

checkCIF/PLATON report

Structure factors have been supplied for datablock(s) shelx

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: shelx

Bond precision:	Si- O = 0.0093 A	Wavelength=0.71073	
Cell:	a=4.7727 (4)	b=7.7220 (5)	c=9.9878 (8)
	alpha=90	beta=90.425 (7)	gamma=90
Temperature:	?		
	Calculated	Reported	
Volume	368.09 (5)	368.09 (5)	
Space group	P 21/c	P 21/c	
Hall group	-P 2ybc	-P 2ybc	
Moiety formula	Bi0.40 Mn0.47 O20 Si4.48 Y3.60, 3.52 (Be)	?	
Sum formula	Be3.52 Bi0.40 Mn0.47 O20 Si4.48 Y3.60	Be3.52 H4 Bi0.40 Ca0 Mn0.48 O20 Si4.48 Y3.60	
Mr	907.14	911.63	
Dx, g cm ⁻³	4.092	4.113	
Z	1	1	
Mu (mm ⁻¹)	19.690	19.698	
F000	422.2	426.0	
F000'	411.47		
h, k, lmax	6, 10, 13	6, 10, 13	
Nref	1012	897	
Tmin, Tmax	0.681, 0.674		
Tmin'	0.668		

Correction method= Not given

Data completeness= 0.886

Theta (max)= 29.268

R(reflections)= 0.0631 (658)

wR2(reflections)=
0.1433 (897)

S = 1.027

Npar= 77

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 C**

PLAT041_ALERT_1_C	Calc. and Reported SumFormula	Strings Differ	Please Check
PLAT043_ALERT_1_C	Calculated and Reported Mol. Weight	Differ by ..	4.49 Check
PLAT052_ALERT_1_C	Info on Absorption Correction Method	Not Given	Please Do !
PLAT068_ALERT_1_C	Reported F000 Differs from Calcd (or Missing)...		Please Check
PLAT077_ALERT_4_C	Unitcell Contains Non-integer Number of Atoms ..		Please Check
PLAT906_ALERT_3_C	Large K Value in the Analysis of Variance		5.487 Check
PLAT906_ALERT_3_C	Large K Value in the Analysis of Variance		2.266 Check
PLAT975_ALERT_2_C	Check Calcd Resid. Dens.	1.07Ang From O5	. 0.70 eA-3
PLAT976_ALERT_2_C	Check Calcd Resid. Dens.	0.63Ang From O2	. -0.81 eA-3
PLAT976_ALERT_2_C	Check Calcd Resid. Dens.	1.04Ang From O3	. -0.69 eA-3
PLAT976_ALERT_2_C	Check Calcd Resid. Dens.	0.91Ang From O5	. -0.66 eA-3

● **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:H4 Be3.52 Bi0.4 Mn0.48 O20 Si4.4
Atom count from the _atom_site data: Be3.52 Bi0.4 Mn0.4716 O20 Si4.48

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 Be3.52 H4 Bi0.40 Ca0 Mn0.48 O20 Si

TEST: Compare cell contents of formula and atom_site data

atom	Z*formula	cif sites	diff
Be	3.52	3.52	0.00
H	4.00	0.00	4.00
Bi	0.40	0.40	0.00
Ca	1.00	0.00	1.00
Mn	0.48	0.47	0.01
O	20.00	20.00	0.00
Si	4.48	4.48	0.00
Y	3.60	3.60	0.00

PLAT004_ALERT_5_G	Polymeric Structure Found with Maximum Dimension		3 Info
PLAT083_ALERT_2_G	SHELXL Second Parameter in WGHT Unusually Large		11.94 Why ?
PLAT168_ALERT_4_G	The CIF-Embedded .res File Contains EXYZ Records		2 Report
PLAT171_ALERT_4_G	The CIF-Embedded .res File Contains EADP Records		2 Report
PLAT300_ALERT_4_G	Atom Site Occupancy of Bi1	Constrained at	0.1 Check
PLAT300_ALERT_4_G	Atom Site Occupancy of Y1	Constrained at	0.9 Check
PLAT300_ALERT_4_G	Atom Site Occupancy of Mn1	Constrained at	0.2358 Check
PLAT300_ALERT_4_G	Atom Site Occupancy of Si2	Constrained at	0.12 Check
PLAT300_ALERT_4_G	Atom Site Occupancy of Be2	Constrained at	0.88 Check
PLAT301_ALERT_3_G	Main Residue Disorder	(Resd 1)	18% Note
PLAT302_ALERT_4_G	Anion/Solvent/Minor-Residue Disorder	(Resd 2)	100% Note
PLAT883_ALERT_1_G	No Info/Value for _atom_sites_solution_primary .		Please Do !
PLAT912_ALERT_4_G	Missing # of FCF Reflections Above STh/L=	0.600	115 Note
PLAT941_ALERT_3_G	Average HKL Measurement Multiplicity		4.1 Low
PLAT965_ALERT_2_G	The SHELXL WEIGHT Optimisation has not Converged		Please Check

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

7 ALERT type 1 CIF construction/syntax error, inconsistent or missing data
7 ALERT type 2 Indicator that the structure model may be wrong or deficient
4 ALERT type 3 Indicator that the structure quality may be low
10 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.

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