

data_vmxl_190k_abs

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_chemical_name_common ?
_chemical_melting_point ?
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'H B Ca O5 Si'
_chemical_formula_weight 159.99

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_atom_type_scatter_dispersion_real
_atom_type_scatter_dispersion_imag
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'H' 'H' 0.0000 0.0000
'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'
'B' 'B' 0.0013 0.0007
'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'
'O' 'O' 0.0106 0.0060
'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'
'Si' 'Si' 0.0817 0.0704
'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'
'Ca' 'Ca' 0.2262 0.3064
'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'

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loop_
_symmetry_equiv_pos_as_xyz
'x, y, z'
'-x, y+1/2, -z+1/2'
'-x, -y, -z'
'x, -y-1/2, z-1/2'

_cell_length_a 4.83080(10)
_cell_length_b 7.60110(10)
_cell_length_c 9.6290(2)
_cell_angle_alpha 90.00
_cell_angle_beta 90.176(2)
_cell_angle_gamma 90.00
_cell_volume 353.569(11)
_cell_formula_units_Z 4
_cell_measurement_temperature 463(2)
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_cell_measurement_theta_max      ?

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_exptl_crystal_F_000            320
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_diffn_reflns_av_sigmaI/netI    0.0247
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_diffn_reflns_limit_k_min       -13
_diffn_reflns_limit_k_max       13
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_diffn_reflns_limit_l_max       17
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_computing_data_reduction       ?
_computing_structure_solution   ?
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_computing_molecular_graphics ?
_computing_publication_material ?

_refine_special_details

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Refinement of F^2 against ALL reflections. The weighted R-factor wR and goodness of fit S are based on F^2 , conventional R-factors R are based on F, with F set to zero for negative F^2 . The threshold expression of $F^2 > 2\sigma(F^2)$ is used only for calculating R-factors(gt) etc. and is not relevant to the choice of reflections for refinement. R-factors based on F^2 are statistically about twice as large as those based on F, and R-factors based on ALL data will be even larger.

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'calc w=1/[\s^2^(Fo^2)+(0.0100P)^2+0.0000P] where P=(Fo^2+2Fc^2)/3'
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_atom_sites_solution_secondary difmap
_atom_sites_solution_hydrogens geom
_refine_ls_hydrogen_treatment mixed
_refine_ls_extinction_method SHELXL
_refine_ls_extinction_coef 0.035(2)
_refine_ls_extinction_expression
'Fc^*=kFc[1+0.001xFc^2\l^3/sin(2\q)]^-1/4^'
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loop_

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_atom_site_fract_z
_atom_site_U_iso_or_equiv
_atom_site_adp_type
_atom_site_occupancy
_atom_site_symmetry_multiplicity
_atom_site_calc_flag
_atom_site_refinement_flags
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_atom_site_disorder_group

Ca Ca 0.99179(3) 0.106263(19) 0.336047(16) 0.00445(4) Uani 1 1 d . . .

Si Si 0.46940(4) 0.26645(3) 0.08429(2) 0.00310(5) Uani 1 1 d . . .
 B B 0.56919(18) 0.41076(11) 0.34073(9) 0.00410(13) Uani 1 1 d . . .
 O1 O 0.24095(12) 0.40161(7) 0.03728(6) 0.00537(10) Uani 1 1 d . . .
 O2 O 0.67107(12) 0.30114(7) 0.45756(6) 0.00477(9) Uani 1 1 d . . .
 O3 O 0.67594(12) 0.33462(7) 0.21057(6) 0.00464(9) Uani 1 1 d . . .
 O4 O 0.31449(12) 0.08821(7) 0.14588(6) 0.00514(10) Uani 1 1 d . . .
 O5 O 0.25875(12) 0.41335(8) 0.33644(7) 0.00545(10) Uani 1 1 d . . .
 H H 0.203(3) 0.4463(18) 0.4099(17) 0.024(4) Uiso 1 1 d . . .

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 _atom_site_aniso_U_23
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 Si 0.00375(9) 0.00321(8) 0.00234(9) -0.00017(6) 0.00009(7) 0.00020(6)
 B 0.0044(3) 0.0042(3) 0.0037(3) 0.0001(2) 0.0001(2) -0.0001(2)
 O1 0.0059(2) 0.0053(2) 0.0049(2) -0.00026(17) -0.00043(18) 0.00156(17)
 O2 0.0053(2) 0.0055(2) 0.0035(2) 0.00147(17) 0.00061(17) 0.00046(17)
 O3 0.0051(2) 0.0060(2) 0.0028(2) -0.00111(17) 0.00009(17) 0.00003(17)
 O4 0.0058(2) 0.0037(2) 0.0059(2) 0.00063(17) 0.00179(18) 0.00009(16)
 O5 0.0041(2) 0.0076(2) 0.0047(2) -0.00088(18) 0.00026(18) 0.00055(17)

_geom_special_details
 ;
 All esds (except the esd in the dihedral angle between two l.s. planes)
 are estimated using the full covariance matrix. The cell esds are taken
 into account individually in the estimation of esds in distances, angles
 and torsion angles; correlations between esds in cell parameters are only
 used when they are defined by crystal symmetry. An approximate (isotropic)
 treatment of cell esds is used for estimating esds involving l.s. planes.
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 _geom_bond_atom_site_label_2
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 Ca O1 2.2788(6) 4_666 ?
 Ca O4 2.4124(6) 1_655 ?
 Ca O2 2.4444(6) . ?
 Ca O5 2.5221(6) 2_645 ?
 Ca O3 2.6056(6) . ?
 Ca O3 2.6543(6) 2_745 ?
 Ca O5 2.6668(6) 1_655 ?
 Si O1 1.5733(6) . ?
 Si O2 1.6461(6) 4_565 ?
 Si O3 1.6538(6) . ?
 Si O4 1.6582(6) . ?

B O4 1.4668(10) 2_655 ?
 B O3 1.4750(11) . ?
 B O2 1.4827(10) . ?
 B O5 1.5002(10) . ?
 O1 Ca 2.2760(6) 2_655 ?
 O1 Ca 2.2788(6) 4_465 ?
 O2 Si 1.6461(6) 4_566 ?
 O3 Ca 2.6543(6) 2_755 ?
 O4 B 1.4668(10) 2_645 ?
 O4 Ca 2.4124(6) 1_455 ?
 O5 Ca 2.5221(6) 2_655 ?
 O5 Ca 2.6668(6) 1_455 ?

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 O1 Ca O4 133.58(2) 2_645 1_655 ?
 O1 Ca O4 107.64(2) 4_666 1_655 ?
 O1 Ca O2 80.96(2) 2_645 . ?
 O1 Ca O2 86.72(2) 4_666 . ?
 O4 Ca O2 144.08(2) 1_655 . ?
 O1 Ca O5 73.66(2) 2_645 2_645 ?
 O1 Ca O5 142.73(2) 4_666 2_645 ?
 O4 Ca O5 77.11(2) 1_655 2_645 ?
 O2 Ca O5 111.34(2) . 2_645 ?
 O1 Ca O3 114.48(2) 2_645 . ?
 O1 Ca O3 135.96(2) 4_666 . ?
 O4 Ca O3 93.713(19) 1_655 . ?
 O2 Ca O3 56.437(19) . . ?
 O5 Ca O3 78.629(19) 2_645 . ?
 O1 Ca O3 81.89(2) 2_645 2_745 ?
 O1 Ca O3 78.771(19) 4_666 2_745 ?
 O4 Ca O3 55.589(18) 1_655 2_745 ?
 O2 Ca O3 159.53(2) . 2_745 ?
 O5 Ca O3 74.074(18) 2_645 2_745 ?
 O3 Ca O3 142.497(9) . 2_745 ?
 O1 Ca O5 146.84(2) 2_645 1_655 ?
 O1 Ca O5 76.562(19) 4_666 1_655 ?
 O4 Ca O5 74.765(19) 1_655 1_655 ?
 O2 Ca O5 77.064(19) . 1_655 ?
 O5 Ca O5 137.809(13) 2_645 1_655 ?
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 O1 Si O3 115.34(3) . . ?
 O2 Si O3 106.60(3) 4_565 . ?
 O1 Si O4 108.63(3) . . ?
 O2 Si O4 106.19(3) 4_565 . ?

O3 Si O4 105.37(3) . . ?
 O4 B O3 107.49(7) 2_655 . ?
 O4 B O2 108.90(6) 2_655 . ?
 O3 B O2 107.94(6) . . ?
 O4 B O5 111.90(6) 2_655 . ?
 O3 B O5 109.50(6) . . ?
 O2 B O5 110.96(7) . . ?
 Si O1 Ca 129.74(3) . 2_655 ?
 Si O1 Ca 126.56(3) . 4_465 ?
 Ca O1 Ca 102.31(2) 2_655 4_465 ?
 B O2 Si 122.82(5) . 4_566 ?
 B O2 Ca 100.76(5) . . ?
 Si O2 Ca 122.90(3) 4_566 . ?
 B O3 Si 122.41(5) . . ?
 B O3 Ca 94.19(4) . . ?
 Si O3 Ca 118.90(3) . . ?
 B O3 Ca 92.96(4) . 2_755 ?
 Si O3 Ca 118.90(3) . 2_755 ?
 Ca O3 Ca 104.068(19) . 2_755 ?
 B O4 Si 127.56(5) 2_645 . ?
 B O4 Ca 103.53(5) 2_645 1_455 ?
 Si O4 Ca 121.22(3) . 1_455 ?
 B O5 Ca 120.23(5) . 2_655 ?
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 Ca O5 Ca 106.07(2) 2_655 1_455 ?

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