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: cherokeeite

```
Bond precision:   S- O = 0.0145 A          Wavelength=0.71075

Cell:             a=17.1697(7)     b=6.47173(19)       c=17.5304(12)
                  alpha=90         beta=115.440(8)     gamma=90
Temperature:      293 K

                 Calculated                Reported
Volume           1759.06(19)               1759.06(19)
Space group      P 21/n                    P 21/n
Hall group       -P 2yn                    -P 2yn
Moiety formula   O32 Pb8 S4 Zn4, 4(O)      ?
Sum formula      O36 Pb8 S4 Zn4            H6 O9 Pb2 S Zn
Mr               2623.40                   661.86
Dx,g cm-3        4.953                     4.998
Z                2                         8
Mu (mm-1)        41.151                    41.153
F000             2256.0                    2304.0
F000'            2211.65
h,k,lmax         20,7,20                   20,7,20
Nref             3105                      3091
Tmin,Tmax        0.010,0.085               0.488,1.000
Tmin'            0.005

Correction method= # Reported T Limits: Tmin=0.488 Tmax=1.000
AbsCorr = MULTI-SCAN

Data completeness= 0.995           Theta(max)= 25.027

R(reflections)= 0.0425( 2681)                wR2(reflections)=
                                             0.1107( 3091)
S = 1.098                  Npar= 236
```

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 B

```
PLAT220_ALERT_2_B NonSolvent   Resd 1  O   Ueq(max)/Ueq(min) Range        7.0 Ratio
PLAT242_ALERT_2_B Low    'MainMol' Ueq as Compared to Neighbors of         S2 Check
PLAT306_ALERT_2_B Isolated Oxygen Atom (H-atoms Missing ?) .......        Ow1 Check
PLAT306_ALERT_2_B Isolated Oxygen Atom (H-atoms Missing ?) .......        Ow2 Check
```

Alert level C

```
PLAT031_ALERT_4_C Refined Extinction Parameter Within Range of ...      3.000 Sigma
PLAT041_ALERT_1_C Calc. and Reported SumFormula    Strings  Differ     Please Check
PLAT043_ALERT_1_C Calculated and Reported Mol. Weight Differ by ..      24.04 Check
PLAT068_ALERT_1_C Reported F000 Differs from Calcd (or Missing)...     Please Check
PLAT213_ALERT_2_C Atom O6              has ADP max/min Ratio .....        3.8 prolat
PLAT241_ALERT_2_C High   'MainMol' Ueq as Compared to Neighbors of         O1 Check
PLAT242_ALERT_2_C Low    'MainMol' Ueq as Compared to Neighbors of         S1 Check
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Alert level G

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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:H6 O9 Pb2 S1 Zn1
           Atom count from the _atom_site data:  O9 Pb2 S1 Zn1
CELLZ01_ALERT_1_G Difference between formula and atom_site contents detected.
CELLZ01_ALERT_1_G WARNING: H atoms missing from atom site list. Is this intentional?
          From the CIF: _cell_formula_units_Z    8
          From the CIF: _chemical_formula_sum  H6 O9 Pb2 S Zn
          TEST: Compare cell contents of formula and atom_site data

          atom    Z*formula  cif sites diff
          H         48.00      0.00   48.00
          O         72.00     72.00    0.00
          Pb        16.00     16.00    0.00
          S          8.00      8.00    0.00
          Zn         8.00      8.00    0.00
PLAT002_ALERT_2_G Number of Distance or Angle Restraints on AtSite         5 Note
PLAT004_ALERT_5_G Polymeric Structure Found with Maximum Dimension         3 Info
PLAT045_ALERT_1_G Calculated and Reported Z Differ by a Factor ...    0.2500 Check
PLAT083_ALERT_2_G SHELXL Second Parameter in WGHT  Unusually Large     24.35 Why ?
PLAT172_ALERT_4_G The CIF-Embedded .res File Contains DFIX Records         4 Report
PLAT199_ALERT_1_G Reported _cell_measurement_temperature ..... (K)       293 Check
PLAT200_ALERT_1_G Reported   _diffrn_ambient_temperature ..... (K)       293 Check
PLAT720_ALERT_4_G Number of Unusual/Non-Standard Labels ..........        10 Note
PLAT860_ALERT_3_G Number of Least-Squares Restraints .............        4 Note
PLAT883_ALERT_1_G No Info/Value for _atom_sites_solution_primary .     Please Do !
PLAT933_ALERT_2_G Number of HKL-OMIT Records in Embedded .res File         3 Note
PLAT941_ALERT_3_G Average HKL Measurement Multiplicity ...........       4.0 Low
PLAT965_ALERT_2_G The SHELXL WEIGHT Optimisation has not Converged     Please Check
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0 **ALERT level A** = Most likely a serious problem - resolve or explain

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  4 ALERT level B = A potentially serious problem, consider carefully
  7 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

  9 ALERT type 1 CIF construction/syntax error, inconsistent or missing data
 12 ALERT type 2 Indicator that the structure model may be wrong or deficient
  2 ALERT type 3 Indicator that the structure quality may be low
  3 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 20/01/2022; check.def file version of 19/01/2022

Datablock cherokeeite - ellipsoid plot