

## 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: I

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Bond precision:	= 0.0000 A	Wavelength=0.71359	
Cell:	a=6.8970(2)	b=6.8970(2)	c=6.0553(1)
	alpha=90	beta=90	gamma=90
Temperature:	293 K		
	Calculated	Reported	
Volume	288.042(17)	288.042(13)	
Space group	I 41/a m d:	I 41/a m d	
Hall group	I 4bw 2bw -	-I 4bd;-2	
	As0.42 Dy0.29 Er0.16 Gd0.19		
Moiety formula	Ho0.15 O16 P3.58 Y3.07	?	
	Yb0.14		
	As0.42 Dy0.29 Er0.16 Gd0.19	As0.1 Dy0.07 Er0.04 Gd0.04	
Sum formula	Ho0.15 O16 P3.58 Y3.07	Ho0.04 O4 P0.88 Y0.73	
	Yb0.14	Yb0.03	
Mr	824.33	199.80	
Dx, g cm <sup>-3</sup>	4.752	4.607	
Z	1	4	
Mu (mm <sup>-1</sup> )	23.361	23.449	
F000	377.4	377.0	
F000'	369.45		
h, k, lmax	9, 9, 8	9, 9, 8	
Nref	116	114	
Tmin, Tmax			
Tmin'			

Correction method= Not given

Data completeness= 0.983

Theta(max)= 29.170

R(reflections)= 0.0195( 111)

wR2(reflections)=

wR= 0.0263( 114)

S = 2.590

Npar= 11

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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.

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### Alert level A

EXPT005\_ALERT\_1\_A \_exptl\_crystal\_description is missing

Crystal habit description.

The following tests will not be performed.

CRYSR\_01

PLAT183_ALERT_1_A	Missing	_cell_measurement_reflns_used	Value ....	Please Do !
PLAT184_ALERT_1_A	Missing	_cell_measurement_theta_min	Value .....	Please Do !
PLAT185_ALERT_1_A	Missing	_cell_measurement_theta_max	Value .....	Please Do !
PLAT699_ALERT_1_A	Missing	_exptl_crystal_description	Value .....	Please Do !

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### Alert level B

ABSMU01\_ALERT\_1\_B The ratio of given/expected absorption coefficient lies outside the range 0.95 <> 1.05

Calculated value of mu = 22.209

Value of mu given = 23.449

PLAT043\_ALERT\_1\_B Calculated and Reported Mol. Weight Differ by .. 25.13 Check

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### Alert level C

GOODF01\_ALERT\_2\_C The least squares goodness of fit parameter lies outside the range 0.80 <> 2.00

Goodness of fit given = 2.590

RADNW01\_ALERT\_1\_C The radiation wavelength lies outside the expected range for the supplied radiation type. Expected range 0.71065-0.71075

Wavelength given = 0.71359

PLAT041\_ALERT\_1\_C Calc. and Reported SumFormula Strings Differ Please Check

Calc: As0.11 Dy0.07 Er0.04 Gd0.05 Ho0.04 O4 P0.89 Y0.77 Yb0.03

Rep.: As0.1 Dy0.07 Er0.04 Gd0.04 Ho0.04 O4 P0.88 Y0.

73 Yb0.03

PLAT052\_ALERT\_1\_C Info on Absorption Correction Method Not Given Please Do !

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

PLAT127\_ALERT\_1\_C Implicit Hall Symbol Inconsistent with Explicit -I 4bd;-2 Check

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### Alert level G

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:As.1 Dy.07 Er.04 Gd.04 Ho.04 O4

Atom count from the \_atom\_site data: As0.106 Dy.0734 Er.0408 Gd.0464

CELLZ01\_ALERT\_1\_G Difference between formula and atom\_site contents detected.

CELLZ01\_ALERT\_1\_G ALERT: check formula stoichiometry or atom site occupancies.

From the CIF: `_cell_formula_units_Z` 4  
 From the CIF: `_chemical_formula_sum` As0.1 Dy0.07 Er0.04 Gd0.04 Ho0.04  
 TEST: Compare cell contents of formula and atom\_site data

atom	Z*formula	cif sites	diff
As	0.40	0.42	-0.02
Dy	0.28	0.29	-0.01
Er	0.16	0.16	-0.00
Gd	0.16	0.19	-0.03
Ho	0.16	0.15	0.01
O	16.00	16.00	0.00
P	3.52	3.58	-0.06
Y	2.92	3.07	-0.15
Yb	0.12	0.14	-0.02

PLAT004_ALERT_5_G	Polymeric Structure Found with Maximum Dimension	3	Info
PLAT005_ALERT_5_G	No Embedded Refinement Details Found in the CIF	Please	Do !
PLAT045_ALERT_1_G	Calculated and Reported Z Differ by a Factor ...	0.250	Check
PLAT068_ALERT_1_G	Reported F000 Differs from Calcd (or Missing)...	Please	Check
PLAT120_ALERT_1_G	Reported I41/amd Inconsistent with Explicit	I41/amd	Check
PLAT152_ALERT_1_G	The Supplied and Calc. Volume s.u. Differ by ...	4	Units
PLAT199_ALERT_1_G	Reported <code>_cell_measurement_temperature</code> ..... (K)	293	Check
PLAT200_ALERT_1_G	Reported <code>_diffn_ambient_temperature</code> ..... (K)	293	Check
PLAT300_ALERT_4_G	Atom Site Occupancy of Yb	Constrained at	0.0343 Check
PLAT300_ALERT_4_G	Atom Site Occupancy of Er	Constrained at	0.0408 Check
PLAT300_ALERT_4_G	Atom Site Occupancy of Ho	Constrained at	0.038 Check
PLAT300_ALERT_4_G	Atom Site Occupancy of Dy	Constrained at	0.0734 Check
PLAT300_ALERT_4_G	Atom Site Occupancy of Gd	Constrained at	0.0464 Check
PLAT300_ALERT_4_G	Atom Site Occupancy of Y	Constrained at	0.7671 Check
PLAT300_ALERT_4_G	Atom Site Occupancy of As	Constrained at	0.106 Check
PLAT300_ALERT_4_G	Atom Site Occupancy of P	Constrained at	0.894 Check
PLAT301_ALERT_3_G	Main Residue Disorder .....(Resd 1)	80%	Note
PLAT808_ALERT_5_G	No Parseable SHELXL Style Weighting Scheme Found	Please	Check
PLAT811_ALERT_5_G	No ADDSYM Analysis: Too Many Excluded Atoms ....	!	Info
PLAT883_ALERT_1_G	No Info/Value for <code>_atom_sites_solution_primary</code> .	Please	Do !
PLAT966_ALERT_5_G	Note: Non-Standard (i.e. 2.0) OMIT Threshold of	3.0	Sig(I)
PLAT982_ALERT_1_G	The As-f' = 0.0511 Deviates from IT-value =	0.0499	Check
PLAT982_ALERT_1_G	The Dy-f' = -0.1320 Deviates from IT-value =	-0.1892	Check
PLAT982_ALERT_1_G	The Er-f' = -0.2056 Deviates from IT-value =	-0.2586	Check
PLAT982_ALERT_1_G	The Gd-f' = -0.0996 Deviates from IT-value =	-0.1653	Check
PLAT982_ALERT_1_G	The Ho-f' = -0.1634 Deviates from IT-value =	-0.2175	Check
PLAT982_ALERT_1_G	The P-f' = 0.1048 Deviates from IT-value =	0.1023	Check
PLAT982_ALERT_1_G	The Y-f' = -2.9793 Deviates from IT-value =	-2.7962	Check
PLAT982_ALERT_1_G	The Yb-f' = -0.3326 Deviates from IT-value =	-0.3850	Check
PLAT983_ALERT_1_G	The As-f" = 2.0283 Deviates from IT-Value =	2.0058	Check
PLAT983_ALERT_1_G	The Dy-f" = 4.4885 Deviates from IT-Value =	4.4098	Check
PLAT983_ALERT_1_G	The Er-f" = 5.0438 Deviates from IT-Value =	4.9576	Check
PLAT983_ALERT_1_G	The Gd-f" = 3.9799 Deviates from IT-Value =	3.9035	Check
PLAT983_ALERT_1_G	The Ho-f" = 4.7604 Deviates from IT-Value =	4.6783	Check
PLAT983_ALERT_1_G	The P-f" = 0.0969 Deviates from IT-Value =	0.0942	Check
PLAT983_ALERT_1_G	The Y-f" = 3.5765 Deviates from IT-Value =	3.5667	Check
PLAT983_ALERT_1_G	The Yb-f" = 5.6460 Deviates from IT-Value =	5.5486	Check

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- 5 **ALERT level A** = Most likely a serious problem - resolve or explain  
 2 **ALERT level B** = A potentially serious problem, consider carefully  
 9 **ALERT level C** = Check. Ensure it is not caused by an omission or oversight  
 40 **ALERT level G** = General information/check it is not something unexpected

39 ALERT type 1 CIF construction/syntax error, inconsistent or missing data  
2 ALERT type 2 Indicator that the structure model may be wrong or deficient  
1 ALERT type 3 Indicator that the structure quality may be low  
9 ALERT type 4 Improvement, methodology, query or suggestion  
5 ALERT type 5 Informative message, check

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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.

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**PLATON version of 13/05/2024; check.def file version of 04/05/2024**

