

checkCIF/PLATON report

You have not supplied any structure factors. As a result the full set of tests cannot be run.

THIS REPORT IS FOR GUIDANCE ONLY. IF USED AS PART OF A REVIEW PROCEDURE FOR PUBLICATION, IT SHOULD NOT REPLACE THE EXPERTISE OF AN EXPERIENCED CRYSTALLOGRAPHIC REFEREE.

No syntax errors found. CIF dictionary Interpreting this report

Datablock: MUF-93-84h-71pc

Bond precision: = 0.0000 Å

Wavelength=0.71075

Cell: a=17.126(3) b=17.126(3) c=17.126(3)
 alpha=90 beta=90 gamma=90
Temperature: 100 K

	Calculated	Reported
Volume	5023(3)	5023(2)
Space group	P -4 3 m	P -4 3 m
Hall group	P -4 2 3	P -4 2 3
Moiety formula	C4.76 H2.72 Co0.12 N0.25 00.93 Zn0.17	1(C84 H48 N6 O13 Zn4), 1(C30.23 H17.28 Co2.88 O9.36)
Sum formula	C4.76 H2.72 Co0.12 N0.25 00.93 Zn0.17	C114.22 H65.27 Co2.88 N6 O22.36 Zn4
Mr	96.29	2310.53
Dx, g cm ⁻³	0.764	0.764
Z	24	1
Mu (mm ⁻¹)	0.740	0.740
F000	1169.4	1169.0
F000'	1171.99	
h, k, lmax	15, 15, 15	15, 15, 15
Nref	800[454]	794
Tmin, Tmax		0.484, 0.745
Tmin'		

Correction method= # Reported T Limits: Tmin=0.484 Tmax=0.745
AbsCorr = MULTI-SCAN

Data completeness= 1.75/0.99 Theta(max)= 18.833

R(reflections)= 0.1598(588) wR2(reflections)= 0.3801(794)

S = 1.576 Npar= 99

The following ALERTS were generated. Each ALERT has the format

test-name_ALERT_alert-type_alert-level.

Click on the hyperlinks for more details of the test.

Alert level A

THETM01_ALERT_3_A The value of $\sin(\theta_{\max})/\lambda$ is less than 0.550

Calculated $\sin(\theta_{\max})/\lambda = 0.4542$

PLAT245_ALERT_2_A U(iso) H13 Smaller than U(eq) N1 by 0.143 Ang**2

Alert level B

PLAT049_ALERT_1_B	Calculated Density Less Than 1.0 gcm-3	0.7640	Check
PLAT082_ALERT_2_B	High R1 Value	0.16	Report
PLAT084_ALERT_3_B	High wR2 Value (i.e. > 0.25)	0.38	Report
PLAT090_ALERT_3_B	Poor Data / Parameter Ratio (Zmax > 18)	4.59	Note
PLAT315_ALERT_2_B	Singly Bonded Carbon Detected (H-atoms Missing).	C14	Check
PLAT315_ALERT_2_B	Singly Bonded Carbon Detected (H-atoms Missing).	C34	Check
PLAT987_ALERT_1_B	The Flack x is >> 0 - Do a BASF/TWIN Refinement		Please Check

Alert level C

STRVA01_ALERT_4_C Flack test results are ambiguous.

From the CIF: `_refine_ls_abs_structure_Flack` 0.450

From the CIF: `_refine_ls_abs_structure_Flack_su` 0.040

PLAT041_ALERT_1_C	Calc. and Reported SumFormula Strings Differ		Please Check
PLAT053_ALERT_1_C	Minimum Crystal Dimension Missing (or Error) ...		Please Check
PLAT054_ALERT_1_C	Medium Crystal Dimension Missing (or Error) ...		Please Check
PLAT055_ALERT_1_C	Maximum Crystal Dimension Missing (or Error) ...		Please Check
PLAT077_ALERT_4_C	Unitcell Contains Non-integer Number of Atoms ..		Please Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		01 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		ZN1 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		02 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C10 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C11 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C12 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C13 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C14 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		N1 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C15 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C16 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C17 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C18 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C19 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C20 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C21 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C02 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		03 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		04 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C30 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C31 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C32 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C33 Check
PLAT161_ALERT_4_C	Missing or Zero s.u. (esd) on x-coordinate for .		C34 Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .		01 Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .		ZN1 Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .		02 Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .		C10 Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .		C11 Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .		C12 Check

PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C13	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C14	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	N1	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C15	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C16	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C17	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C18	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C19	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C20	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C21	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C02	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	03	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	04	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C30	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C31	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C32	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C33	Check
PLAT162_ALERT_4_C	Missing or Zero s.u. (esd) on y-coordinate for .	C34	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	01	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	ZN1	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	02	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C10	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C11	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C12	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C13	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C14	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	N1	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C15	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C16	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C17	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C18	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C19	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C20	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C21	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C02	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	03	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	04	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C30	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C31	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C32	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C33	Check
PLAT163_ALERT_4_C	Missing or Zero s.u. (esd) on z-coordinate for .	C34	Check
PLAT250_ALERT_2_C	Large U3/U1 Ratio for Average U(i,j) Tensor	2.2	Note
PLAT260_ALERT_2_C	Large Average Ueq of Residue Including Zn1	0.224	Check
PLAT329_ALERT_4_C	Carbon Atom Hybridisation Unclear for	C13	Check
PLAT790_ALERT_4_C	Centre of Gravity not Within Unit Cell: Resd. #	1	Note
C4.76 H2.72 Co0.12 N0.25 O0.93 Zn0.17			

● Alert level G

FORMU01_ALERT_1_G There is a discrepancy between the atom counts in the
 _chemical_formula_sum and _chemical_formula_moiety. This is
 usually due to the moiety formula being in the wrong format.
 Atom count from _chemical_formula_sum: C114.22 H65.26999 Co2.88 N6 O
 Atom count from _chemical_formula_moiety:C114.2300 H65.28 Co2.88 N6 O2

FORMU01_ALERT_2_G There is a discrepancy between the atom counts in the
 _chemical_formula_sum and the formula from the _atom_site* data.
 Atom count from _chemical_formula_sum:C114.22 H65.26999 Co2.88 N6 O22.
 Atom count from the _atom_site data: C82.37340 H56.63547 Co0.479961 N

CELLZ01_ALERT_1_G Difference between formula and atom_site contents detected.

CELLZ01_ALERT_1_G ALERT: Large difference may be due to a

symmetry error - see SYMMG tests
 From the CIF: _cell_formula_units_Z 1
 From the CIF: _chemical_formula_sum C114.22 H65.27 Co2.88 N6 O22.36 Zn
 TEST: Compare cell contents of formula and atom_site data

atom	Z*formula	cif sites	diff	
C	114.23	82.38	31.85	
H	65.28	56.64	8.64	
Co	2.88	0.48	2.40	
N	6.00	6.00	0.00	
O	22.36	10.39	11.97	
Zn	4.00	0.67	3.33	
PLAT002_ALERT_2_G	Number of Distance or Angle Restraints on AtSite		11	Note
PLAT003_ALERT_2_G	Number of Uiso or Uij Restrained non-H Atoms ...		16	Report
PLAT007_ALERT_5_G	Number of Unrefined Donor-H Atoms		1	Report
PLAT012_ALERT_1_G	No _shelx_res_checksum Found in CIF			Please Check
PLAT042_ALERT_1_G	Calc. and Reported MoietyFormula Strings Differ			Please Check
PLAT045_ALERT_1_G	Calculated and Reported Z Differ by a Factor ...		24.00	Check
PLAT068_ALERT_1_G	Reported F000 Differs from Calcd (or Missing)...			Please Check
PLAT072_ALERT_2_G	SHELXL First Parameter in WGHT Unusually Large		0.20	Report
PLAT172_ALERT_4_G	The CIF-Embedded .res File Contains DFIX Records		11	Report
PLAT174_ALERT_4_G	The CIF-Embedded .res File Contains FLAT Records		2	Report
PLAT178_ALERT_4_G	The CIF-Embedded .res File Contains SIMU Records		2	Report
PLAT186_ALERT_4_G	The CIF-Embedded .res File Contains ISOR Records		3	Report
PLAT300_ALERT_4_G	Atom Site Occupancy of Zn1 Constrained at		0.1667	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of O2 Constrained at		0.5	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of O1 Constrained at		0.0417	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of C12 Constrained at		0.5	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of C13 Constrained at		0.5	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of N1 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of C10 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of C11 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of C14 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of C15 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of C16 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of C17 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of C18 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of C19 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of C20 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of C21 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of H12 Constrained at		0.5	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of H13 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of H17 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of H18 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of H19 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of H20 Constrained at		0.25	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of H21 Constrained at		0.25	Check
PLAT301_ALERT_3_G	Main Residue Disorder(Resd 1)		100%	Note
PLAT304_ALERT_4_G	Non-Integer Number of Atoms in Resd 1		8.95	Check
PLAT607_ALERT_4_G	VOID Test Skipped Due to Severe Disorder			! Info
PLAT779_ALERT_4_G	Suspect or Irrelevant (Bond) Angle(s) in CIF . #		13	Check
	N1 -C13 -H13 1.555 1.555 1.555		6.70	Deg.
PLAT779_ALERT_4_G	Suspect or Irrelevant (Bond) Angle(s) in CIF . #		14	Check
	C13 -N1 -H13 1.555 1.555 1.555		10.90	Deg.
PLAT789_ALERT_4_G	Atoms with Negative _atom_site_disorder_group #		33	Check
PLAT860_ALERT_3_G	Number of Least-Squares Restraints		235	Note
PLAT883_ALERT_1_G	No Info/Value for _atom_sites_solution_primary .			Please Do !
PLAT933_ALERT_2_G	Number of OMIT Records in Embedded .res File ...		1	Note

2 **ALERT level A** = Most likely a serious problem - resolve or explain
 7 **ALERT level B** = A potentially serious problem, consider carefully

82 **ALERT level C** = Check. Ensure it is not caused by an omission or oversight

48 **ALERT level G** = General information/check it is not something unexpected

14 ALERT type 1 CIF construction/syntax error, inconsistent or missing data

11 ALERT type 2 Indicator that the structure model may be wrong or deficient

5 ALERT type 3 Indicator that the structure quality may be low

108 ALERT type 4 Improvement, methodology, query or suggestion

1 ALERT type 5 Informative message, check

It is advisable to attempt to resolve as many as possible of the alerts in all categories. Often the minor alerts point to easily fixed oversights, errors and omissions in your CIF or refinement strategy, so attention to these fine details can be worthwhile. In order to resolve some of the more serious problems it may be necessary to carry out additional measurements or structure refinements. However, the purpose of your study may justify the reported deviations and the more serious of these should normally be commented upon in the discussion or experimental section of a paper or in the "special_details" fields of the CIF. checkCIF was carefully designed to identify outliers and unusual parameters, but every test has its limitations and alerts that are not important in a particular case may appear. Conversely, the absence of alerts does not guarantee there are no aspects of the results needing attention. It is up to the individual to critically assess their own results and, if necessary, seek expert advice.

Publication of your CIF in IUCr journals

A basic structural check has been run on your CIF. These basic checks will be run on all CIFs submitted for publication in IUCr journals (*Acta Crystallographica*, *Journal of Applied Crystallography*, *Journal of Synchrotron Radiation*); however, if you intend to submit to *Acta Crystallographica Section C* or *E* or *IUCrData*, you should make sure that full publication checks are run on the final version of your CIF prior to submission.

Publication of your CIF in other journals

Please refer to the *Notes for Authors* of the relevant journal for any special instructions relating to CIF submission.

PLATON version of 07/08/2019; check.def file version of 30/07/2019

