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: Al - F = 0.0122 AWavelength=0.71073 Cell: a=7.6754(3) b=7.4443(4) c=9.2870(5)beta=93.928(5) alpha=90 gamma=90 293 K Temperature: Calculated Reported Volume 529.39(5) 529.39(5) Space group C 2/m C 2/m Hall group -C 2y -C 2y Moiety formula Al2 F14 Pb2, 2(Ca) ? Sum formula Al2 Ca2 F14 Pb2 Al Ca F7 Pb Mr 814.52 407.25 5.110 5.095 Dx,g cm-3 Ζ 2 4 33.079 Mu (mm-1) 33.079 712.0 F000 712.0 F000′ 701.08 h,k,lmax 11,10,13 11,10,13 Nref 949 911 Tmin,Tmax 0.342,0.848 0.436,1.000 Tmin′ 0.224 Correction method= # Reported T Limits: Tmin=0.436 Tmax=1.000 AbsCorr = MULTI-SCAN Data completeness= 0.960 Theta(max) = 31.572wR2(reflections) = R(reflections) = 0.0561(849)0.1572 (911) S = 1.192Npar= 58

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

DIFMX02_ALERT_1_C The maximum difference density is > 0.1*ZMAX*0.75 The relevant atom site should be identified. PLAT094_ALERT_2_C Ratio of Maximum / Minimum Residual Density 2.13 Report PLAT097_ALERT_2_C Large Reported Max. (Positive) Residual Density 7.63 eA-3

Alert level G

PLAT004_ALERT_5_G Polymeric Structure Found with Maximum Dimension	3	Info
PLAT045_ALERT_1_G Calculated and Reported Z Differ by a Factor	0.500	Check
PLAT083_ALERT_2_G SHELXL Second Parameter in WGHT Unusually Large	103.75	Why ?
PLAT171_ALERT_4_G The CIF-Embedded .res File Contains EADP Records	1	Report
PLAT199_ALERT_1_G Reported _cell_measurement_temperature (K)	293	Check
PLAT200_ALERT_1_G Reporteddiffrn_ambient_temperature (K)	293	Check
PLAT301_ALERT_3_G Main Residue Disorder(Resd 1)	19%	Note
PLAT720_ALERT_4_G Number of Unusual/Non-Standard Labels	2	Note
Ca02 A103		
PLAT870_ALERT_4_G ALERTS Related to Twinning Effects Suppressed	!	Info
PLAT883_ALERT_1_G No Info/Value for _atom_sites_solution_primary .	Please	Do !
PLAT899_ALERT_4_G SHELXL2018 is Deprecated and Succeeded by SHELXL	2019/3	Note
PLAT912_ALERT_4_G Missing # of FCF Reflections Above STh/L= 0.600	38	Note
PLAT930_ALERT_2_G FCF-based Twin Law (0001) Est.d BASF	0.13	Check
PLAT931_ALERT_5_G CIFcalcFCF Twin Law (0001) Est.d BASF	0.15	Check
PLAT965_ALERT_2_G The SHELXL WEIGHT Optimisation has not Converged	Please	Check
PLAT969_ALERT_5_G The 'Henn et al.' R-Factor-gap value	6.124	Note
Predicted wR2: Based on SigI**2 2.57 or SHELX Weight 1	3.19	

```
0 ALERT level A = Most likely a serious problem - resolve or explain
0 ALERT level B = A potentially serious problem, consider carefully
3 ALERT level C = Check. Ensure it is not caused by an omission or oversight
16 ALERT level G = General information/check it is not something unexpected
5 ALERT type 1 CIF construction/syntax error, inconsistent or missing data
5 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
5 ALERT type 4 Improvement, methodology, query or suggestion
3 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 13/05/2024; check.def file version of 04/05/2024

Datablock shelx - ellipsoid plot

