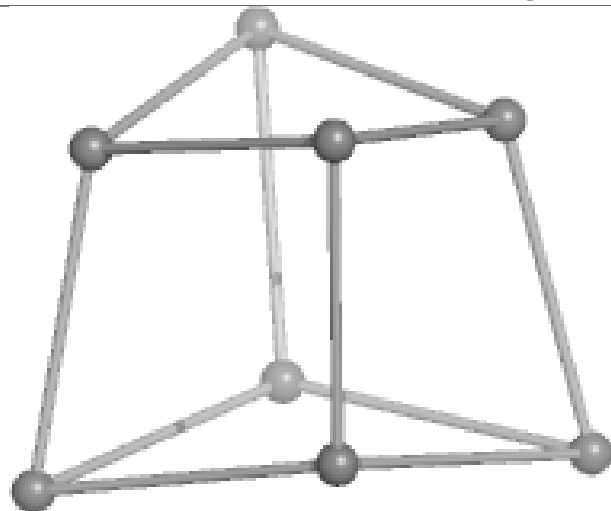
3 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	D	1023	TJN	3	0
7	B	1025	T2N	1	0
5	C	723	TJN	2	0

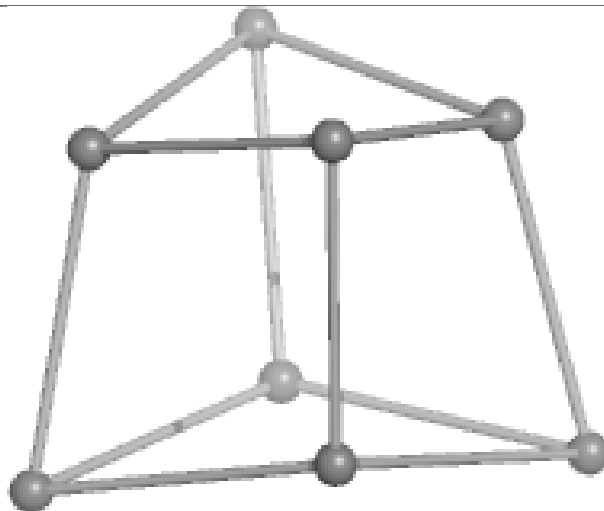
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 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.



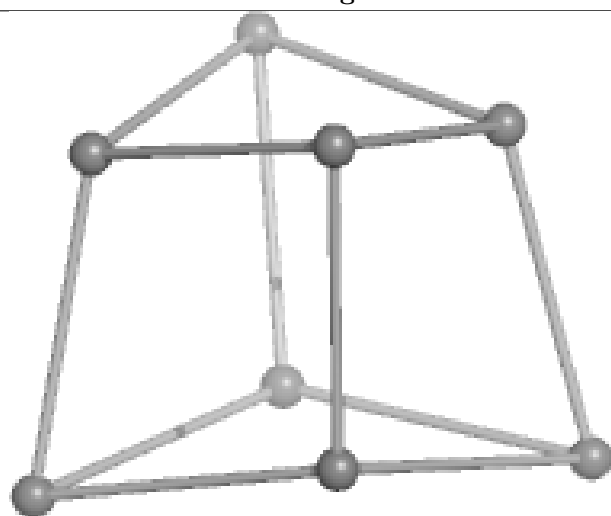
Ligand SF4 C 701



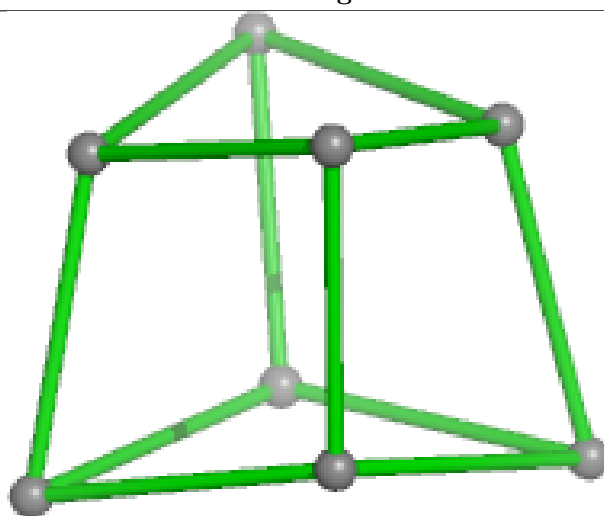
Bond lengths



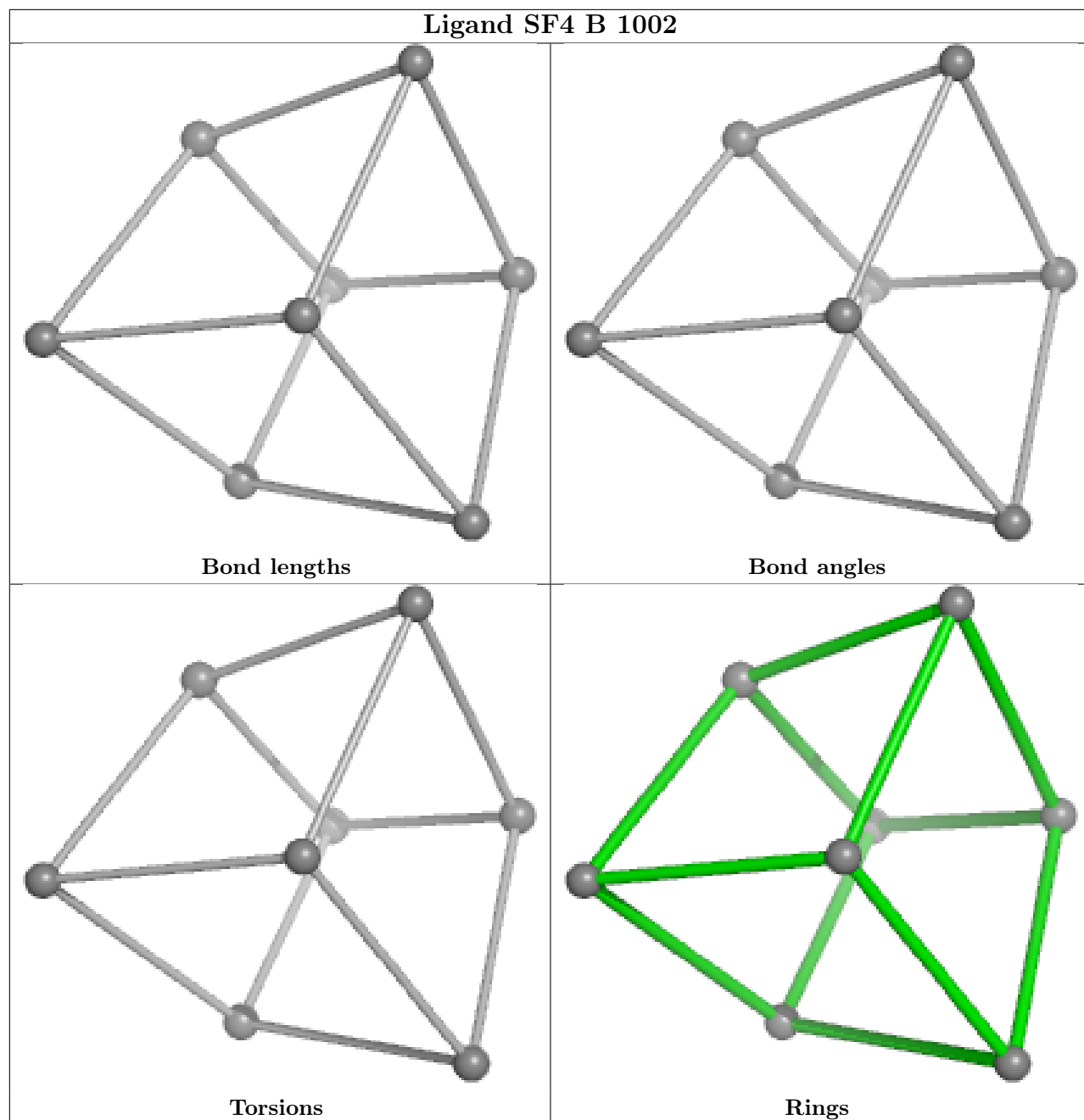
Bond angles

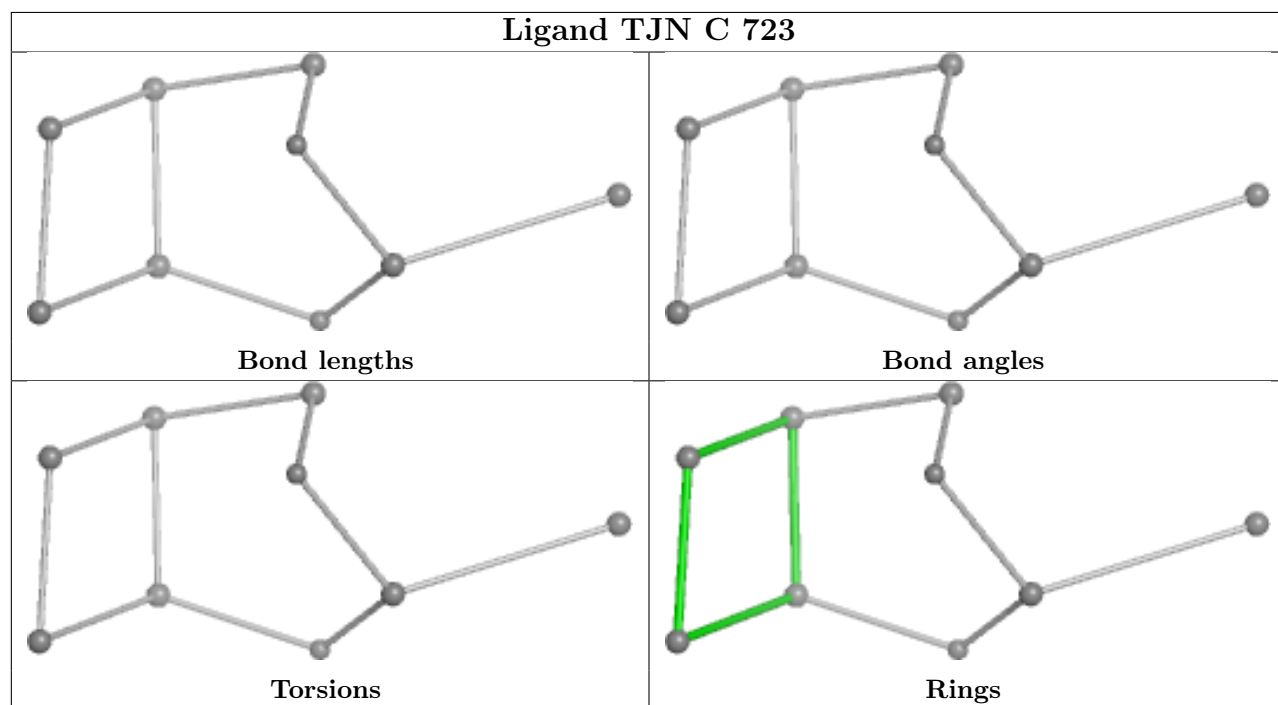
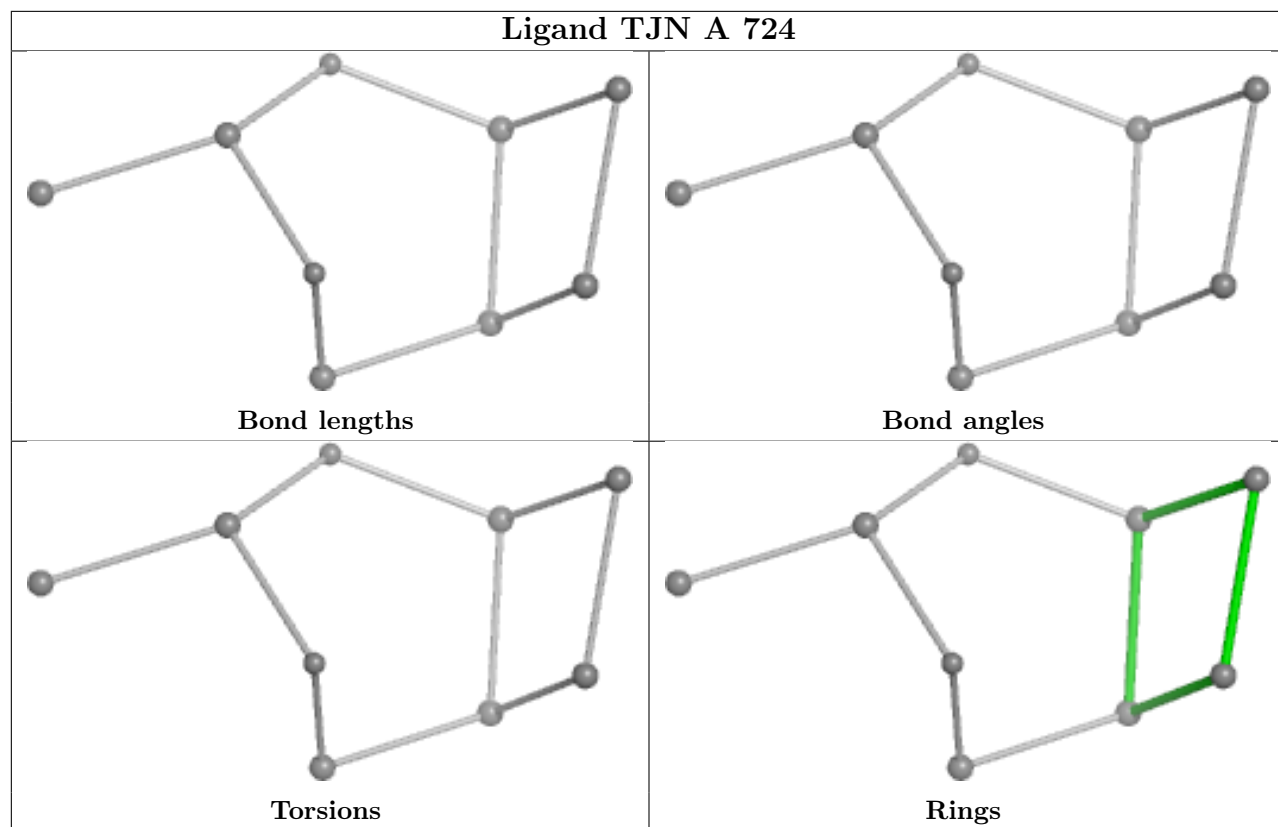


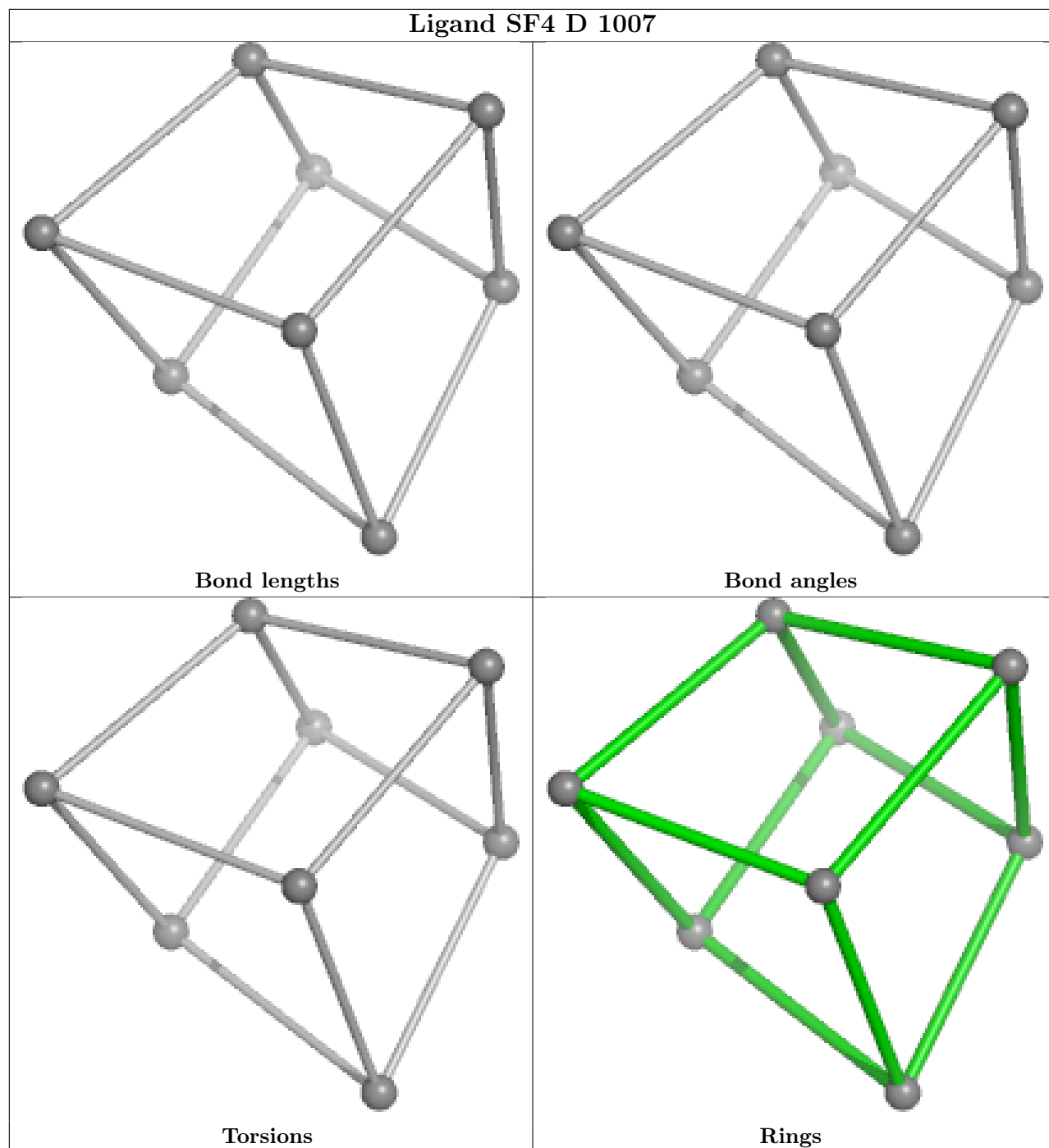
Torsions

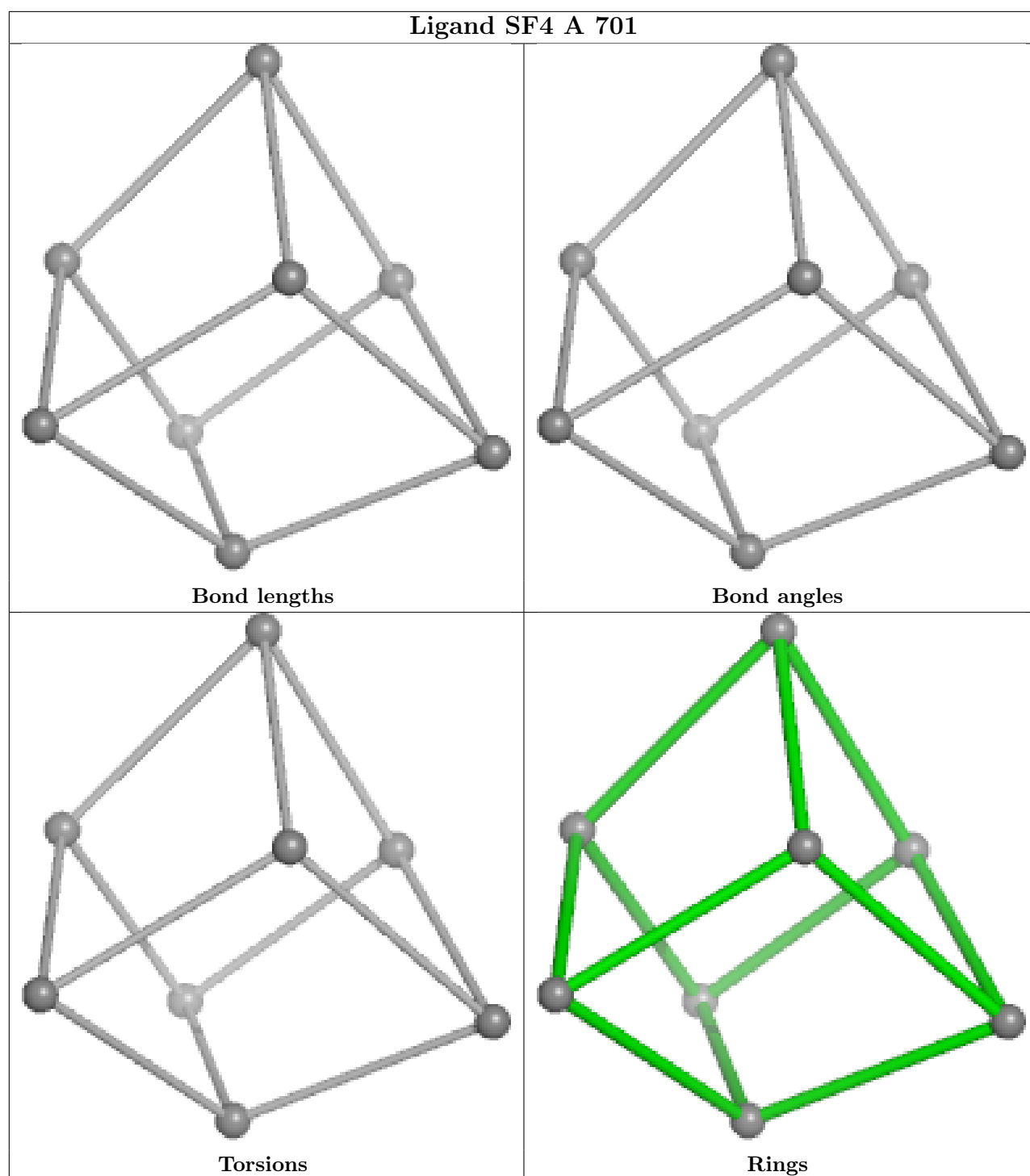


Rings









5.7 Other polymers [i](#)

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, 95th 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	629/629 (100%)	0.43	12 (1%) 66 62	12, 23, 34, 43	2 (0%)
1	B	628/629 (99%)	0.41	17 (2%) 56 51	10, 22, 34, 46	0
1	C	629/629 (100%)	0.52	18 (2%) 53 49	14, 26, 38, 46	0
1	D	629/629 (100%)	0.80	35 (5%) 30 26	15, 33, 45, 53	0
All	All	2515/2516 (99%)	0.54	82 (3%) 49 45	10, 25, 41, 53	2 (0%)

All (82) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	479	GLY	5.0
1	D	480	CYS	4.2
1	C	520	THR	4.1
1	C	519	GLY	3.8
1	D	447	ILE	3.5
1	D	293	SER	3.5
1	C	480	CYS	3.3
1	D	287	SER	3.3
1	A	482	ASN	3.3
1	D	182	GLY	3.2
1	A	300	VAL	3.2
1	C	154	TYR	3.0
1	D	479	GLY	3.0
1	D	297	GLY	2.9
1	D	316	ASN	2.9
1	A	480	CYS	2.9
1	B	470	LYS	2.8
1	A	301	VAL	2.7
1	D	275	VAL	2.7
1	A	479	GLY	2.7
1	C	301	VAL	2.7

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Mol	Chain	Res	Type	RSRZ
1	B	480	CYS	2.6
1	B	447	ILE	2.6
1	D	298	GLN	2.6
1	B	479	GLY	2.5
1	B	313	LEU	2.5
1	D	395	LYS	2.5
1	D	249	ALA	2.5
1	B	520	THR	2.5
1	D	3	THR	2.5
1	D	482	ASN	2.5
1	A	447	ILE	2.4
1	D	155	ASP	2.4
1	A	519	GLY	2.4
1	B	154	TYR	2.4
1	D	251	TYR	2.4
1	D	313	LEU	2.4
1	D	499	ALA	2.4
1	C	447	ILE	2.4
1	B	298	GLN	2.4
1	D	36	ILE	2.4
1	D	520	THR	2.3
1	B	519	GLY	2.3
1	D	277	GLN	2.3
1	D	338	CYS	2.3
1	A	308	GLU	2.3
1	C	314	THR	2.3
1	C	235	GLY	2.3
1	D	397	HIS	2.3
1	C	300	VAL	2.3
1	C	482	ASN	2.3
1	A	483	HIS	2.3
1	B	556	GLU	2.3
1	B	316	ASN	2.2
1	D	51	SER	2.2
1	D	328	ALA	2.2
1	C	338	CYS	2.2
1	C	481	GLY	2.2
1	D	129	LEU	2.2
1	B	294	ILE	2.2
1	C	483	HIS	2.2
1	B	258	GLY	2.2
1	B	518	PHE	2.2

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Mol	Chain	Res	Type	RSRZ
1	D	315	GLY	2.1
1	C	449	CYS	2.1
1	C	1	MET	2.1
1	A	316	ASN	2.1
1	D	23	LEU	2.1
1	D	62	GLY	2.1
1	D	20	GLU	2.1
1	D	449	CYS	2.1
1	C	539	ASN	2.1
1	B	314	THR	2.1
1	D	312	GLY	2.1
1	B	50	CYS	2.1
1	C	3	THR	2.1
1	B	449	CYS	2.1
1	A	625	ALA	2.0
1	D	388	ALA	2.0
1	A	47	CYS	2.0
1	D	16	GLN	2.0
1	D	137	ASP	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

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, 95th 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($\text{\AA}^2$)	Q<0.9
3	XE	C	709	1/1	0.39	0.76	196,196,196,196	0
4	BR	B	1020	1/1	0.58	0.13	45,45,45,45	1
4	BR	B	1023	1/1	0.60	0.19	73,73,73,73	1
4	BR	B	1024	1/1	0.61	0.26	57,57,57,57	1

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
4	BR	B	1022	1/1	0.66	0.16	51,51,51,51	1
3	XE	D	1020	1/1	0.80	0.16	129,129,129,129	0
3	XE	D	1022	1/1	0.82	0.19	48,48,48,48	1
7	T2N	B	1025	8/8	0.84	0.13	28,32,39,52	8
3	XE	A	712	1/1	0.85	0.23	94,94,94,94	0
4	BR	B	1021	1/1	0.85	0.32	72,72,72,72	1
3	XE	C	712	1/1	0.85	0.13	116,116,116,116	0
3	XE	A	715	1/1	0.87	0.11	107,107,107,107	0
3	XE	B	1005	1/1	0.87	0.15	85,85,85,85	0
3	XE	B	1007	1/1	0.89	0.20	82,82,82,82	0
2	SF4	D	1007	8/8	0.89	0.09	6,11,17,19	0
3	XE	A	714	1/1	0.89	0.12	100,100,100,100	0
3	XE	C	713	1/1	0.89	0.11	101,101,101,101	0
3	XE	D	1021	1/1	0.90	0.20	120,120,120,120	0
3	XE	C	710	1/1	0.90	0.56	158,158,158,158	0
3	XE	D	1011	1/1	0.90	0.18	88,88,88,88	0
5	TJN	A	724	9/9	0.90	0.12	22,25,30,36	9
5	TJN	C	723	9/9	0.90	0.11	23,35,37,51	9
3	XE	A	705	1/1	0.90	0.06	34,34,34,34	1
2	SF4	C	701	8/8	0.91	0.08	18,25,34,35	0
2	SF4	B	1002	8/8	0.91	0.07	6,11,18,21	0
5	TJN	D	1023	9/9	0.91	0.11	32,34,38,39	9
3	XE	A	721	1/1	0.91	0.08	52,52,52,52	1
3	XE	C	714	1/1	0.92	0.15	105,105,105,105	0
3	XE	A	723	1/1	0.92	0.11	94,94,94,94	0
4	BR	B	1016	1/1	0.92	0.07	38,38,38,38	1
3	XE	D	1016	1/1	0.92	0.09	96,96,96,96	0
3	XE	D	1019	1/1	0.92	0.13	93,93,93,93	0
3	XE	B	1014	1/1	0.92	0.12	95,95,95,95	0
3	XE	A	713	1/1	0.93	0.15	106,106,106,106	0
3	XE	B	1015	1/1	0.93	0.22	115,115,115,115	0
3	XE	B	1011	1/1	0.93	0.12	109,109,109,109	0
3	XE	C	715	1/1	0.93	0.13	117,117,117,117	0
3	XE	B	1013	1/1	0.93	0.12	114,114,114,114	0
4	BR	C	721	1/1	0.94	0.06	38,38,38,38	1
3	XE	D	1015	1/1	0.94	0.10	93,93,93,93	0
3	XE	B	1009	1/1	0.94	0.14	96,96,96,96	0
3	XE	C	704	1/1	0.94	0.14	72,72,72,72	0
2	SF4	A	701	8/8	0.94	0.07	15,19,21,22	0
3	XE	A	716	1/1	0.95	0.11	97,97,97,97	0
4	BR	B	1018	1/1	0.95	0.06	38,38,38,38	1
3	XE	A	708	1/1	0.95	0.12	86,86,86,86	1

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
4	BR	C	720	1/1	0.96	0.09	31,31,31,31	1
4	BR	A	717	1/1	0.96	0.06	25,25,25,25	1
4	BR	D	1005	1/1	0.96	0.04	32,32,32,32	1
4	BR	A	719	1/1	0.96	0.05	36,36,36,36	1
3	XE	D	1014	1/1	0.96	0.09	79,79,79,79	0
3	XE	D	1018	1/1	0.96	0.06	99,99,99,99	0
4	BR	B	1019	1/1	0.96	0.05	35,35,35,35	1
4	BR	C	722	1/1	0.97	0.05	34,34,34,34	1
4	BR	D	1004	1/1	0.97	0.04	44,44,44,44	1
3	XE	D	1009	1/1	0.97	0.09	74,74,74,74	0
3	XE	A	710	1/1	0.97	0.04	54,54,54,54	1
3	XE	A	702	1/1	0.97	0.04	50,50,50,50	0
4	BR	A	718	1/1	0.97	0.06	30,30,30,30	1
3	XE	C	708	1/1	0.97	0.08	70,70,70,70	0
3	XE	D	1017	1/1	0.98	0.06	92,92,92,92	0
3	XE	D	1010	1/1	0.98	0.03	47,47,47,47	0
4	BR	D	1003	1/1	0.98	0.03	36,36,36,36	1
3	XE	A	703	1/1	0.98	0.04	37,37,37,37	1
3	XE	A	711	1/1	0.98	0.04	44,44,44,44	1
3	XE	C	711	1/1	0.98	0.05	67,67,67,67	0
4	BR	C	718	1/1	0.98	0.04	40,40,40,40	1
4	BR	C	719	1/1	0.98	0.03	41,41,41,41	1
6	FES	B	1001	4/4	0.98	0.03	9,12,16,20	0
6	FES	D	1001	4/4	0.98	0.04	15,20,22,25	0
3	XE	B	1010	1/1	0.98	0.11	62,62,62,62	0
3	XE	D	1008	1/1	0.99	0.03	21,21,21,21	1
3	XE	C	706	1/1	0.99	0.05	39,39,39,39	0
3	XE	C	707	1/1	0.99	0.14	64,64,64,64	0
3	XE	B	1012	1/1	0.99	0.07	64,64,64,64	0
3	XE	D	1012	1/1	0.99	0.03	37,37,37,37	0
4	BR	D	1002	1/1	0.99	0.03	14,14,14,14	0
3	XE	D	1013	1/1	0.99	0.02	44,44,44,44	0
4	BR	B	1017	1/1	0.99	0.02	21,21,21,21	1
3	XE	A	707	1/1	0.99	0.03	40,40,40,40	0
4	BR	D	1006	1/1	0.99	0.05	43,43,43,43	0
3	XE	B	1003	1/1	0.99	0.06	45,45,45,45	0
3	XE	B	1004	1/1	0.99	0.02	43,43,43,43	0
3	XE	C	702	1/1	0.99	0.08	56,56,56,56	0
3	XE	C	703	1/1	0.99	0.03	45,45,45,45	0
3	XE	A	704	1/1	0.99	0.04	26,26,26,26	1
3	XE	C	705	1/1	0.99	0.01	36,36,36,36	0
3	XE	A	709	1/1	1.00	0.01	27,27,27,27	1

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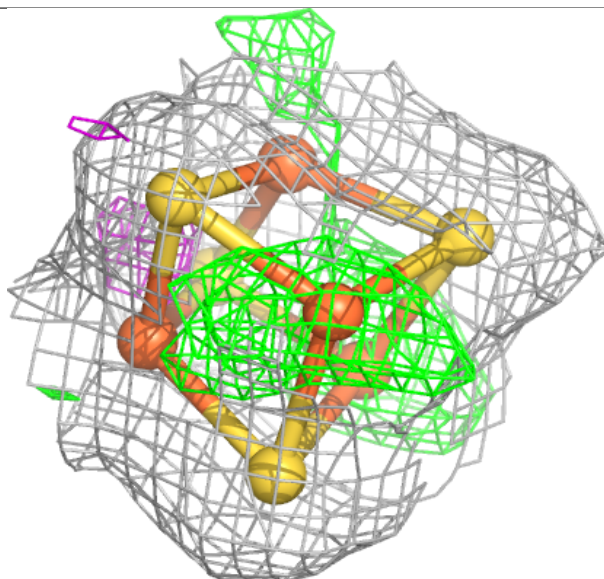
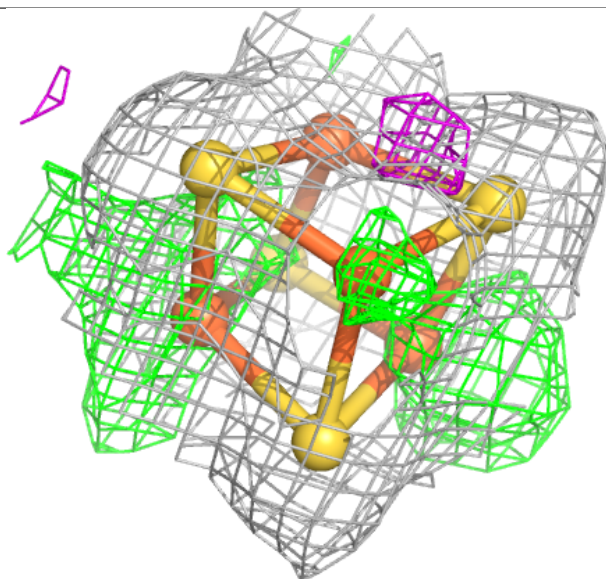
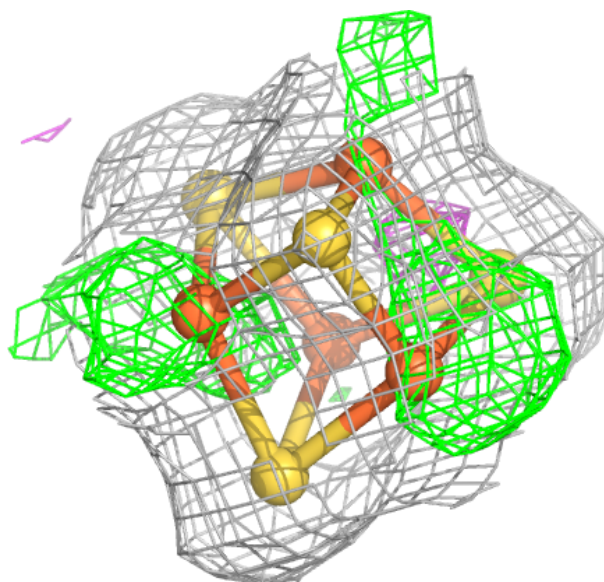
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
3	XE	B	1008	1/1	1.00	0.01	36,36,36,36	0
3	XE	A	722	1/1	1.00	0.02	26,26,26,26	0
3	XE	A	706	1/1	1.00	0.01	30,30,30,30	0
4	BR	C	717	1/1	1.00	0.04	13,13,13,13	0
3	XE	B	1026	1/1	1.00	0.02	24,24,24,24	0
3	XE	B	1006	1/1	1.00	0.01	28,28,28,28	0

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.

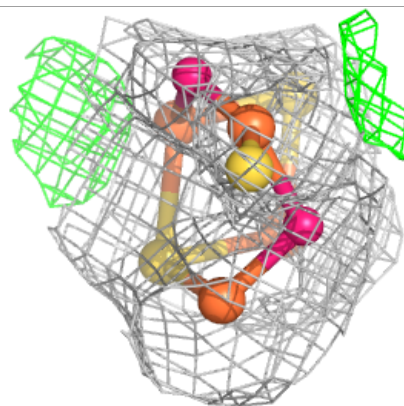
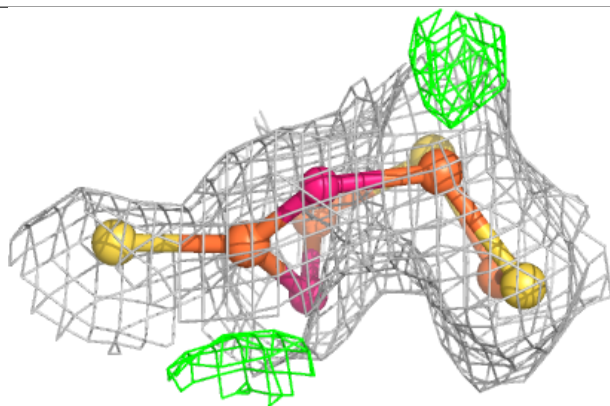
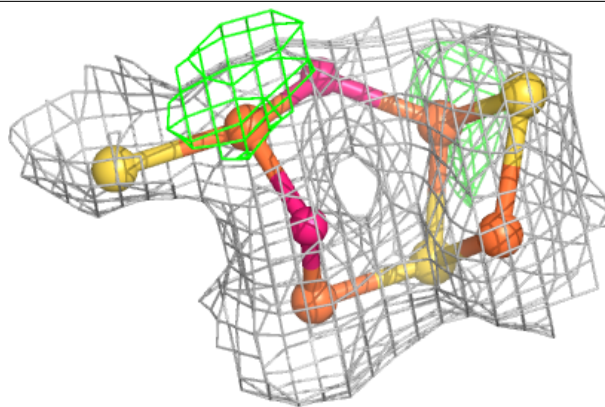
Electron density around SF4 D 1007:

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

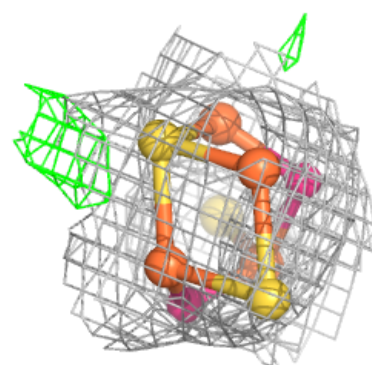
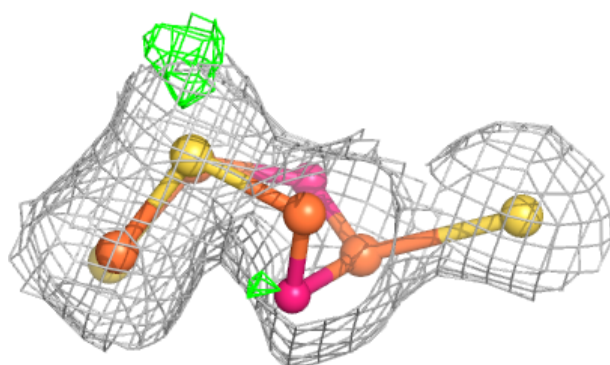
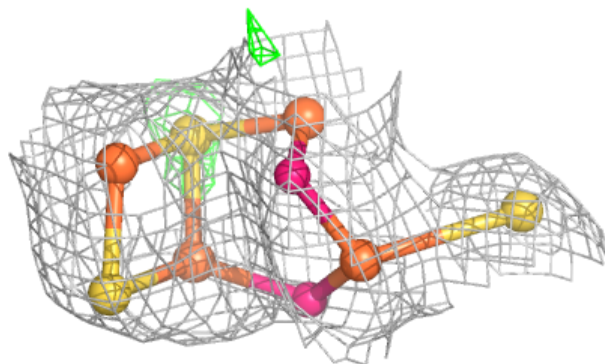


Electron density around TJN A 724:

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

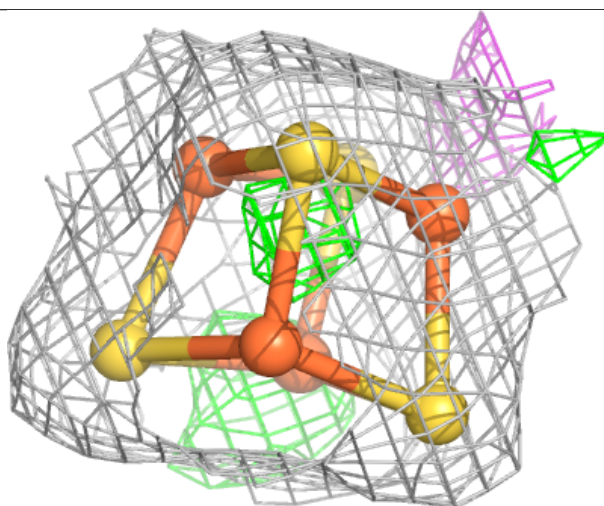
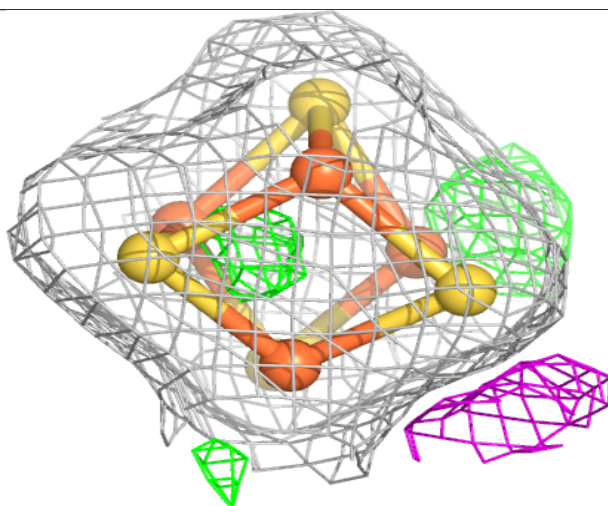
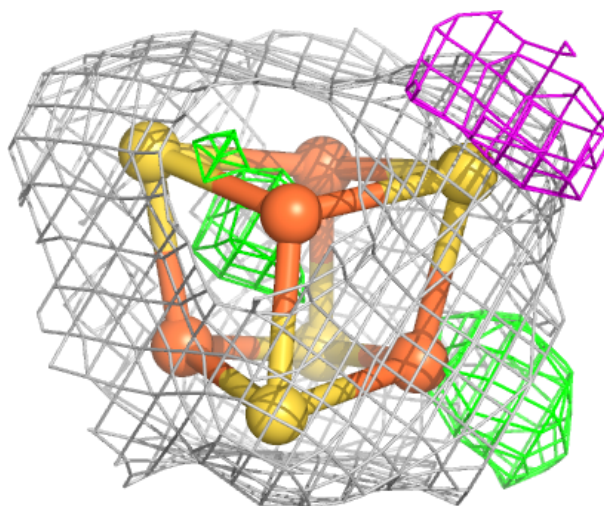
**Electron density around TJN C 723:**

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



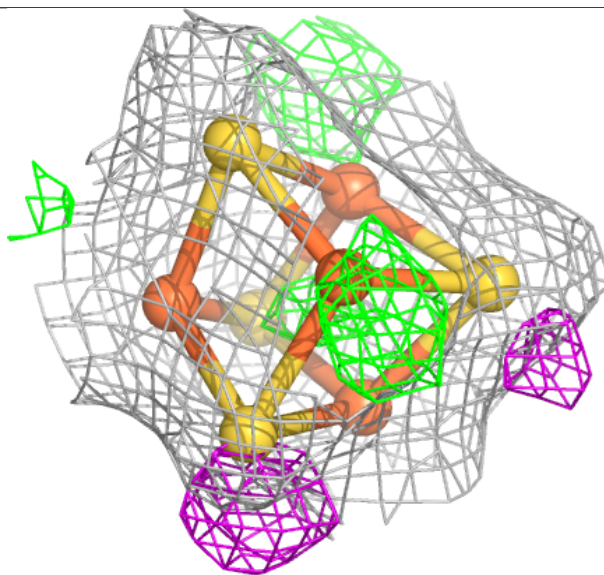
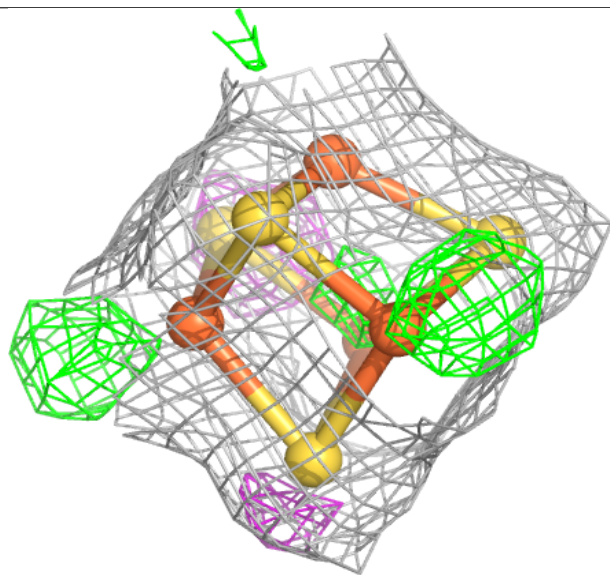
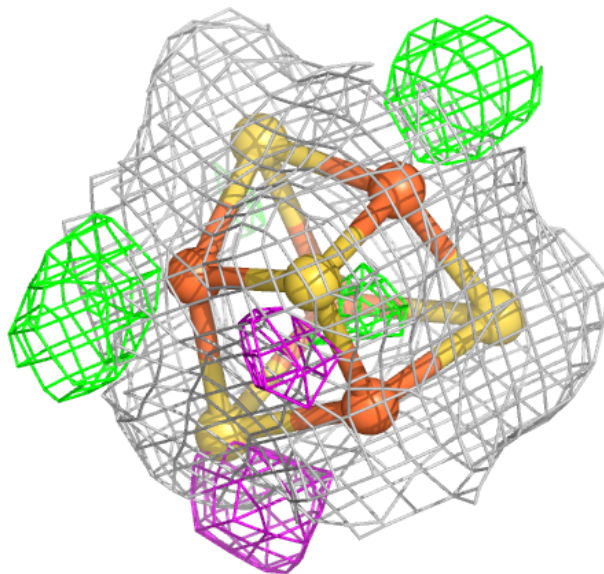
Electron density around SF4 C 701:

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



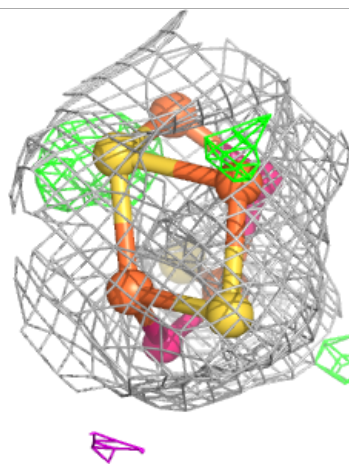
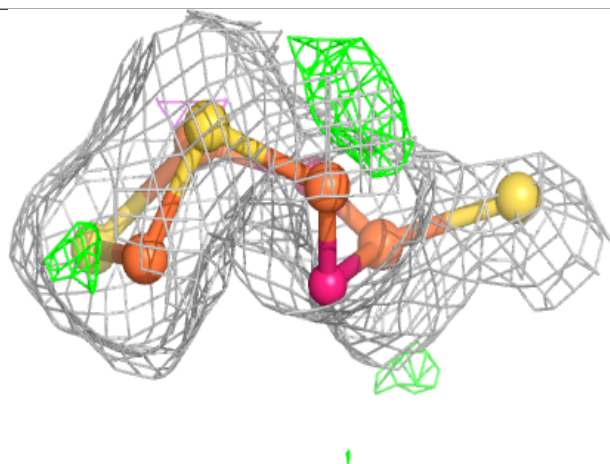
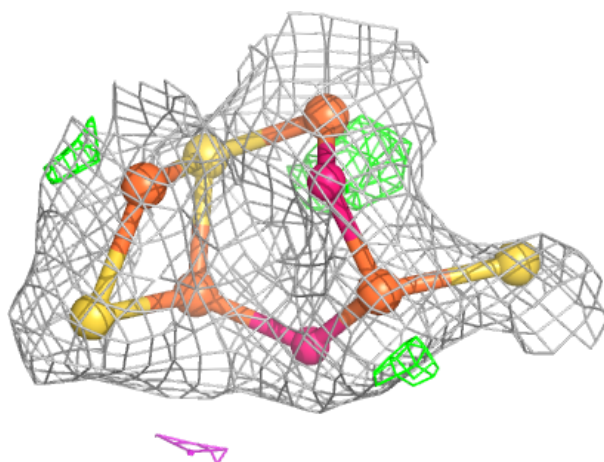
Electron density around SF4 B 1002:

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



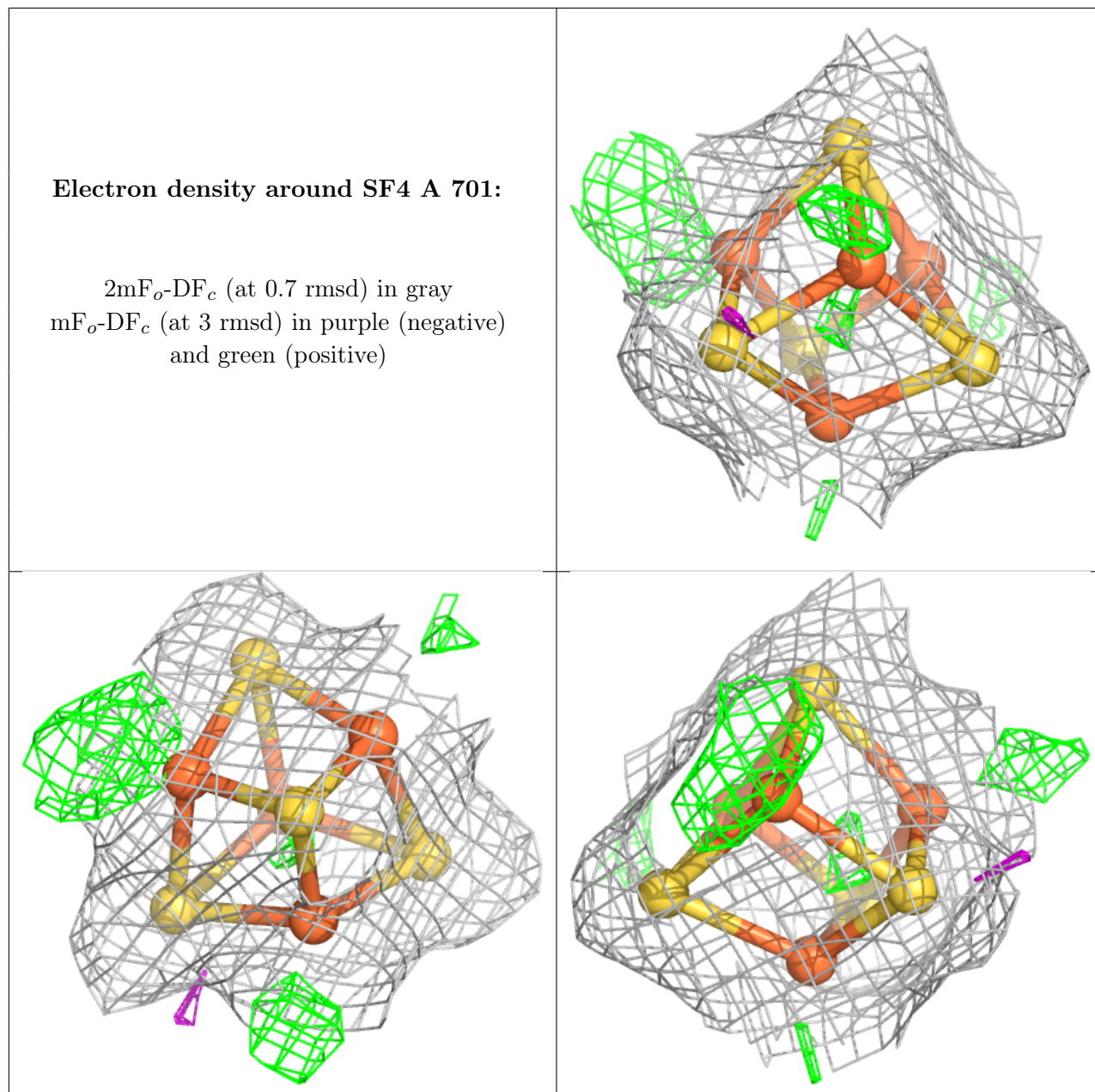
Electron density around TJN D 1023:

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



Electron density around SF4 A 701:

$2mF_o-DF_c$ (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.