

Electronic Supplementary Information

Conformation Versus Cohesion in the Relative Stabilities of Gabapentin Polymorphs

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Table 1. Single-crystal X-ray diffraction data for gabapentin Form II, taken at 90 K.

Table 2. Single-crystal X-ray diffraction data for gabapentin Form III, taken at 90 K.

Table 1. Single-crystal X-ray diffraction data for gabapentin Form II, taken at 90 K.

```
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_chemical_formula_sum          'C9 H17 N O2'
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_atom_type_scatter_source
'C' 'C' 0.0033 0.0016
'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'
'H' 'H' 0.0000 0.0000
'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'
'N' 'N' 0.0061 0.0033
'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'

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

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_cell_angle_beta               90.199(8)
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_computing_data_reduction           'Bruker SAINT (Bruker, 2011) '
_computing_structure_solution       'SHELXS-97 (Sheldrick, 2008) '
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_computing_publication_material 'Bruker SHELXTL (Bruker, 2011)'  
  
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Refinement of F2 against ALL reflections. The weighted R-factor wR  
and  
goodness of fit S are based on F2, conventional R-factors R are  
based  
on F, with F set to zero for negative F2. The threshold expression  
of  
F2 > 2sigma(F2) is used only for calculating R-factors(gt) etc.  
and is  
not relevant to the choice of reflections for refinement. R-factors  
based  
on F2 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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_refine_ls_weighting_scheme calc  
_refine_ls_weighting_details  
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P=(Fo2+2Fc2)/3'  
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_atom_sites_solution_secondary difmap  
_atom_sites_solution_hydrogens geom  
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_refine_ls_number_parameters 118  
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_atom_site_fract_y  
_atom_site_fract_z  
_atom_site_U_iso_or_equiv
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_atom_site_disorder_assembly
_atom_site_disorder_group
O1 O 0.96862(17) 0.32910(15) 0.57540(5) 0.0175(3) Uani 1 1 d . . .
O2 O 0.67223(17) 0.22265(14) 0.52208(4) 0.0153(3) Uani 1 1 d . . .
N1 N 0.7760(2) 0.83476(19) 0.51471(6) 0.0129(3) Uani 1 1 d . . .
C1 C 0.6759(2) 0.9156(2) 0.72856(7) 0.0167(3) Uani 1 1 d . . .
H13 H 0.5664 0.8381 0.7522 0.020 Uiso 1 1 calc R . .
H12 H 0.7192 1.0298 0.7528 0.020 Uiso 1 1 calc R . .
C2 C 0.8883(2) 0.7943(2) 0.71542(7) 0.0169(3) Uani 1 1 d . . .
H15 H 0.9546 0.7479 0.7538 0.020 Uiso 1 1 calc R . .
H14 H 1.0035 0.8757 0.6952 0.020 Uiso 1 1 calc R . .
C3 C 0.8305(2) 0.6206(2) 0.67523(6) 0.0143(3) Uani 1 1 d . . .
H16 H 0.7342 0.5300 0.6984 0.017 Uiso 1 1 calc R . .
H17 H 0.9736 0.5525 0.6651 0.017 Uiso 1 1 calc R . .
C4 C 0.7053(2) 0.6733(2) 0.61608(6) 0.0126(3) Uani 1 1 d . . .
C5 C 0.8770(2) 0.7715(2) 0.57376(6) 0.0133(3) Uani 1 1 d . . .
H4 H 0.9420 0.8855 0.5944 0.016 Uiso 1 1 calc R . .
H5 H 1.0034 0.6805 0.5657 0.016 Uiso 1 1 calc R . .
C6 C 0.7634(2) 0.3383(2) 0.55967(6) 0.0126(3) Uani 1 1 d . . .
C7 C 0.6040(2) 0.4903(2) 0.58644(6) 0.0129(3) Uani 1 1 d . . .
H6 H 0.5090 0.4250 0.6170 0.016 Uiso 1 1 calc R . .
H7 H 0.5002 0.5332 0.5539 0.016 Uiso 1 1 calc R . .
C8 C 0.5633(2) 0.9813(2) 0.67012(7) 0.0160(3) Uani 1 1 d . . .
H10 H 0.6684 1.0674 0.6480 0.019 Uiso 1 1 calc R . .
H11 H 0.4236 1.0554 0.6795 0.019 Uiso 1 1 calc R . .
C9 C 0.5021(2) 0.8081(2) 0.63063(6) 0.0133(3) Uani 1 1 d . . .
H8 H 0.4365 0.8560 0.5923 0.016 Uiso 1 1 calc R . .
H9 H 0.3829 0.7318 0.6512 0.016 Uiso 1 1 calc R . .
H1 H 0.761(3) 0.970(3) 0.5145(7) 0.016 Uiso 1 1 d . . .
H2 H 0.633(3) 0.786(2) 0.5070(7) 0.016 Uiso 1 1 d . . .
H3 H 0.874(3) 0.794(2) 0.4825(8) 0.016 Uiso 1 1 d . . .
```

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_atom_site_aniso_U_33
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_atom_site_aniso_U_13
_atom_site_aniso_U_12
O1 0.0125(5) 0.0204(6) 0.0196(6) -0.0054(5) -0.0018(4) 0.0030(4)
O2 0.0159(5) 0.0125(5) 0.0176(5) -0.0029(4) -0.0017(4) 0.0003(4)
N1 0.0119(6) 0.0114(7) 0.0154(7) -0.0005(5) 0.0009(5) 0.0004(5)
C1 0.0190(8) 0.0152(8) 0.0159(8) -0.0038(6) 0.0005(6) -0.0003(6)
C2 0.0176(8) 0.0186(8) 0.0146(8) -0.0012(6) -0.0018(6) -0.0002(6)
C3 0.0134(7) 0.0138(7) 0.0156(8) -0.0001(6) 0.0000(6) 0.0011(6)
C4 0.0111(7) 0.0125(7) 0.0143(7) -0.0005(6) 0.0009(6) 0.0003(6)
```

```
C5 0.0121(7) 0.0135(7) 0.0144(7) -0.0004(6) -0.0006(6) 0.0004(6)
C6 0.0145(7) 0.0102(7) 0.0130(7) 0.0020(6) 0.0019(6) -0.0008(6)
C7 0.0109(7) 0.0132(7) 0.0146(8) 0.0004(6) 0.0001(6) -0.0001(6)
C8 0.0152(8) 0.0131(8) 0.0197(8) -0.0010(6) 0.0028(6) 0.0019(6)
C9 0.0124(7) 0.0139(8) 0.0137(7) -0.0002(6) 0.0005(6) 0.0005(6)
```

```
_geom_special_details
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;
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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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;
```

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loop_
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O1 C6 1.2545(18) . ?
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```
O2 C6 1.2735(18) . ?
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```
N1 C5 1.5027(19) . ?
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N1 H1B' 0.938(18) . ?
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N1 H1A' 0.920(18) . ?
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N1 H1C' 0.962(17) . ?
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C1 C8 1.524(2) . ?
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```
C1 C2 1.532(2) . ?
```

```
C1 H1A 0.9900 . ?
```

```
C1 H1B 0.9900 . ?
```

```
C2 C3 1.535(2) . ?
```

```
C2 H2A 0.9900 . ?
```

```
C2 H2B 0.9900 . ?
```

```
C3 C4 1.547(2) . ?
```

```
C3 H3A 0.9900 . ?
```

```
C3 H3B 0.9900 . ?
```

```
C4 C5 1.539(2) . ?
```

```
C4 C7 1.547(2) . ?
```

```
C4 C9 1.550(2) . ?
```

```
C5 H5A 0.9900 . ?
```

```
C5 H5B 0.9900 . ?
```

```
C6 C7 1.530(2) . ?
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C7 H7A 0.9900 . ?
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```
C7 H7B 0.9900 . ?
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C8 C9 1.529(2) . . ?
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C8 H8B 0.9900 . . ?
C9 H9A 0.9900 . . ?
C9 H9B 0.9900 . . ?

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C5 N1 H1A' 114.3(10) . . ?
H1B' N1 H1A' 106.3(14) . . ?
C5 N1 H1C' 109.2(9) . . ?
H1B' N1 H1C' 110.1(14) . . ?
H1A' N1 H1C' 107.5(14) . . ?
C8 C1 C2 110.64(12) . . ?
C8 C1 H1A 109.5 . . ?
C2 C1 H1A 109.5 . . ?
C8 C1 H1B 109.5 . . ?
C2 C1 H1B 109.5 . . ?
H1A C1 H1B 108.1 . . ?
C1 C2 C3 111.24(12) . . ?
C1 C2 H2A 109.4 . . ?
C3 C2 H2A 109.4 . . ?
C1 C2 H2B 109.4 . . ?
C3 C2 H2B 109.4 . . ?
H2A C2 H2B 108.0 . . ?
C2 C3 C4 114.35(12) . . ?
C2 C3 H3A 108.7 . . ?
C4 C3 H3A 108.7 . . ?
C2 C3 H3B 108.7 . . ?
C4 C3 H3B 108.7 . . ?
H3A C3 H3B 107.6 . . ?
C5 C4 C3 108.20(12) . . ?
C5 C4 C7 110.73(12) . . ?
C3 C4 C7 110.42(12) . . ?
C5 C4 C9 111.55(12) . . ?
C3 C4 C9 109.21(12) . . ?
C7 C4 C9 106.74(11) . . ?
N1 C5 C4 113.87(12) . . ?
N1 C5 H5A 108.8 . . ?
C4 C5 H5A 108.8 . . ?
N1 C5 H5B 108.8 . . ?
C4 C5 H5B 108.8 . . ?
H5A C5 H5B 107.7 . . ?
O1 C6 O2 123.48(13) . . ?
O1 C6 C7 120.96(13) . . ?

O2 C6 C7 115.54(12) . . ?
C6 C7 C4 119.67(12) . . ?
C6 C7 H7A 107.4 . . ?
C4 C7 H7A 107.4 . . ?
C6 C7 H7B 107.4 . . ?
C4 C7 H7B 107.4 . . ?
H7A C7 H7B 106.9 . . ?
C1 C8 C9 110.74(12) . . ?
C1 C8 H8A 109.5 . . ?
C9 C8 H8A 109.5 . . ?
C1 C8 H8B 109.5 . . ?
C9 C8 H8B 109.5 . . ?
H8A C8 H8B 108.1 . . ?
C8 C9 C4 114.41(12) . . ?
C8 C9 H9A 108.7 . . ?
C4 C9 H9A 108.7 . . ?
C8 C9 H9B 108.7 . . ?
C4 C9 H9B 108.7 . . ?
H9A C9 H9B 107.6 . . ?

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C1 C2 C3 C4 53.79(16) ?
C2 C3 C4 C5 72.26(15) ?
C2 C3 C4 C7 -166.42(12) ?
C2 C3 C4 C9 -49.35(16) ?
C3 C4 C5 N1 -178.67(11) ?
C7 C4 C5 N1 60.19(15) ?
C9 C4 C5 N1 -58.53(16) ?
O1 C6 C7 C4 20.3(2) ?
O2 C6 C7 C4 -161.00(12) ?
C5 C4 C7 C6 51.03(17) ?
C3 C4 C7 C6 -68.78(16) ?
C9 C4 C7 C6 172.63(12) ?
C2 C1 C8 C9 57.14(16) ?
C1 C8 C9 C4 -55.64(16) ?
C5 C4 C9 C8 -69.14(16) ?
C3 C4 C9 C8 50.42(16) ?
C7 C4 C9 C8 169.79(12) ?

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_refine_diff_density_rms	0.042

Table 2. Single-crystal X-ray diffraction data for gabapentin Form III, taken at 90 K.

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data_cu_data_0ma

_audit_creation_method          SHELXL-97
_chemical_name_systematic
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?
;
_chemical_name_common           'Gabapentin Form III'
_chemical_melting_point         ?
_chemical_formula_moiety        'C9 H17 N O2'
_chemical_formula_sum            'C9 H17 N O2'
_chemical_formula_weight         171.24

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_atom_type_description
_atom_type_scatter_dispersion_real
_atom_type_scatter_dispersion_imag
_atom_type_scatter_source
'C' 'C' 0.0181 0.0091
'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'
'H' 'H' 0.0000 0.0000
'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'
'N' 'N' 0.0311 0.0180
'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'
'O' 'O' 0.0492 0.0322
'International Tables Vol C Tables 4.2.6.8 and 6.1.1.4'

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_symmetry_space_group_name_H-M  P2(1)/c
_symmetry_space_group_name_Hall -P2ybc

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

_cell_length_a                  14.5052(8)
_cell_length_b                   6.6423(4)
_cell_length_c                   9.8052(5)
_cell_angle_alpha                 90.00
_cell_angle_beta                 105.719(3)
_cell_angle_gamma                 90.00
_cell_volume                     909.38(9)
_cell_formula_units_Z             4
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_exptl_absorpt_correction_type     multi-scan
_exptl_absorpt_correction_T_min    0.7816
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_exptl_absorpt_process_details     'SADABS SHELXL-97 (Sheldrick, 2008) '

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;

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_diffn_radiation_source             'fine-focus sealed tube'
_diffn_radiation_monochromator      graphite
_diffn_measurement_device_type      'Bruker APEX-II CCD'
_diffn_measurement_method           '\f and \w scans'
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_diffn_reflns_av_sigmaI/netI        0.0870
_diffn_reflns_limit_h_min           -17
_diffn_reflns_limit_h_max           17
_diffn_reflns_limit_k_min           -7
_diffn_reflns_limit_k_max           7
_diffn_reflns_limit_l_min           -11
_diffn_reflns_limit_l_max           11
_diffn_reflns_theta_min             6.34
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_reflns_threshold_expression         >2sigma(I)

_computing_data_collection          'Bruker APEX2 (Bruker, 2011) '
_computing_cell_refinement          'Bruker SAINT (Bruker, 2011) '
_computing_data_reduction           'Bruker SAINT (Bruker, 2011) '
_computing_structure_solution       'SHELXS-97 (Sheldrick, 2008) '
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_computing_molecular_graphics 'CrystalMaker (Palmer, 2010)'  
_computing_publication_material 'Bruker SHELXTL(Bruker,2011)'  
  
_refine_special_details  
;  
Refinement of F2 against ALL reflections. The weighted R-factor wR  
and  
goodness of fit S are based on F2, conventional R-factors R are  
based  
on F, with F set to zero for negative F2. The threshold expression  
of  
F2 > 2sigma(F2) is used only for calculating R-factors(gt) etc.  
and is  
not relevant to the choice of reflections for refinement. R-factors  
based  
on F2 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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_refine_ls_matrix_type full  
_refine_ls_weighting_scheme calc  
_refine_ls_weighting_details  
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P=(Fo2+2Fc2)/3'  
_atom_sites_solution_primary direct  
_atom_sites_solution_secondary difmap  
_atom_sites_solution_hydrogens geom  
_refine_ls_hydrogen_treatment mixed  
_refine_ls_extinction_method none  
_refine_ls_extinction_coef ?  
_refine_ls_number_reflns 1580  
_refine_ls_number_parameters 110  
_refine_ls_number_restraints 100  
_refine_ls_R_factor_all 0.0548  
_refine_ls_R_factor_gt 0.0518  
_refine_ls_wR_factor_ref 0.1428  
_refine_ls_wR_factor_gt 0.1392  
_refine_ls_goodness_of_fit_ref 1.037  
_refine_ls_restrained_S_all 1.004  
_refine_ls_shift/su_max 0.000  
_refine_ls_shift/su_mean 0.000  
  
loop_  
_atom_site_label  
_atom_site_type_symbol  
_atom_site_fract_x  
_atom_site_fract_y  
_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  
_atom_site_disorder_assembly  
_atom_site_disorder_group  
O1 O 0.48142(7) 0.78610(15) 0.58242(10) 0.0196(3) Uani 1 1 d U . .  
O2 O 0.36082(8) 0.56550(16) 0.55220(13) 0.0311(3) Uani 1 1 d U . .  
N1 N 0.41912(8) 1.18867(17) 0.64848(12) 0.0167(3) Uani 1 1 d U . .  
H15 H 0.4506 1.1175 0.5957 0.025 Uiso 1 1 calc R . .  
H17 H 0.4586 1.2085 0.7369 0.025 Uiso 1 1 calc R . .  
H16 H 0.4008 1.3099 0.6066 0.025 Uiso 1 1 calc R . .  
C7 C 0.06786(11) 0.9813(2) 0.32785(16) 0.0247(4) Uani 1 1 d U . .  
H10 H 0.0234 0.9322 0.2387 0.030 Uiso 1 1 calc R . .  
H9 H 0.0303 1.0620 0.3788 0.030 Uiso 1 1 calc R . .  
C6 C 0.14433(10) 1.1144(2) 0.29292(14) 0.0197(4) Uani 1 1 d U . .  
H7 H 0.1764 1.0392 0.2316 0.024 Uiso 1 1 calc R . .  
H8 H 0.1137 1.2349 0.2403 0.024 Uiso 1 1 calc R . .  
C5 C 0.21860(10) 1.1801(2) 0.42786(14) 0.0168(4) Uani 1 1 d U . .  
H6 H 0.1868 1.2630 0.4858 0.020 Uiso 1 1 calc R . .  
H5 H 0.2675 1.2648 0.4021 0.020 Uiso 1 1 calc R . .  
C4 C 0.26836(9) 1.0003(2) 0.51672(13) 0.0153(4) Uani 1 1 d U . .  
C3 C 0.33274(10) 1.0741(2) 0.65874(13) 0.0169(4) Uani 1 1 d U . .  
H4 H 0.2943 1.1611 0.7044 0.020 Uiso 1 1 calc R . .  
H3 H 0.3540 0.9562 0.7211 0.020 Uiso 1 1 calc R . .  
C1 C 0.39526(10) 0.7294(2) 0.52900(14) 0.0172(4) Uani 1 1 d U . .  
C2 C 0.32839(10) 0.8807(2) 0.43452(13) 0.0162(4) Uani 1 1 d U . .  
H2 H 0.2845 0.8084 0.3545 0.019 Uiso 1 1 calc R . .  
H1 H 0.3667 0.9762 0.3948 0.019 Uiso 1 1 calc R . .  
C8 C 0.11267(11) 0.8013(2) 0.41940(15) 0.0224(4) Uani 1 1 d U . .  
H11 H 0.0620 0.7274 0.4490 0.027 Uiso 1 1 calc R . .  
H12 H 0.1406 0.7085 0.3623 0.027 Uiso 1 1 calc R . .  
C9 C 0.19066(10) 0.8656(2) 0.55108(13) 0.0185(4) Uani 1 1 d U . .  
H14 H 0.2215 0.7437 0.6015 0.022 Uiso 1 1 calc R . .  
H13 H 0.1606 0.9396 0.6155 0.022 Uiso 1 1 calc R . .
```

```
loop_  
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_atom_site_aniso_U_11  
_atom_site_aniso_U_22  
_atom_site_aniso_U_33  
_atom_site_aniso_U_23  
_atom_site_aniso_U_13  
_atom_site_aniso_U_12  
O1 0.0214(6) 0.0193(6) 0.0181(5) 0.0019(4) 0.0053(4) 0.0013(4)  
O2 0.0302(6) 0.0136(6) 0.0476(7) 0.0053(5) 0.0075(5) -0.0006(4)  
N1 0.0206(6) 0.0142(7) 0.0156(6) -0.0022(4) 0.0053(5) -0.0007(4)  
C7 0.0217(8) 0.0258(9) 0.0246(7) 0.0028(6) 0.0030(6) -0.0022(6)  
C6 0.0217(7) 0.0186(8) 0.0183(7) 0.0036(5) 0.0046(6) 0.0034(6)  
C5 0.0217(8) 0.0131(7) 0.0175(7) 0.0006(5) 0.0084(6) 0.0012(5)  
C4 0.0195(7) 0.0136(8) 0.0142(6) -0.0003(5) 0.0066(5) -0.0005(5)
```

```
C3 0.0213(7) 0.0166(7) 0.0141(6) 0.0000(5) 0.0072(5) -0.0008(5)
C1 0.0229(8) 0.0133(7) 0.0165(7) -0.0020(5) 0.0070(5) 0.0011(5)
C2 0.0210(7) 0.0146(7) 0.0135(6) -0.0016(5) 0.0056(5) 0.0011(5)
C8 0.0231(8) 0.0210(8) 0.0234(7) 0.0011(5) 0.0068(6) -0.0068(6)
C9 0.0220(8) 0.0179(8) 0.0167(7) 0.0027(5) 0.0070(6) -0.0022(6)
```

```
_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_
```

```
_geom_bond_atom_site_label_1
```

```
_geom_bond_atom_site_label_2
```

```
_geom_bond_distance
```

```
_geom_bond_site_symmetry_2
```

```
_geom_bond_publ_flag
```

```
O1 C1 1.2741(18) . ?
```

```
O2 C1 1.2443(18) . ?
```

```
N1 C3 1.4924(18) . ?
```

```
N1 H1A 0.9100 . ?
```

```
N1 H1B 0.9100 . ?
```

```
N1 H1C 0.9100 . ?
```

```
C7 C6 1.528(2) . ?
```

```
C7 C8 1.530(2) . ?
```

```
C7 H7A 0.9900 . ?
```

```
C7 H7B 0.9900 . ?
```

```
C6 C5 1.5261(19) . ?
```

```
C6 H6A 0.9900 . ?
```

```
C6 H6B 0.9900 . ?
```

```
C5 C4 1.5379(18) . ?
```

```
C5 H5A 0.9900 . ?
```

```
C5 H5B 0.9900 . ?
```

```
C4 C3 1.5320(17) . ?
```

```
C4 C9 1.5460(18) . ?
```

```
C4 C2 1.5555(18) . ?
```

```
C3 H3A 0.9900 . ?
```

```
C3 H3B 0.9900 . ?
```

```
C1 C2 1.5236(19) . ?
```

```
C2 H2A 0.9900 . ?
```

```
C2 H2B 0.9900 . ?
```

C8 C9 1.5290(19) . . ?
C8 H8A 0.9900 . . ?
C8 H8B 0.9900 . . ?
C9 H9A 0.9900 . . ?
C9 H9B 0.9900 . . ?

loop_

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_geom_angle_atom_site_label_3
_geom_angle
_geom_angle_site_symmetry_1
_geom_angle_site_symmetry_3
_geom_angle_publ_flag
C3 N1 H1A 109.5 . . ?
C3 N1 H1B 109.5 . . ?
H1A N1 H1B 109.5 . . ?
C3 N1 H1C 109.5 . . ?
H1A N1 H1C 109.5 . . ?
H1B N1 H1C 109.5 . . ?
C6 C7 C8 111.40(12) . . ?
C6 C7 H7A 109.3 . . ?
C8 C7 H7A 109.3 . . ?
C6 C7 H7B 109.3 . . ?
C8 C7 H7B 109.3 . . ?
H7A C7 H7B 108.0 . . ?
C5 C6 C7 110.83(11) . . ?
C5 C6 H6A 109.5 . . ?
C7 C6 H6A 109.5 . . ?
C5 C6 H6B 109.5 . . ?
C7 C6 H6B 109.5 . . ?
H6A C6 H6B 108.1 . . ?
C6 C5 C4 112.47(11) . . ?
C6 C5 H5A 109.1 . . ?
C4 C5 H5A 109.1 . . ?
C6 C5 H5B 109.1 . . ?
C4 C5 H5B 109.1 . . ?
H5A C5 H5B 107.8 . . ?
C3 C4 C5 110.08(11) . . ?
C3 C4 C9 106.74(10) . . ?
C5 C4 C9 108.36(11) . . ?
C3 C4 C2 110.22(11) . . ?
C5 C4 C2 110.23(10) . . ?
C9 C4 C2 111.14(11) . . ?
N1 C3 C4 114.72(10) . . ?
N1 C3 H3A 108.6 . . ?
C4 C3 H3A 108.6 . . ?
N1 C3 H3B 108.6 . . ?
C4 C3 H3B 108.6 . . ?
H3A C3 H3B 107.6 . . ?
O2 C1 O1 125.52(13) . . ?
O2 C1 C2 117.85(12) . . ?

O1 C1 C2 116.56(12) . . ?
C1 C2 C4 112.05(10) . . ?
C1 C2 H2A 109.2 . . ?
C4 C2 H2A 109.2 . . ?
C1 C2 H2B 109.2 . . ?
C4 C2 H2B 109.2 . . ?
H2A C2 H2B 107.9 . . ?
C9 C8 C7 112.13(12) . . ?
C9 C8 H8A 109.2 . . ?
C7 C8 H8A 109.2 . . ?
C9 C8 H8B 109.2 . . ?
C7 C8 H8B 109.2 . . ?
H8A C8 H8B 107.9 . . ?
C8 C9 C4 113.19(11) . . ?
C8 C9 H9A 108.9 . . ?
C4 C9 H9A 108.9 . . ?
C8 C9 H9B 108.9 . . ?
C4 C9 H9B 108.9 . . ?
H9A C9 H9B 107.8 . . ?

loop_

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_geom_torsion_atom_site_label_2
_geom_torsion_atom_site_label_3
_geom_torsion_atom_site_label_4
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_geom_torsion_site_symmetry_1
_geom_torsion_site_symmetry_2
_geom_torsion_site_symmetry_3
_geom_torsion_site_symmetry_4
_geom_torsion_publ_flag
C8 C7 C6 C5 -54.68(16) ?
C7 C6 C5 C4 58.26(15) ?
C6 C5 C4 C3 -173.07(11) ?
C6 C5 C4 C9 -56.68(13) ?
C6 C5 C4 C2 65.14(14) ?
C5 C4 C3 N1 -69.14(14) ?
C9 C4 C3 N1 173.47(11) ?
C2 C4 C3 N1 52.66(15) ?
O2 C1 C2 C4 80.74(15) ?
O1 C1 C2 C4 -96.41(14) ?
C3 C4 C2 C1 46.18(15) ?
C5 C4 C2 C1 167.90(11) ?
C9 C4 C2 C1 -71.95(14) ?
C6 C7 C8 C9 52.45(16) ?
C7 C8 C9 C4 -53.23(16) ?
C3 C4 C9 C8 172.59(12) ?
C5 C4 C9 C8 54.06(15) ?
C2 C4 C9 C8 -67.20(15) ?

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_diffraction_reflns_theta_full 66.59

_diffraction_measured_fraction_theta_full	0.986
_refine_diff_density_max	0.340
_refine_diff_density_min	-0.322
_refine_diff_density_rms	0.068