

data\_gold

\_audit\_creation\_method SHELXL-97

\_chemical\_name\_systematic

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;

\_chemical\_name\_common ?

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\_chemical\_formula\_weight 515.13

loop\_

\_atom\_type\_symbol

\_atom\_type\_description

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'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'

'V' 'V' 0.3005 0.5294

'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'

'Mn' 'Mn' 0.3368 0.7283

'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'

'Al' 'Al' 0.0645 0.0514

'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'

'Cr' 'Cr' 0.3209 0.6236

'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'

\_symmetry\_cell\_setting ?

\_symmetry\_space\_group\_name\_H-M ?

loop\_

\_symmetry\_equiv\_pos\_as\_xyz

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'z, x, y'

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

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

'y, z, x'

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

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_diffrn_reflns_limit_k_max    15
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_computing_cell_refinement    ?
_computing_data_reduction     ?
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_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 > 2sigma(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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;

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\_refine\_ls\_weighting\_scheme calc  
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'calc w=1/[s^2^(Fo^2^)+(0.0175P)^2^+3.4874P] where P=(Fo^2^+2Fc^2^)/3'  
\_atom\_sites\_solution\_primary direct  
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\_atom\_sites\_solution\_hydrogens geom  
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'Fc^\*^=kFc[1+0.001xFc^2^|I^3^/sin(2\q)]^-1/4^'  
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\_refine\_ls\_R\_factor\_gt 0.0209  
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loop\_

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\_atom\_site\_fract\_z  
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\_atom\_site\_adp\_type  
\_atom\_site\_occularity  
\_atom\_site\_symetry\_multiplicity  
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Ca Ca 0.1250 0.0000 0.2500 0.00736(14) Uani 0.927(1) 4 d SP ..

Mn Mn 0.1250 0.0000 0.2500 0.00736(14) Uani 0.057(1) 4 d SP ..

V V 0.0000 0.0000 0.0000 0.00539(14) Uani 0.810(1) 6 d SP ..

Al Al 0.0000 0.0000 0.0000 0.00539(14) Uani 0.110(1) 6 d SP ..

Cr Cr 0.0000 0.0000 0.0000 0.00539(14) Uani 0.080(1) 6 d SP ..

Si Si 0.3750 0.0000 0.2500 0.00559(16) Uani 1 4 d S ..

O O 0.03916(8) 0.04789(8) 0.65493(8) 0.0084(2) Uani 1 1 d ...

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Mn 0.0053(2) 0.00840(17) 0.00840(17) 0.00141(17) 0.000 0.000  
V 0.00539(14) 0.00539(14) 0.00539(14) 0.00009(10) 0.00009(10) 0.00009(10)  
Al 0.00539(14) 0.00539(14) 0.00539(14) 0.00009(10) 0.00009(10) 0.00009(10)  
Cr 0.00539(14) 0.00539(14) 0.00539(14) 0.00009(10) 0.00009(10) 0.00009(10)  
Si 0.0060(3) 0.0054(2) 0.0054(2) 0.000 0.000 0.000  
O 0.0085(4) 0.0087(4) 0.0080(4) 0.0000(3) -0.0004(3) 0.0002(3)

\_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.

;

loop\_

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\_geom\_bond\_atom\_site\_label\_2

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Ca O 2.3533(10) 67\_656 ?

Ca O 2.3533(10) 49\_556 ?

Ca O 2.5022(10) 70\_656 ?

Ca O 2.5022(10) 55\_556 ?

Ca O 2.5022(10) 80\_455 ?

Ca O 2.5022(10) 93\_655 ?

Ca Si 3.0070(2) . ?

Ca Si 3.0070(2) 50\_556 ?

Ca V 3.3619(3) . ?

V O 2.0065(10) 80\_455 ?

V O 2.0065(10) 32\_544 ?

V O 2.0065(10) 76\_554 ?

V O 2.0065(10) 28\_445 ?

V O 2.0065(10) 84\_545 ?

V O 2.0065(10) 36\_454 ?

V Ca 3.3619(3) 9 ?

V Ca 3.3619(3) 53 ?

V Ca 3.3619(3) 5 ?

V Ca 3.3619(3) 49 ?

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Si O 1.6449(10) 27\_545 ?

Si O 1.6449(10) 67\_656 ?

Si O 1.6449(10) 2\_554 ?

Si O 1.6449(10) 90\_565 ?

Si Ca 3.0070(2) 50\_656 ?

Si Mn 3.0070(2) 50\_656 ?  
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O Ca 2.3533(10) 49\_556 ?  
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O V O 88.93(4) 32\_544 84\_545 ?  
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O V Ca 94.68(3) 32\_544 57 ?  
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Ca V Ca 113.6 5 57 ?  
Ca V Ca 66.4 49 57 ?  
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Ca Si Ca 180.0 50\_656 . ?  
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Si O Al 133.83(6) 2 28\_445 ?

Cr O Al 0.0 28\_445 28\_445 ?  
Si O V 133.83(6) 2 28\_445 ?  
Cr O V 0.0 28\_445 28\_445 ?  
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Si O Ca 95.92(4) 2 49\_556 ?  
Cr O Ca 100.61(4) 28\_445 49\_556 ?  
Al O Ca 100.61(4) 28\_445 49\_556 ?  
V O Ca 100.61(4) 28\_445 49\_556 ?  
Si O Mn 95.92(4) 2 49\_556 ?  
Cr O Mn 100.61(4) 28\_445 49\_556 ?  
Al O Mn 100.61(4) 28\_445 49\_556 ?  
V O Mn 100.61(4) 28\_445 49\_556 ?  
Ca O Mn 0.0 49\_556 49\_556 ?  
Si O Mn 123.94(5) 2 58\_566 ?  
Cr O Mn 95.80(4) 28\_445 58\_566 ?  
Al O Mn 95.80(4) 28\_445 58\_566 ?  
V O Mn 95.80(4) 28\_445 58\_566 ?  
Ca O Mn 98.61(4) 49\_556 58\_566 ?  
Mn O Mn 98.61(4) 49\_556 58\_566 ?  
Si O Ca 123.94(5) 2 58\_566 ?  
Cr O Ca 95.80(4) 28\_445 58\_566 ?  
Al O Ca 95.80(4) 28\_445 58\_566 ?  
V O Ca 95.80(4) 28\_445 58\_566 ?  
Ca O Ca 98.61(4) 49\_556 58\_566 ?  
Mn O Ca 98.61(4) 49\_556 58\_566 ?  
Mn O Ca 0.0 58\_566 58\_566 ?

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