

Electronic Supplementary Material (ESI)

for

## Urea Hydrogen-Bond Donor Strengths: Bigger is not Always Better

Celine Nieuwland,<sup>[a]</sup> Angelina N. van Dam,<sup>[a]</sup>

F. Matthias Bickelhaupt,<sup>[a,b,c]</sup> and Célia Fonseca Guerra\*<sup>[a]</sup>

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- [a] Department of Chemistry and Pharmaceutical Sciences, Amsterdam Institute of Molecular and Life Sciences (AIMMS), Vrije Universiteit Amsterdam, De Boelelaan 1108, 1081 HZ Amsterdam, The Netherlands  
E-mail: [c.fonsecaguerra@vu.nl](mailto:c.fonsecaguerra@vu.nl) | Homepage: <https://www.theochem.nl/>
- [b] Institute for Molecules and Materials, Radboud University, Heyendaalseweg 135, 6525 AJ Nijmegen, The Netherlands
- [c] Department of Chemical Sciences, University of Johannesburg, Auckland Park, Johannesburg 2006, South Africa

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## Method S1. Computational details

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All calculations were performed using the Amsterdam Density Functional (ADF) program as implemented in the Amsterdam Modeling Suite (AMS, version 2023.1).<sup>[S1]</sup> The dispersion-corrected relativistic density functional theory (DFT-D) calculations were performed at the ZORA-BLYP-D3(BJ)<sup>[S2]</sup>/TZ2P level of theory, which has been proven to be adequate for studying these types of hydrogen-bonded systems.<sup>[S3]</sup> The TZ2P basis set<sup>[S1a,b]</sup> consists of an uncontracted set of Slater-type orbitals (STOs) of triple- $\zeta$  quality for all atoms, augmented with two sets of polarization functions. The ZlmFit<sup>[S4a]</sup> density fitting scheme with the Becke<sup>[S4b,c]</sup> integration grid, at “Excellent” quality, was used for geometry optimizations and subsequent (bonding) analyses. All optimized geometries have been checked to be energy minima by performing a vibrational frequency analysis (*i.e.*, no imaginary frequencies for minima, see Data S6 and S7).<sup>[S5]</sup> The ball-and-stick structures of the optimized structures in this work were created using the CYLview20<sup>[S6]</sup> visualization software.

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- [S2] (a) E. van Lenthe, A. Ehlers and E. J. Baerends, *J. Chem. Phys.*, 1999, **110**, 8943; (b) A. D. Becke, *Phys. Rev. A*, 1988, **38**, 3098; (c) C. Lee, W. Yang and R. G. Parr, *Phys. Rev. B*, 1988, **37**, 785; (d) Q. Wu and W. Yang, *J. Chem. Phys.*, 2002, **116**, 515; (e) S. Grimme, *J. Comput. Chem.*, 2004, **25**, 1463; (f) S. Grimme, *J. Comput. Chem.*, 2006, **27**, 1787; (g) S. Grimme, J. Antony, S. Ehrlich and H. Krieg, *J. Chem. Phys.*, 2010, **132**, 154104; (h) S. Grimme, S. Ehrlich and L. Goerigk, *J. Comput. Chem.*, 2011, **32**, 1456; (i) A. D. Becke and E. R. Johnson, *J. Chem. Phys.*, 2005, **122**, 154101; (j) E. R. Johnson and A. D. Becke, *J. Chem. Phys.*, 2006, **124**, 024101.
- [S3] C. Nieuwland and C. Fonseca Guerra, *Chem. Eur. J.*, 2022, **28**, e202200755.
- [S4] (a) M. Franchini, P. H. T. Philipsen, E. van Lenthe and L. Visscher, *J. Chem. Theory Comput.*, 2014, **10**, 1994; (b) A. D. Becke, *J. Chem. Phys.*, 1998, **88**, 2547; (c) M. Franchini, P. H. T. Philipsen and L. Visscher, *J. Comput. Chem.*, 2013, **34**, 1819.
- [S5] (a) S. K. Wolff, *Int. J. Quantum Chem.*, 2005, **104**, 645; (b) A. Bérces, R. M. Dickson, L. Fan, H. Jacobsen, D. P. Swerhone and T. Ziegler, *Comput. Phys. Commun.*, 1997, **100**, 247; (c) H. Jacobsen, A. Bérces, D. P. Swerhone and T. Ziegler, *Comput. Phys. Commun.*, 1997, **100**, 263.
- [S6] C. Y. Legault, *CYLview20*, Université de Sherbrooke, Sherbrooke, Quebec, Canada, 2020, [www.cylview.org](http://www.cylview.org).

## Method S2. Hydrogen-bond and interaction energy analyses

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In this work, the hydrogen-bond energy between the various urea hydrogen-bond donors (**X-urea**, with X = O, S, Se, C, Si, or Ge) and the hydrogen-bond acceptor formaldehyde (**F**) was computed. The hydrogen-bond energy ( $\Delta E$ ) is computed following Equation S1.

$$\Delta E = E(\mathbf{F}\cdots\mathbf{X}\text{-urea}) - E(\mathbf{F}) - E(\mathbf{X}\text{-urea}) \quad (\text{S1})$$

In this equation,  $E(\mathbf{F}\cdots\mathbf{X}\text{-urea})$ ,  $E(\mathbf{F})$ , and  $E(\mathbf{X}\text{-urea})$  correspond to the electronic energies  $E$  of the formaldehyde–X-urea hydrogen-bonded complex ( $\mathbf{F}\cdots\mathbf{X}\text{-urea}$ ), formaldehyde, and the X-urea, each in their optimized geometry, respectively.

To understand the different components that determine the relative stabilities of the  $\mathbf{F}\cdots\mathbf{X}\text{-urea}$  complexes,  $\Delta E$  was partitioned according to the activation strain model (ASM)<sup>[S7]</sup> of reactivity and bonding into a strain and interaction energy component (Equation S2).

$$\Delta E = \Delta E_{\text{strain}} + \Delta E_{\text{int}} \quad (\text{S2})$$

In this decomposition, the strain energy ( $\Delta E_{\text{strain}}$ ) is the energy required to deform the separately optimized geometries of the X-urea and formaldehyde molecules, to the geometry they acquire in the hydrogen-bonded complex. The interaction energy ( $\Delta E_{\text{int}}$ ) accounts for the stabilizing interaction between the two prepared (*i.e.*, deformed) molecules.

The interaction energy  $\Delta E_{\text{int}}$  can be further decomposed based on Kohn-Sham molecular orbital theory using a quantitative energy decomposition analysis (EDA).<sup>[S8]</sup> In the EDA, the total interaction energy ( $\Delta E_{\text{int}}$ ) is decomposed into components of electrostatic interaction ( $\Delta V_{\text{elstat}}$ ), Pauli repulsion ( $\Delta E_{\text{Pauli}}$ ), orbital interaction ( $\Delta E_{\text{oi}}$ ), and dispersion ( $\Delta E_{\text{disp}}$ ) (see Equation S3).

$$\Delta E_{\text{int}} = \Delta V_{\text{elstat}} + \Delta E_{\text{Pauli}} + \Delta E_{\text{oi}} + \Delta E_{\text{disp}} \quad (\text{S3})$$

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[S7] (a) P. Vermeeren, S. C. C. van der Lubbe, C. Fonseca Guerra, F. M. Bickelhaupt and T. A. Hamlin, *Nat. Protoc.*, 2020, **15**, 649; (b) P. Vermeeren, T. A. Hamlin and F. M. Bickelhaupt, *Chem. Commun.*, 2021, **57**, 5880.

[S8] (a) F. M. Bickelhaupt and E. J. Baerends, in *Reviews in Computational Chemistry*, eds. K. B. Lipkowitz and D. B. Boyd, Wiley-VCH, New York, Vol. **15**, 2000, pp. 1–86; (b) T. A. Hamlin, P. Vermeeren, C. Fonseca Guerra and F. M. Bickelhaupt, in *Complementary Bonding Analysis*, ed. S. Grabowsky, De Gruyter, Berlin, 2021, pp. 199–212.

Here,  $\Delta V_{\text{elstat}}$  comprises the (usually attractive) classical electrostatic interactions between the unperturbed charge distributions of the prepared (*i.e.*, deformed) interacting molecules, that is, the X-urea and formaldehyde.  $\Delta E_{\text{Pauli}}$  accounts for the destabilizing interactions between the interacting molecules resulting from overlapping closed-shell orbitals and accounts for any steric repulsion. The  $\Delta E_{\text{oi}}$  term comprises charge transfer between the interacting molecules (*i.e.*, donor–acceptor interactions between occupied and unoccupied orbitals on the interacting molecules, including HOMO–LUMO interactions) and mutual polarization of the interacting molecules (*i.e.*, empty–occupied orbital mixing on one molecule due to the presence of the other molecule).

### Method S3. Voronoi deformation density (VDD) charges

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The Voronoi deformation density (VDD) charge analysis allows for the quantification of the flow of electronic charge as a direct consequence of chemical-bond formation.<sup>[S9]</sup> VDD atomic charges ( $Q$ ) are computed by the spatial integration of the deformation density over the Voronoi cell of atom A, which is the space defined by the bond midplanes on and perpendicular to all bond axes between this atom A and its neighboring atoms (see Equation S4).

$$Q = - \int_{\text{Voronoi cell of A}} [\rho(\mathbf{r}) - \sum_i \rho_i(\mathbf{r})] d\mathbf{r} \quad (\text{S4})$$

Herein, the deformation density  $\Delta\rho(\mathbf{r}) = [\rho(\mathbf{r}) - \sum_i \rho_i(\mathbf{r})]$  is the density change going from a superposition of the original atomic densities at the positions of the molecule to the actual density of that molecule. This atomic or so-called *promolecular* density is defined as the sum of the (spherically averaged) ground-state atomic densities  $\sum_i \rho_i(\mathbf{r})$ . This is the fictitious state in which the charge density has not been affected by chemical bonding and in which all atoms have zero charge.  $Q$  in Equation S4 then represents the amount of charge that, due to chemical bonding, flows to a position closer to nucleus A ( $Q < 0$ ) or to a position further away from nucleus A ( $Q > 0$ ).

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[S9] (a) C. Nieuwland, P. Vermeeren, F. M. Bickelhaupt and C. Fonseca Guerra, *J. Comput. Chem.*, 2023, **44**, 2108; (b) C. Fonseca Guerra, J. W. Handgraaf, E. J. Baerends and F. M. Bickelhaupt, *J. Comput. Chem.*, 2004, **25**, 189; (c) O. A. Stasyuk, H. Szatyłowicz, T. M. Krygowski and C. Fonseca Guerra, *Phys. Chem. Chem. Phys.*, 2016, **18**, 11624.

## Data S1. Formaldehyde–X-urea complexes (X = O, S, Se)

**Table S1.** Decomposition of the hydrogen-bond energy  $\Delta E$  (in kcal mol<sup>-1</sup>) of the formaldehyde–1-monosubstituted X-urea (X = O, S, or Se) complexes.<sup>[a,b,c]</sup>

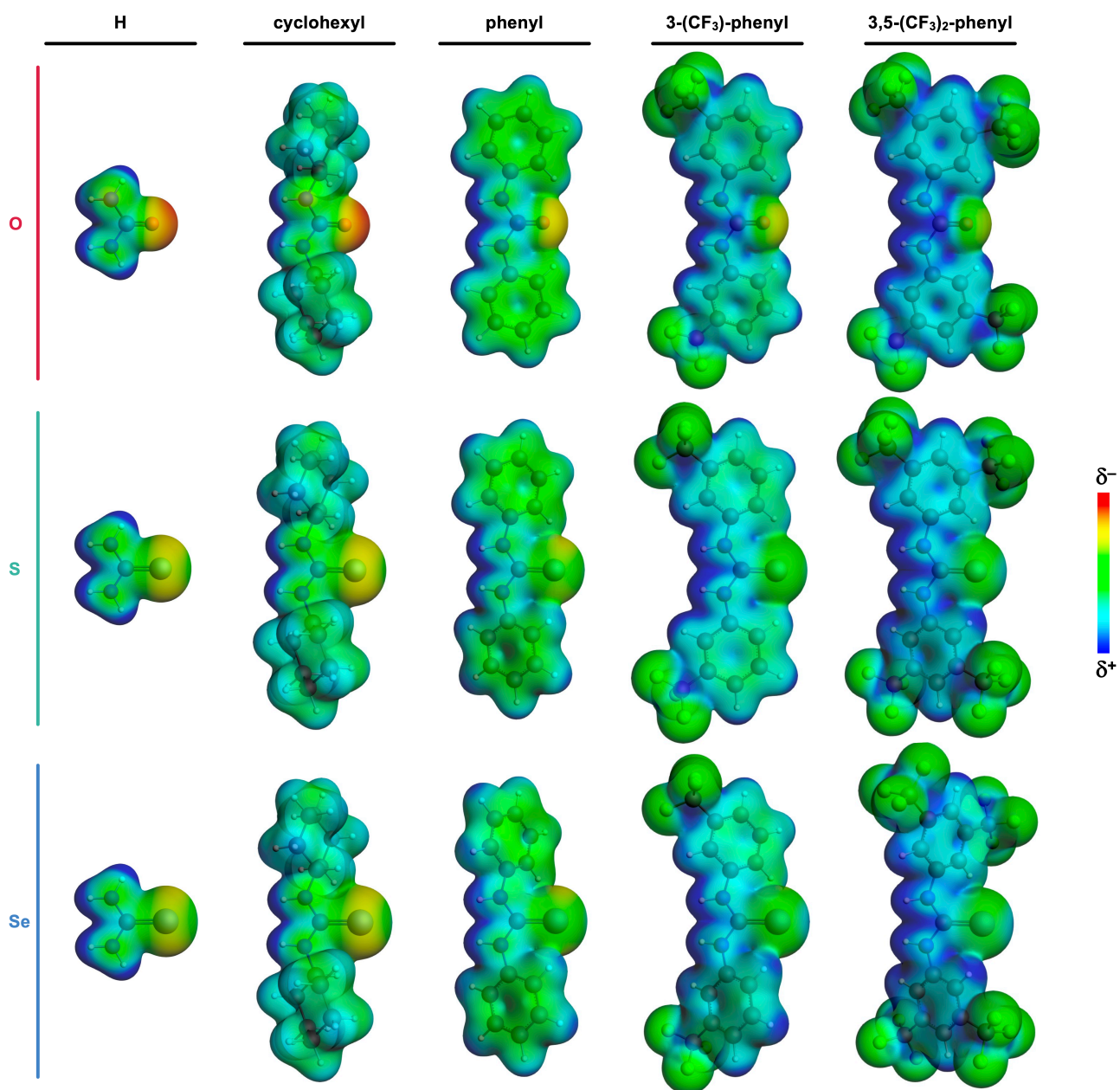
R <sup>1</sup>	R <sup>3</sup>	X	$\Delta E$	$\Delta E_{\text{strain}}$	$\Delta E_{\text{int}}$	$\Delta V_{\text{elstat}}$	$\Delta E_{\text{Pauli}}$	$\Delta E_{\text{oi}}$	$\Delta E_{\text{disp}}$
H	H	O	-5.2	0.4	-5.6	-7.0	5.6	-2.7	-1.6
		S	-6.3	0.5	-6.8	-8.4	6.9	-3.6	-1.7
		Se	-6.8	0.3	-7.1	-9.0	7.6	-3.9	-1.8
Cyclohexyl	H	O	-5.1	0.3	-5.4	-6.7	6.1	-2.8	-2.0
		S	-6.0	0.3	-6.3	-7.9	7.4	-3.5	-2.2
		Se	-6.4	0.2	-6.6	-8.5	7.9	-3.9	-2.2
Ph	H	O	-7.1	0.3	-7.5	-8.4	8.4	-3.6	-3.9
		S	-7.6	0.4	-8.0	-8.9	9.1	-3.9	-4.3
		Se	-7.7	0.4	-8.2	-9.7	10.1	-4.6	-3.9
3-(CF <sub>3</sub> )C <sub>6</sub> H <sub>4</sub>	H	O	-8.0	0.3	-8.3	-9.5	8.7	-4.7	-2.9
		S	-8.5	0.5	-9.0	-10.4	9.7	-5.2	-3.1
		Se	-8.7	0.5	-9.2	-10.8	10.1	-5.4	-3.1
3,5-(CF <sub>3</sub> ) <sub>2</sub> C <sub>6</sub> H <sub>3</sub>	H	O	-8.4	0.4	-8.7	-10.0	8.8	-4.9	-2.7
		S	-8.7	0.7	-9.4	-10.8	9.8	-5.4	-3.0
		Se	-8.9	0.7	-9.6	-11.1	10.3	-5.7	-3.1

[a] All computed at ZORA-BLYP-D3(BJ)/TZ2P in C<sub>1</sub> symmetry. [b]  $\Delta E = \Delta E_{\text{strain}} + \Delta E_{\text{int}}$ ;  $\Delta E_{\text{int}} = \Delta V_{\text{elstat}} + \Delta E_{\text{Pauli}} + \Delta E_{\text{oi}} + \Delta E_{\text{disp}}$  (see Method S2 for details). [c] See Figure 2 in the main text for the corresponding structures.

**Table S2.** Decomposition of the hydrogen-bond energy  $\Delta E$  (in kcal mol<sup>-1</sup>) of the symmetric formaldehyde–1,3-disubstituted X-urea (X = O, S, or Se) complexes.<sup>[a,b,c]</sup>

R <sup>1</sup>	R <sup>3</sup>	X	$\Delta E$	$\Delta E_{\text{strain}}$	$\Delta E_{\text{int}}$	$\Delta V_{\text{elstat}}$	$\Delta E_{\text{Pauli}}$	$\Delta E_{\text{oi}}$	$\Delta E_{\text{disp}}$
H	H	O	-5.2	0.4	-5.6	-7.0	5.6	-2.7	-1.6
		S	-6.3	0.5	-6.8	-8.4	6.9	-3.6	-1.7
		Se	-6.8	0.3	-7.1	-9.0	7.6	-3.9	-1.8
Cyclohexyl	Cyclohexyl	O	-5.0	0.3	-5.3	-6.5	6.2	-2.8	-2.2
		S	-6.0	0.1	-6.1	-7.7	7.5	-3.5	-2.4
		Se	-6.3	0.1	-6.4	-8.2	8.1	-3.8	-2.5
Ph	Ph	O	-7.8	0.1	-7.9	-9.5	8.6	-4.4	-2.6
		S	-7.2	0.6	-7.8	-9.6	9.0	-4.6	-2.7
		Se	-7.2	0.5	-7.7	-9.7	9.2	-4.6	-2.6
3-(CF <sub>3</sub> )C <sub>6</sub> H <sub>4</sub>	3-(CF <sub>3</sub> )C <sub>6</sub> H <sub>4</sub>	O	-9.7	0.2	-9.9	-11.3	9.6	-5.4	-2.7
		S	-9.1	1.3	-10.4	-12.0	10.6	-5.9	-3.1
		Se	-8.9	0.8	-9.7	-11.6	10.3	-5.6	-2.8
3,5-(CF <sub>3</sub> ) <sub>2</sub> C <sub>6</sub> H <sub>3</sub>	3,5-(CF <sub>3</sub> ) <sub>2</sub> C <sub>6</sub> H <sub>3</sub>	O	-10.6	0.2	-10.8	-12.2	10.0	-5.9	-2.7
		S	-9.7	1.1	-10.8	-12.4	10.6	-6.1	-2.9
		Se	-9.5	0.7	-10.2	-12.1	10.4	-5.9	-2.7

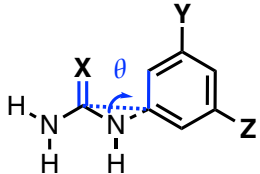
[a] All computed at ZORA-BLYP-D3(BJ)/TZ2P in C<sub>1</sub> symmetry. [b]  $\Delta E = \Delta E_{\text{strain}} + \Delta E_{\text{int}}$ ;  $\Delta E_{\text{int}} = \Delta V_{\text{elstat}} + \Delta E_{\text{Pauli}} + \Delta E_{\text{oi}} + \Delta E_{\text{disp}}$  (see Method S2 for details). [c] See Figure 3 in the main text for the corresponding structures.



**Figure S1.** Molecular electrostatic potential surfaces (at 0.01 a.u.) from  $-0.1$  (red) to  $+0.1$  (blue) a.u. of the isolated 1,3-disubstituted X-urea derivatives ( $X = \text{O}, \text{S},$  or  $\text{Se}; \text{R}^1 = \text{R}^3$ ) in the geometry of the hydrogen-bonded complex with formaldehyde.

## Data S2. Geometries of the (di)aryl substituted X-urea derivatives (X = O, S, Se)

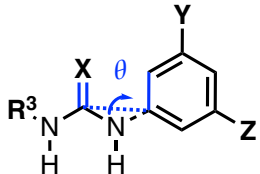
**Table S3.** XC–C<sub>Ar</sub>C<sub>Ar</sub> dihedral angle  $\theta$  (in degrees; highlighted in blue below) of the 1-aryl monosubstituted X-urea derivatives (X = O, S, or Se) in the equilibrium geometry of the X-urea monomer ( $\theta_{\text{monomer}}$ ) and that of the hydrogen-bonded complex with formaldehyde ( $\theta_{\text{complex}}$ ).<sup>[a]</sup>



X	Y	Z	$\theta_{\text{monomer}}$	$\theta_{\text{complex}}$	$\Delta\theta_{\text{monomer} \rightarrow \text{complex}}^{[b]}$
O	H	H	6.0	3.0	-3.0
S			25.6	1.8	-23.8
Se			30.8	12.1	-18.7
O	H	CF <sub>3</sub>	5.4	0.7	-4.7
S			23.0	4.4	-18.6
Se			32.4	7.5	-24.9
O	CF <sub>3</sub>	CF <sub>3</sub>	6.8	0.1	-6.7
S			34.0	3.1	-30.9
Se			35.9	15.3	-20.6

[a] Optimized at ZORA-BLYP-D3(BJ)/TZ2P in C<sub>1</sub> symmetry. [b] Change in  $\theta$  going from the equilibrium geometry of the monomer to that of the hydrogen-bonded complex with formaldehyde (see Figure 2 in the main text for the corresponding structures).

**Table S4.** XC–C<sub>Ar</sub>C<sub>Ar</sub> dihedral angle  $\theta$  (in degrees; highlighted in blue below) of the 1,3-diaryl symmetrically disubstituted X-urea derivatives (X = O, S, or Se) in the equilibrium geometry of the X-urea monomer ( $\theta_{\text{monomer}}$ ) and that of the hydrogen-bonded complex with formaldehyde ( $\theta_{\text{complex}}$ ).<sup>[a]</sup>

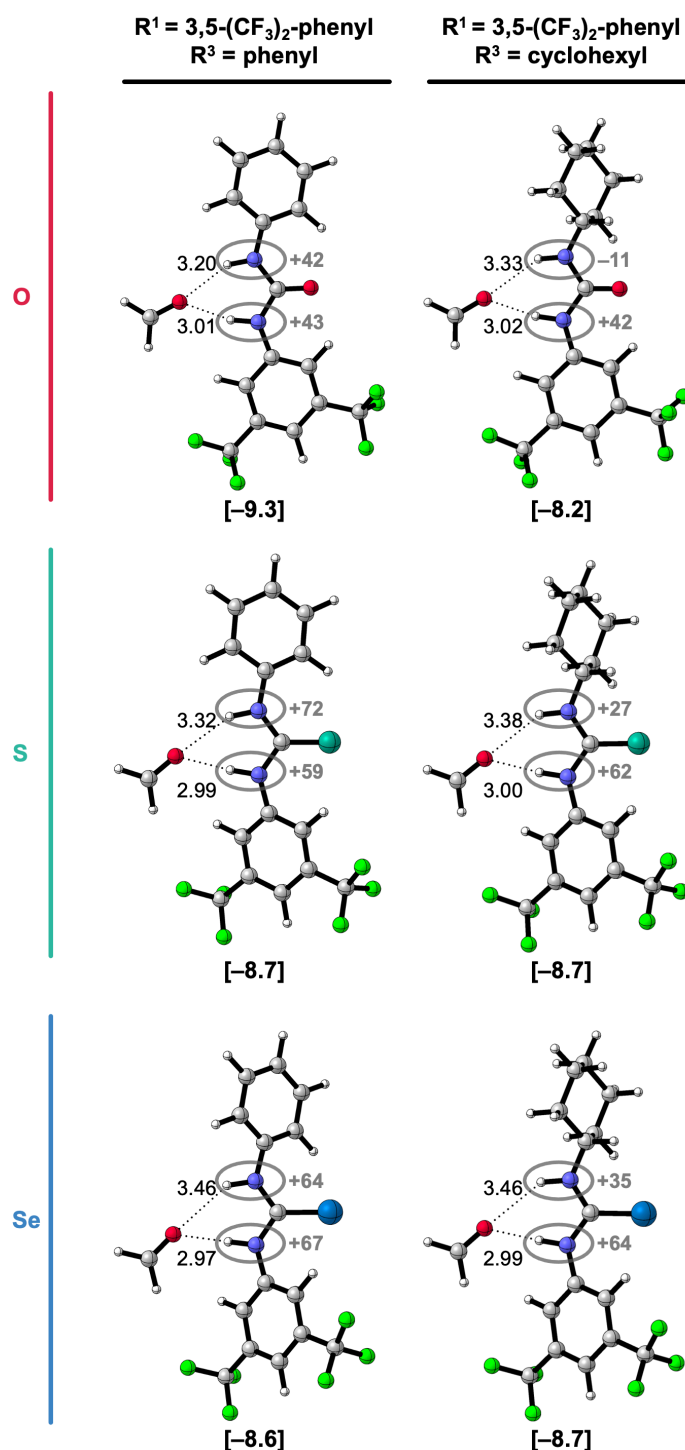


X	R <sup>3</sup>	Y	Z	$\theta_{\text{monomer}}$	$\theta_{\text{complex}}$	$\Delta\theta_{\text{monomer} \rightarrow \text{complex}}^{[b]}$
O	Ph	H	H	0.6	0.1	-0.5
S				38.0	24.4	-13.6
Se				42.6	34.5	-8.1
O	3-(CF <sub>3</sub> )C <sub>6</sub> H <sub>4</sub>	H	CF <sub>3</sub>	1.6	0.4	-1.2
S				38.5	6.3	-32.2
Se				41.6	28.6	-13.0
O	3,5-(CF <sub>3</sub> ) <sub>2</sub> C <sub>6</sub> H <sub>3</sub>	CF <sub>3</sub>	CF <sub>3</sub>	2.6	1.0	-1.6
S				40.0	21.7	-18.3
Se				43.4	35.9	-7.5

[a] Optimized at ZORA-BLYP-D3(BJ)/TZ2P in C<sub>1</sub> symmetry. [b] Change in  $\theta$  going from the equilibrium geometry of the monomer to that of the hydrogen-bonded complex with formaldehyde (see Figure 3 in the main text for the corresponding structures).



**Data S3.** Asymmetric formaldehyde–1,3-disubstituted X-urea complexes (X = O, S, Se)



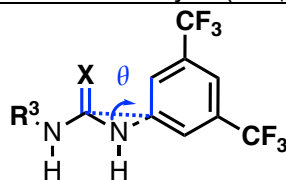
**Figure S2.** Equilibrium hydrogen-bonded complexes of formaldehyde with asymmetrically 1,3-disubstituted X-urea derivatives (X = O, S, or Se;  $R^1 \neq R^3$ ). The equilibrium hydrogen-bond ( $\text{O}\cdots(\text{H})\text{N}$ ) distances (in Å) are indicated and the hydrogen-bond energies  $\Delta E$  (in  $\text{kcal mol}^{-1}$ ) are shown below the structures between square brackets. The total Voronoi deformation density (VDD) atomic charge  $Q_{\text{NH}}$  of the NH groups (in milli-electrons) of the isolated X-urea in the geometry of the hydrogen-bonded complex is highlighted in grey. Color code of the ball-and-stick structures: H = white; C = grey; N = dark blue; O = pink; F = green; S = turquoise; Se = light blue.

**Table S5.** Decomposition of the hydrogen-bond energy  $\Delta E$  (in kcal mol<sup>-1</sup>) of the asymmetric formaldehyde–1,3-disubstituted X-urea (X = O, S, or Se) complexes.<sup>[a,b,c]</sup>

R <sup>1</sup>	R <sup>3</sup>	X	$\Delta E$	$\Delta E_{\text{strain}}$	$\Delta E_{\text{int}}$	$\Delta V_{\text{elstat}}$	$\Delta E_{\text{Pauli}}$	$\Delta E_{\text{oi}}$	$\Delta E_{\text{disp}}$
3,5-(CF <sub>3</sub> ) <sub>2</sub> C <sub>6</sub> H <sub>3</sub>	Ph	O	-9.3	0.2	-9.5	-10.8	9.6	-5.3	-2.9
		S	-8.7	1.1	-9.8	-11.1	10.6	-5.8	-3.5
		Se	-8.6	0.8	-9.3	-10.8	10.5	-5.6	-3.5
3,5-(CF <sub>3</sub> ) <sub>2</sub> C <sub>6</sub> H <sub>3</sub>	Cyclohexyl	O	-8.2	0.2	-8.4	-9.6	8.9	-4.8	-3.0
		S	-8.7	0.4	-9.1	-10.4	10.0	-5.3	-3.4
		Se	-8.7	0.5	-9.2	-10.6	10.3	-5.5	-3.4

[a] All computed at ZORA-BLYP-D3(BJ)/TZ2P in C<sub>1</sub> symmetry. [b]  $\Delta E = \Delta E_{\text{strain}} + \Delta E_{\text{int}}$ ;  $\Delta E_{\text{int}} = \Delta V_{\text{elstat}} + \Delta E_{\text{Pauli}} + \Delta E_{\text{oi}} + \Delta E_{\text{disp}}$  (see Method S2 for details). [c] See Figure S2 for the corresponding structures.

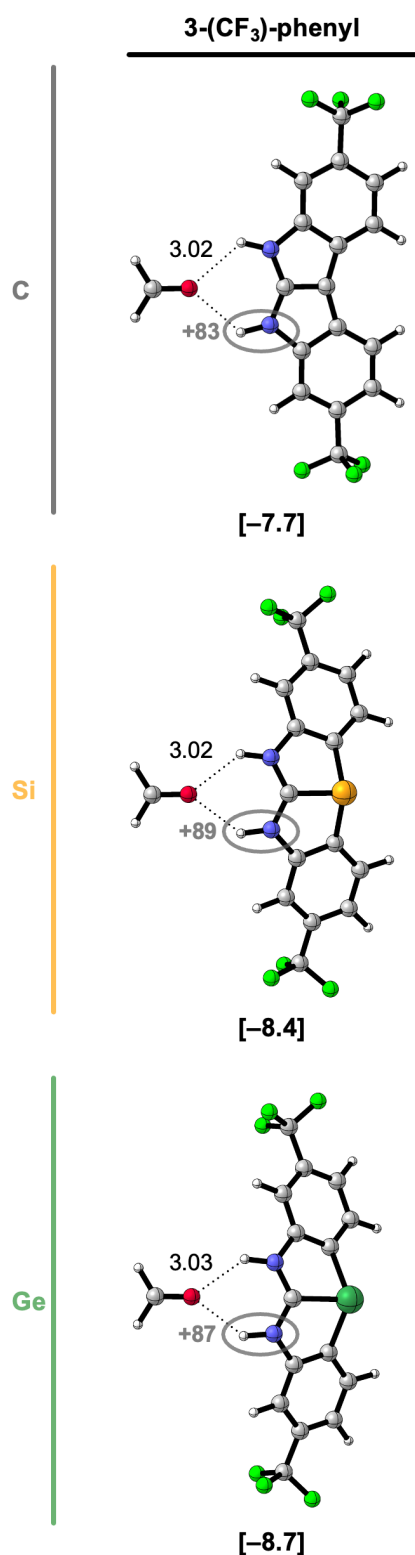
**Table S6.** XC–C<sub>Ar</sub>C<sub>Ar</sub> dihedral angle  $\theta$  (in degrees; highlighted in blue below) of the aromatic 1,3-asymmetrically disubstituted X-urea derivatives (X = O, S, or Se) in the equilibrium geometry of the X-urea monomer ( $\theta_{\text{monomer}}$ ) and that of the hydrogen-bonded complex with formaldehyde ( $\theta_{\text{complex}}$ ).<sup>[a]</sup>



X	R <sup>3</sup>	$\theta_{\text{monomer}}$	$\theta_{\text{complex}}$	$\Delta\theta_{\text{monomer} \rightarrow \text{complex}}$ <sup>[b]</sup>
O	Ph <sup>[c]</sup>	1.4 (0.6)	0.8 (0.1)	-0.6 (-0.5)
S		41.1 (35.9)	30.0 (4.8)	-11.1 (-31.1)
Se		43.5 (42.5)	34.3 (34.7)	-9.2 (-7.8)
O	cyclohexyl	5.9	1.1	-4.8
S		37.5	24.0	-13.5
Se		41.0	31.0	-10.0

[a] Optimized at ZORA-BLYP-D3(BJ)/TZ2P in C<sub>1</sub> symmetry. [b] Change in  $\theta$  going from the equilibrium geometry of the monomer to that of the hydrogen-bonded complex with formaldehyde (see Figure S2 for the corresponding structures). [c] The dihedral angle  $\theta'$  (in degrees) of the phenyl substituent (*i.e.*, R<sup>3</sup> = Ph) is denoted in between parentheses.

**Data S4.** Formaldehyde–X-urea complexes (X = C, Si, Ge)



**Figure S3.** Equilibrium hydrogen-bonded complexes of formaldehyde with 1,3-(3-CF<sub>3</sub>-phenyl)-disubstituted predistorted X-urea derivatives (X = C, Si, or Ge). The equilibrium hydrogen-bond (O···(H)N) distances (in Å) are indicated and the hydrogen-bond energies  $\Delta E$  (in kcal mol<sup>-1</sup>) are shown below the structures between square brackets. The total Voronoi deformation density (VDD) atomic charge  $Q_{\text{NH}}$  of the NH groups (in millielectrons) of the isolated X-urea in the geometry of the hydrogen-bonded complex is highlighted in grey. Color code of the ball-and-stick structures: H = white; C = grey; N = dark blue; O = pink; F = green; Si = yellow; Ge = dark green.

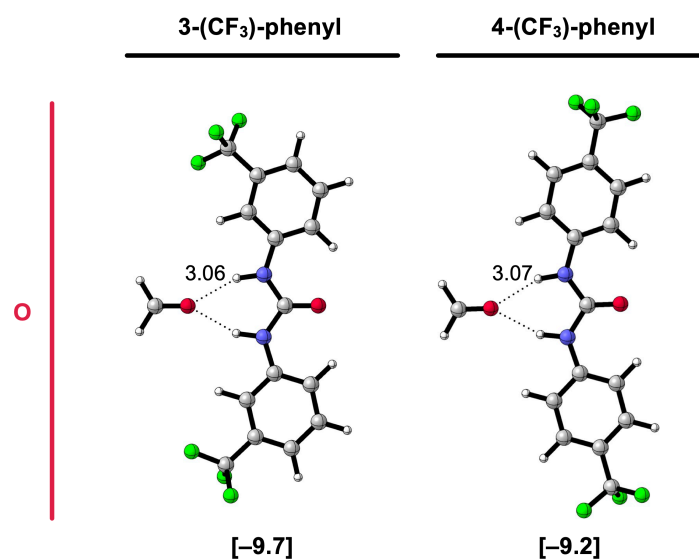
**Table S7.** Decomposition of the hydrogen-bond energy  $\Delta E$  (in kcal mol<sup>-1</sup>) of the formaldehyde–1,3-disubstituted predistorted X-urea (X = C, Si, or Ge) complexes.<sup>[a,b,c]</sup>



X	$\Delta E$	$\Delta E_{\text{strain}}$	$\Delta E_{\text{int}}$	$\Delta V_{\text{elstat}}$	$\Delta E_{\text{Pauli}}$	$\Delta E_{\text{oi}}$	$\Delta E_{\text{disp}}$
C	-7.7	0.3	-8.0	-8.7	5.8	-3.0	-2.1
Si	-8.4	0.3	-8.7	-10.1	7.7	-4.1	-2.3
Ge	-8.7	0.2	-8.9	-10.6	8.4	-4.4	-2.3

[a] All computed at ZORA-BLYP-D3(BJ)/TZ2P in  $C_1$  symmetry. [b]  $\Delta E = \Delta E_{\text{strain}} + \Delta E_{\text{int}}$ ;  $\Delta E_{\text{int}} = \Delta V_{\text{elstat}} + \Delta E_{\text{Pauli}} + \Delta E_{\text{oi}} + \Delta E_{\text{disp}}$ . [c] See Figure S3 for the corresponding structures.

**Data S5.** 1,3-bis[3-(CF<sub>3</sub>)phenyl]urea vs. 1,3-bis[4-(CF<sub>3</sub>)phenyl]urea



**Figure S4.** Equilibrium hydrogen-bonded complexes of formaldehyde with 1,3- $[n$ -(CF<sub>3</sub>)<sub>2</sub>phenyl]urea [ $X = O$ ;  $n = 3$  (*meta*) or 4 (*para*)]. The equilibrium hydrogen-bond (O $\cdots$ (H)N) distances (in Å) are indicated and the hydrogen-bond energies  $\Delta E$  (in kcal mol<sup>-1</sup>) are shown below the structures between square brackets. Color code of the ball-and-stick structures: H = white; C = grey; N = blue; O = pink; F = green.

**Table S8.** Decomposition of the hydrogen-bond energy  $\Delta E$  (in kcal mol<sup>-1</sup>) of the formaldehyde–1,3- $[n$ -(CF<sub>3</sub>)<sub>2</sub>phenyl]urea [ $X = O$ ;  $n = 3$  (*meta*) or 4 (*para*)] complexes.<sup>[a,b,c]</sup>

R <sup>1</sup>	R <sup>3</sup>	X	$\Delta E$	$\Delta E_{\text{strain}}$	$\Delta E_{\text{int}}$	$\Delta V_{\text{elstat}}$	$\Delta E_{\text{Pauli}}$	$\Delta E_{\text{oi}}$	$\Delta E_{\text{disp}}$
3-(CF <sub>3</sub> )C <sub>6</sub> H <sub>4</sub>	3-(CF <sub>3</sub> )C <sub>6</sub> H <sub>4</sub>	O	-9.7	0.2	-9.9	-11.3	9.6	-5.4	-2.7
4-(CF <sub>3</sub> )C <sub>6</sub> H <sub>4</sub>	4-(CF <sub>3</sub> )C <sub>6</sub> H <sub>4</sub>	O	-9.2	0.1	-9.3	-10.8	9.2	-5.1	-2.6

[a] All computed at ZORA-BLYP-D3(BJ)/TZ2P in C<sub>1</sub> symmetry. [b]  $\Delta E = \Delta E_{\text{strain}} + \Delta E_{\text{int}}$ ;  $\Delta E_{\text{int}} = \Delta V_{\text{elstat}} + \Delta E_{\text{Pauli}} + \Delta E_{\text{oi}} + \Delta E_{\text{disp}}$  (see Method S2 for details). [c] See Figure S4 for the corresponding structures.

## Data S6. Cartesian coordinates and energies of optimized monomers

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Below is a list consisting of the Cartesian coordinates (in Å), ADF total bond energies  $E$ , enthalpies  $H$ , Gibbs free energies  $G$  (in kcal mol<sup>-1</sup>), and the number of imaginary frequencies ( $N_{\text{imag}}$ ) of all optimized monomers reported in this work, optimized at the ZORA-BLYP-D3(BJ)/TZ2P level.

### Formaldehyde

$E$ : -494.36

$H$ : -475.92

$G$ : -491.92

$N_{\text{imag}} = 0$

H	1.17359952	0.94518045	-0.00137433
H	1.17359952	-0.94518045	-0.00137433
C	0.58285140	0.00000000	-0.00078141
O	-0.62895043	0.00000000	0.00043007

### Urea

$E$ : -1059.79

$H$ : -1017.84

$G$ : -1037.83

$N_{\text{imag}} = 0$

N	1.19058131	-0.51423267	-0.20589918
N	-1.10856075	-0.57298645	0.23787953
C	0.01965806	0.21608292	0.00597078
O	-0.01479062	1.44263088	-0.01017708
H	2.03030398	0.05252568	-0.15736625
H	-1.97879583	-0.05584540	0.17508885
H	1.27162565	-1.42924204	0.22558231
H	-1.13771448	-1.50223177	-0.16910903

### Thiourea

$E$ : -981.33

$H$ : -940.56

$G$ : -961.48

$N_{\text{imag}} = 0$

N	1.18058694	-0.48209422	-0.17255048
N	-1.10037175	-0.54121322	0.20366322
C	0.01918647	0.23320458	0.00580741
S	-0.02789530	1.90661262	-0.01635258
H	2.03215443	0.06588172	-0.16253884
H	-1.98139857	-0.04246125	0.17984260
H	1.25089122	-1.42476688	0.19942532
H	-1.11725683	-1.49590631	-0.14306214

## Selenourea

*E*: -960.00

*H*: -919.61

*G*: -941.61

*N*<sub>imag</sub> = 0

N	1.18308681	-0.47556264	-0.14830592
N	-1.10327084	-0.53548190	0.17917930
C	0.01949367	0.22112692	0.00591295
Se	-0.03210354	2.06244690	-0.01833854
H	2.03530979	0.07029821	-0.15012574
H	-1.98490549	-0.03868044	0.16719893
H	1.25510632	-1.44235687	0.15519136
H	-1.12048046	-1.51259614	-0.09820320

## 1-Cyclohexylurea

*E*: -3083.77

*H*: -2946.20

*G*: -2975.80

*N*<sub>imag</sub> = 0

N	8.23146854	6.13271249	-14.31365898
N	10.03288949	4.86140649	-13.52989913
C	9.34282615	5.37353498	-14.64077448
H	4.56513732	5.07251824	-17.00449070
O	9.70001496	5.14557105	-15.79660773
H	5.81742183	6.08331274	-17.72290031
H	3.90175003	6.91551309	-15.46954316
H	10.95279432	4.51066520	-13.77681244
H	7.84907784	6.00952246	-13.38069314
H	10.02035813	5.41073956	-12.67550539
H	3.85204588	7.49109724	-17.13670227
C	7.27308715	6.54444426	-15.35011753
C	5.51482183	8.27549243	-15.96938790
C	6.52831832	7.81446984	-14.90307402
C	6.28437396	5.41639786	-15.71573367
C	5.27715937	5.87875579	-16.78638088
C	4.52960063	7.15084143	-16.34285317
H	7.87680383	6.77320882	-16.23606782
H	6.06240918	8.58940980	-16.87073187
H	4.97035361	9.15765041	-15.60881060
H	5.99297942	7.60375385	-13.96258059
H	7.25489196	8.60807972	-14.68852301
H	5.74119649	5.11626054	-14.80537702
H	6.85009169	4.54462163	-16.06307237

## 1-Cyclohexylthiourea

*E*: -3006.43

*H*: -2870.05

*G*: -2900.37

*N*<sub>imag</sub> = 0

N	8.22872046	6.05720767	-14.37802963
N	10.05384571	4.93469487	-13.52208257
C	9.37498153	5.37077167	-14.64916197
H	4.51225551	5.09968755	-17.01779367
S	9.94551285	5.02990762	-16.19447427
H	5.76992839	6.10093544	-17.74031108
H	3.90142656	6.92933686	-15.44540894
H	10.98516398	4.58276233	-13.71271600
H	7.88370471	6.02944666	-13.42200312
H	9.96302611	5.47073021	-12.66222879
H	3.83549278	7.53125568	-17.10257450
C	7.26437532	6.50577876	-15.39163534

C	5.52741898	8.27214202	-15.95039586
C	6.55112998	7.78009615	-14.90769513
C	6.25500859	5.39610410	-15.75167216
C	5.23995308	5.89145968	-16.79925903
C	4.51948827	7.16805440	-16.32473702
H	7.85897659	6.73510667	-16.28359111
H	6.06576310	8.59167795	-16.85501193
H	5.00293039	9.15651601	-15.56683664
H	6.02822815	7.56456055	-13.96113451
H	7.29426268	8.55946298	-14.69684818
H	5.72282276	5.09095489	-14.83691370
H	6.80543455	4.52412212	-16.12134939

### 1-Cyclohexylselenourea

**E:** -2985.75

**H:** -2849.72

**G:** -2881.02

$N_{imag} = 0$

N	8.22088023	6.04199606	-14.37863517
N	10.06859418	4.95316075	-13.53356372
C	9.37669739	5.38637301	-14.63968082
H	4.50029699	5.10178613	-17.01327532
Se	10.02611144	5.03547053	-16.33844884
H	5.76432739	6.09396365	-17.73741190
H	3.89894518	6.93871757	-15.44546561
H	11.00132522	4.60445613	-13.72064374
H	7.88583672	6.04572627	-13.41770490
H	9.93586017	5.42123554	-12.63992591
H	3.83729370	7.53702655	-17.10405246
C	7.25731168	6.49728107	-15.39150538
C	5.53255719	8.27136396	-15.95313042
C	6.55330223	7.77645686	-14.90867114
C	6.24380619	5.39123713	-15.74738417
C	5.23221559	5.89004057	-16.79646933
C	4.51880647	7.17178388	-16.32505225
H	7.85450280	6.72009358	-16.28381122
H	6.07342230	8.58540203	-16.85804165
H	5.01301813	9.15956472	-15.57188416
H	6.02926164	7.56673558	-13.96133741
H	7.30132479	8.55206785	-14.70109740
H	5.70998765	5.08950336	-14.83248118
H	6.79188500	4.51725699	-16.11624676

### 1-Phenylurea

**E:** -2572.45

**H:** -2478.37

**G:** -2506.29

$N_{imag} = 0$

N	1.18494757	-0.86116706	-0.18403123
N	-1.09429938	-0.39563189	-0.15025547
C	0.19384051	0.12756729	-0.08840853
C	-2.32956230	0.28864858	-0.08678747
C	-2.43955252	1.67043429	0.15002307
C	-3.70749621	2.25616177	0.21089530
C	-4.86927995	1.49705472	0.03953504
C	-4.75510841	0.12237193	-0.19754018
C	-3.49806222	-0.47797955	-0.26029246
O	0.46628337	1.32147447	-0.00756059
H	-3.41718291	-1.54912950	-0.44402401
H	-5.64565903	-0.48696269	-0.33472631
H	-3.78113546	3.32613629	0.39382171
H	2.10853419	-0.50252154	0.03490497



H	0.99535594	-1.77876570	0.20732625
H	-1.17005236	-1.38441364	-0.36146645
H	-1.54245050	2.26230425	0.27442225
H	-5.84826550	1.96719920	0.08843030

### 1-Phenylthiourea

**E:** -2492.34

**H:** -2400.07

**G:** -2427.07

$N_{imag} = 0$

N	1.14711257	-0.89746257	-0.10323254
N	-1.07260590	-0.33905566	-0.05767201
C	0.21430901	0.12569699	-0.21617699
C	-2.31973878	0.33327965	-0.04365836
C	-2.47303444	1.68702371	0.29501868
C	-3.75313153	2.24699525	0.32152200
C	-4.88556943	1.48210348	0.02408534
C	-4.73025614	0.13033388	-0.30287565
C	-3.45803623	-0.44005996	-0.33825500
S	0.69133046	1.68626119	-0.58334999
H	-3.34111942	-1.49097450	-0.60145335
H	-5.59815010	-0.48193562	-0.53665291
H	-3.86067127	3.29755954	0.58229009
H	2.10851262	-0.57584932	-0.10774049
H	0.95431143	-1.66414431	0.53709373
H	-1.16627425	-1.34980779	-0.10950201
H	-1.60154246	2.28820975	0.51786875
H	-5.87528187	1.93136208	0.04699812

### 1-Phenylselenourea

**E:** -2470.96

**H:** -2379.07

**G:** -2406.96

$N_{imag} = 0$

N	-5.28782393	-1.21310921	0.45076443
N	-3.28803396	-0.29198378	-0.16730199
C	-4.17578006	-0.50620865	0.85348627
C	-2.06445354	0.42613630	-0.21075575
C	-1.79931619	1.54466257	0.59301808
C	-0.58257256	2.21663647	0.45250328
C	0.37003403	1.79879904	-0.48293461
C	0.09542071	0.69150803	-1.29294584
C	-1.11321525	0.00733200	-1.15720448
Se	-3.98126321	-0.04175505	2.62446292
H	-1.32003136	-0.86191021	-1.78059026
H	0.82322432	0.35318938	-2.02674035
H	-0.38325877	3.08083271	1.08220975
H	-6.00525793	-1.31605224	1.15903112
H	-5.61706379	-1.13013632	-0.50844375
H	-3.44482973	-0.86037266	-0.99646557
H	-2.53034639	1.86859157	1.32265510
H	1.31358092	2.32981925	-0.58150769

### 1-[3-(trifluoromethyl)phenyl]urea

Global minimum conformer

**E:** -2967.31

**H:** -2869.10

**G:** -2901.48

$N_{imag} = 0$

N	-0.98601782	0.21674962	0.23102304
N	-3.17670547	-0.41161402	0.69660829
C	-2.26612757	0.64364133	0.58822818
C	3.82915065	0.25280447	-0.72873758
O	-2.57236914	1.80611255	0.83192370
F	4.66843045	0.91782394	-1.58271190
F	3.60886003	-0.98928037	-1.26961455
H	-4.13596992	-0.09578145	0.79116970
H	-0.83571663	-0.78538409	0.19479727
H	-3.05949827	-1.23054669	0.10866172
F	4.53921100	0.04839524	0.43425881
H	1.36623339	-0.77916706	-0.30774427
C	0.17268321	0.99546288	0.03489726
C	0.18607554	2.40101633	0.09806311
C	1.38204254	3.08648966	-0.12753432
C	2.56930269	2.41005807	-0.41342980
C	2.54850445	1.01085963	-0.47538466
C	1.36495570	0.30671354	-0.25167151
H	-0.72929399	2.93110130	0.32501760
H	1.38214949	4.17273608	-0.07825394
H	3.49196042	2.95343782	-0.59028419

#### Local minimum conformer

**E:** -2966.90

**H:** -2868.71

**G:** -2901.04

$N_{imag} = 0$

N	-0.98601782	0.21674962	0.23102304
N	-3.17670547	-0.41161402	0.69660829
C	-2.26612757	0.64364133	0.58822818
C	3.82915065	0.25280447	-0.72873758
O	-2.57236914	1.80611255	0.83192370
F	4.66843045	0.91782394	-1.58271190
F	3.60886003	-0.98928037	-1.26961455
H	-4.13596992	-0.09578145	0.79116970
H	-0.83571663	-0.78538409	0.19479727
H	-3.05949827	-1.23054669	0.10866172
F	4.53921100	0.04839524	0.43425881
H	1.36623339	-0.77916706	-0.30774427
C	0.17268321	0.99546288	0.03489726
C	0.18607554	2.40101633	0.09806311
C	1.38204254	3.08648966	-0.12753432
C	2.56930269	2.41005807	-0.41342980
C	2.54850445	1.01085963	-0.47538466
C	1.36495570	0.30671354	-0.25167151
H	-0.72929399	2.93110130	0.32501760
H	1.38214949	4.17273608	-0.07825394
H	3.49196042	2.95343782	-0.59028419

#### 1-[3-(trifluoromethyl)phenyl]thiourea

##### Global minimum conformer

**E:** -2886.85

**H:** -2790.46

**G:** -2821.73

$N_{imag} = 0$

N	-0.96071793	0.18997918	0.15412652
N	-3.12466787	-0.38283818	0.62882461
C	-2.16223795	0.61172432	0.68866322
F	4.55940233	-0.35473008	0.56060975
S	-2.48729674	2.08273711	1.41283961
F	4.74878836	0.24424925	-1.54766542
F	3.54930124	-1.52432478	-1.00736022
H	-4.04872127	-0.08573811	0.92048649
H	-0.89271996	-0.81327004	0.00608075
H	-3.10336679	-1.04988925	-0.13845130
H	1.74044932	3.90430420	-0.41581909
H	-0.47465718	2.88801711	0.02283802

C	0.26544818	0.86353314	-0.04488884
C	1.40104245	0.05463559	-0.22665017
C	2.64544725	0.63320631	-0.47669312
C	2.78284076	2.02601344	-0.53899180
C	1.65046902	2.82223005	-0.36077658
C	0.39470548	2.26012194	-0.11914120
H	1.31145612	-1.02779478	-0.17596421
C	3.86454691	-0.24561013	-0.62286695
H	3.75314866	2.47303518	-0.73112589

**Local minimum conformer**

**E:** -2886.54

**H:** -2789.60

**G:** -2822.86

$N_{imag} = 0$

N	1.15093403	-0.90731841	-0.03967222
N	-1.07806389	-0.38234696	0.00062154
C	0.20370661	0.08479354	-0.22901987
C	-2.31679158	0.29819517	-0.04009061
C	-2.45337483	1.65172967	0.30397091
C	-3.72188585	2.23607133	0.28390889
C	-4.86039717	1.49872223	-0.06735822
C	-4.71730755	0.14919322	-0.39331912
C	-3.45657001	-0.44835708	-0.38351101
F	-2.82178528	4.19609806	1.33611177
C	-3.87000040	3.70536909	0.60894090
H	2.10987499	-0.58516558	-0.10249559
H	0.97833544	-1.62817785	0.65658504
H	-3.35144256	-1.49902423	-0.64997193
H	-1.17023012	-1.39443939	-0.00033726
H	-1.58374416	2.23306081	0.57659235
H	-5.83787240	1.97060888	-0.07735924
S	0.63115527	1.61208225	-0.75002971
F	-3.95393538	4.47007387	-0.53200335
F	-5.01214293	3.95936211	1.32849216
H	-5.58966187	-0.44048841	-0.66302472

**1-[3-(trifluoromethyl)phenyl]selenourea**

**Global minimum conformer**

**E:** -2865.41

**H:** -2768.83

**G:** -2802.83

$N_{imag} = 0$

N	-0.97390169	0.17540627	0.00946081
N	-3.19844933	-0.29675909	0.24918146
C	-2.20686559	0.64194098	0.39646532
F	4.33885539	-0.16708317	1.59000799
Se	-2.59278538	2.28269782	1.13313402
F	4.97978398	0.12586291	-0.49402451
F	3.68717017	-1.58031401	0.03297850
H	-4.13648747	0.02607227	0.45435371
H	-0.90687478	-0.83511092	-0.08753078
H	-3.11318916	-1.02835925	-0.45213386
H	1.80476114	3.80740800	-0.65177209
H	-0.45694013	2.80597897	-0.49302136
C	0.28131041	0.82865324	-0.05197539
C	1.42319460	0.03466129	0.13341738
C	2.69532842	0.60230958	0.03331404
C	2.84399370	1.96803207	-0.23799060
C	1.70158141	2.74890778	-0.42656974
C	0.42315903	2.19388125	-0.34374193
H	1.31983363	-1.02420830	0.35681986

C	3.91593706	-0.25051427	0.28266662
H	3.83429035	2.40658344	-0.31071060

**Local minimum conformer**

**E:** -2865.14

**H:** -2768.60

**G:** -2802.71

**N<sub>imag</sub>** = 0

N	1.15397308	-0.87471012	-0.00058249
N	-1.08330188	-0.39369899	0.05648966
C	0.17864281	0.06018003	-0.24837569
C	-2.32476603	0.28618686	-0.01488818
C	-2.45710015	1.63424093	0.34768521
C	-3.71676946	2.23344604	0.29382836
C	-4.84924542	1.51133395	-0.10872067
C	-4.71032554	0.16559336	-0.44880844
C	-3.45524917	-0.44597644	-0.40627957
F	-2.81462875	4.17839597	1.37080776
C	-3.86585889	3.69679050	0.64230426
H	2.10526195	-0.55536075	-0.14043295
H	1.01489969	-1.57594775	0.72302409
H	-3.34866117	-1.49206723	-0.68854279
H	-1.17322521	-1.40295510	0.14633151
H	-1.59051560	2.19928116	0.66276260
H	-5.82105744	1.99384438	-0.14566347
Se	0.60746131	1.68354122	-0.99452668
F	-3.96004381	4.47894976	-0.48536107
F	-5.00470363	3.93567366	1.37330285
H	-5.57921057	-0.40987768	-0.75735461

**1-[3,5-bis(trifluoromethyl)phenyl]urea**

**E:** -3360.34

**H:** -3258.05

**G:** -3294.75

**N<sub>imag</sub>** = 0

N	1.18104315	-0.84083017	-0.17069363
N	-1.10635984	-0.41665849	-0.14585107
C	0.18229727	0.12647749	-0.07121059
C	-2.33620403	0.26149402	-0.08137036
C	-2.44800600	1.63543085	0.19125432
C	-3.71720012	2.21895181	0.25235560
C	-4.88059489	1.47545301	0.04509787
C	-4.75676284	0.10890011	-0.22754961
C	-3.50328621	-0.49658041	-0.28961787
C	-6.00168361	-0.73239304	-0.39797946
C	-3.81180818	3.71066503	0.49906452
H	2.10688862	-0.48233659	0.03655775
H	1.00397223	-1.78224798	0.16362183
H	-3.43017542	-1.55980967	-0.50407039
H	-1.17318713	-1.40215554	-0.37492524
H	-1.55359284	2.22391986	0.34487237
H	-5.85614208	1.94468573	0.09294555
O	0.42415404	1.32393897	0.02432491
F	-7.01773437	-0.03924918	-0.99466793
F	-6.48215675	-1.17165465	0.81437873
F	-5.77476619	-1.85197665	-1.15602837
F	-2.89934093	4.13959556	1.42372952
F	-5.04898052	4.08656703	0.94758709
F	-3.57386303	4.42436977	-0.65156998

### 1-[3,5-bis(trifluoromethyl)phenyl]thiourea

**E:** -3279.74

**H:** -3178.73

**G:** -3216.28

**N<sub>imag</sub>** = 0

N	1.14177741	-0.88213372	-0.05072534
N	-1.09319474	-0.39397766	0.06615654
C	0.17032402	0.07339743	-0.26863864
C	-2.33155767	0.28133747	0.02766360
C	-2.45789874	1.64697259	0.32885009
C	-3.72250791	2.23683311	0.31089826
C	-4.87107341	1.49657445	0.00912685
C	-4.73544919	0.13600672	-0.27213813
C	-3.47690168	-0.47116617	-0.26793991
C	-5.95911732	-0.71111290	-0.53854124
C	-3.85218356	3.72059388	0.58427249
H	2.09269227	-0.56460110	-0.19761303
H	1.01267457	-1.57139754	0.68512391
H	-3.38645888	-1.52765476	-0.50795428
H	-1.17664241	-1.40533317	0.12252196
H	-1.58158402	2.23242170	0.57015044
H	-5.84686595	1.96826591	-0.00085044
S	0.52938978	1.56146725	-0.93099415
F	-7.01548359	0.02426603	-0.99334616
F	-6.38311373	-1.35325363	0.60329323
F	-5.71548410	-1.69158862	-1.46612038
F	-2.84276389	4.19526112	1.37442278
F	-5.03316026	4.02560977	1.20894886
F	-3.82341006	4.44897153	-0.57999776

### 1-[3,5-bis(trifluoromethyl)phenyl]selenourea

**E:** -3258.31

**H:** -3157.69

**G:** -3196.02

**N<sub>imag</sub>** = 0

N	1.14254632	-0.86615821	-0.02684356
N	-1.09348564	-0.39440086	0.09232798
C	0.16011654	0.06003906	-0.25867270
C	-2.33495797	0.27970219	0.04684137
C	-2.45989720	1.64387347	0.35232387
C	-3.72221990	2.23731881	0.31923037
C	-4.86830420	1.49946583	0.00015550
C	-4.73370869	0.13922143	-0.28079890
C	-3.47571573	-0.47119842	-0.26292424
C	-5.95510973	-0.70572629	-0.56258007
C	-3.85561503	3.71987500	0.59591558
H	2.09033092	-0.55893733	-0.20922696
H	1.02200155	-1.58338154	0.68370842
H	-3.38356201	-1.52698039	-0.50523154
H	-1.17802303	-1.40274355	0.19700903
H	-1.58434492	2.22440101	0.60869670
H	-5.84284935	1.97363148	-0.02136446
Se	0.55709829	1.67367894	-1.04052413
F	-7.01246146	0.03395247	-1.00728671
F	-6.37903052	-1.36719448	0.56844510
F	-5.70737857	-1.67113832	-1.50490045
F	-2.82988647	4.20292733	1.35854156
F	-5.02271529	4.01488481	1.25193380
F	-3.86526838	4.44779574	-0.56880436

### 1,3-Dicyclohexylurea

*E*: -5107.43

*H*: -4874.29

*G*: -4913.45

*N*<sub>imag</sub> = 0

N	2.94169612	-0.64143172	0.53965770
N	0.71154619	-0.19633054	0.00255798
C	1.88750428	0.26799830	0.58777661
H	5.11020146	-2.24427355	0.69878214
H	5.09322336	-0.88523446	4.68071369
H	5.47902902	-0.84280471	-0.31437620
H	3.67241308	-1.86181948	2.87796595
O	1.98648287	1.38521433	1.10279357
H	5.46994137	0.50494268	3.66487019
H	6.26340362	-2.40869504	3.09884148
H	3.12731454	-0.21535358	3.24007324
H	-3.83128286	0.32075955	-0.74342293
H	2.69044271	-1.61705291	0.40520752
H	0.80954738	-0.95751157	-0.66384666
H	7.35759139	-1.11348102	3.58734056
C	4.15170879	-0.41308169	1.34316398
C	6.63194825	-0.94700726	1.54038805
C	5.34228055	-1.16672603	0.72485992
C	3.95738932	-0.79864241	2.82588711
C	5.24612600	-0.57216249	3.63982215
C	6.44037586	-1.32464110	3.02222307
H	4.34179777	0.66519032	1.29102924
H	6.92128613	0.11254655	1.47294603
H	7.45430814	-1.52627234	1.10100021
C	-2.66791199	1.75256859	-1.90803028
H	-1.64792787	-0.78369613	-1.17315790
H	-1.15988928	3.08978367	-2.74249970
H	-1.88166114	-0.59928476	0.56981338
H	-0.02213416	0.89712753	-2.39627742
H	-1.40357279	3.26569153	-1.00581102
H	-2.64280905	1.09176663	-2.78841355
H	0.77676426	2.14322103	-1.42254630
H	-3.50402060	2.44790677	-2.05855681
C	-0.39448103	0.73332785	-0.27060405
C	-2.90596833	0.90290486	-0.64452661
C	-1.72084360	-0.04146986	-0.36110525
C	-0.15496388	1.57864772	-1.54060779
C	-1.33836787	2.52591665	-1.81781311
H	-0.43098382	1.41045531	0.59060872
H	-3.04463364	1.57138458	0.21850596

### 1,3-Dicyclohexylthiourea

*E*: -5030.67

*H*: -4798.75

*G*: -4838.59

*N*<sub>imag</sub> = 0

N	2.92201346	-0.48767717	0.66657360
N	0.76994553	-0.00402649	0.01750933
C	1.90093920	0.43011076	0.66347672
H	5.01315831	-2.19282221	0.66723876
H	5.18131009	-1.02637942	4.70905342
H	5.41753074	-0.75874879	-0.28811218
H	3.66107000	-1.85158496	2.91045551
S	2.02477712	1.95169072	1.38691141
H	5.58969713	0.39209357	3.74582231
H	6.22977992	-2.52484002	3.02126422
H	3.20576964	-0.19893599	3.36397033

H	-3.78408171	0.16992100	-0.78415219
H	2.69041789	-1.43734000	0.38525707
H	0.85596447	-0.84306723	-0.55103864
H	7.39801093	-1.30505888	3.53177830
C	4.16642940	-0.35070928	1.43449822
C	6.61885277	-1.00899965	1.52039118
C	5.29596212	-1.12921432	0.73756652
C	3.99419661	-0.80156723	2.90008102
C	5.31667429	-0.67162081	3.67931759
C	6.45469233	-1.44746503	2.98870937
H	4.40353535	0.71919338	1.42835740
H	6.95574581	0.03792241	1.49192020
H	7.39801882	-1.60432180	1.02732160
C	-2.70836341	1.65275152	-1.96970521
H	-1.52608816	-0.79081510	-1.16151998
H	-1.28599373	3.07131358	-2.81992476
H	-1.79372886	-0.57767784	0.57506174
H	-0.00379873	0.97027816	-2.41006616
H	-1.56034887	3.26948136	-1.09013593
H	-2.62768171	0.97538361	-2.83402756
H	0.69510907	2.29068261	-1.45499703
H	-3.58870366	2.28476714	-2.14467944
C	-0.39502310	0.83753060	-0.28499569
C	-2.90328288	0.81782671	-0.68905636
C	-1.65941202	-0.03529988	-0.36929577
C	-0.19391584	1.66177343	-1.57382533
C	-1.43636513	2.51800765	-1.88409480
H	-0.48707059	1.53200424	0.55772289
H	-3.09839158	1.49411194	0.15646013

### 1,3-Dicyclohexylselenourea

**E:** -5010.40

**H:** -4778.80

**G:** -4819.57

$N_{imag} = 0$

N	2.91298434	-0.48487047	0.69239822
N	0.78267925	0.01669731	-0.00048797
C	1.90100497	0.42787181	0.66156772
H	5.01326834	-2.18141914	0.66066838
H	5.19100071	-1.05896682	4.71573532
H	5.40691458	-0.73295300	-0.27879897
H	3.66718721	-1.87277744	2.91474816
Se	2.03590427	2.10430280	1.46084376
H	5.58687958	0.37237165	3.76629408
H	6.24124113	-2.53308138	3.00759715
H	3.20626016	-0.22589789	3.38642077
H	-3.77833719	0.16659408	-0.76816298
H	2.70987559	-1.42241539	0.35189097
H	0.83997762	-0.85569795	-0.52184824
H	7.40456383	-1.31220639	3.52652261
C	4.16217131	-0.35217241	1.45486727
C	6.61608538	-0.99880741	1.52179239
C	5.29075082	-1.11713193	0.74255158
C	3.99554116	-0.82129887	2.91449593
C	5.32034887	-0.69220699	3.68951040
C	6.45982946	-1.45412579	2.98585931
H	4.39306566	0.71942254	1.46084575
H	6.94706226	0.05010520	1.50325315
H	7.39611701	-1.58468974	1.01900750
C	-2.71614320	1.64455446	-1.97214358
H	-1.52075968	-0.79067786	-1.15489297
H	-1.30450222	3.06121564	-2.84321383
H	-1.77608630	-0.56360019	0.58258387

H	-0.01225871	0.96691458	-2.42932316
H	-1.56504776	3.27034952	-1.11252097
H	-2.64049161	0.96149938	-2.83244356
H	0.68897326	2.29590388	-1.48642462
H	-3.59967514	2.27282160	-2.14430297
C	-0.38984173	0.85011394	-0.30038182
C	-2.89905863	0.81801061	-0.68427890
C	-1.65022575	-0.02922282	-0.36759414
C	-0.19879616	1.66351725	-1.59664678
C	-1.44601643	2.51402613	-1.90250038
H	-0.47678959	1.55141927	0.53764573
H	-3.08952186	1.49938015	0.15806215

### 1,3-Diphenylurea

**E:** -4085.03

**H:** -3938.84

**G:** -3974.97

$N_{imag} = 0$

N	0.86627103	1.13945697	-0.45165770
N	-1.21068196	0.14554469	-0.67193359
C	-0.39850712	0.96513550	0.11610078
C	-2.54156078	-0.26678900	-0.43554385
C	-3.13166213	-1.10328361	-1.40363959
C	-4.44082268	-1.55603354	-1.24680899
C	-5.18618316	-1.18337008	-0.12219772
C	-4.59885715	-0.35313107	0.83724605
C	-3.28734225	0.11013136	0.69591208
C	1.95769988	1.89083000	0.03960543
C	3.13592658	1.88404589	-0.73299065
C	4.25902586	2.59950169	-0.32041820
C	4.22870456	3.33521287	0.86997618
C	3.05846932	3.34094087	1.63506969
C	1.92306489	2.62927602	1.23624968
H	3.02006846	3.90832427	2.56258496
H	-2.55817451	-1.39826693	-2.28229807
O	-0.75271150	1.47038422	1.17690315
H	1.05279281	0.66705086	-1.32888302
H	-2.83806888	0.75233899	1.44108792
H	-0.81486165	-0.21347043	-1.53328129
H	-4.87745333	-2.20112322	-2.00597439
H	-6.20720354	-1.53518087	0.00226406
H	-5.16609972	-0.05518680	1.71653010
H	3.16815910	1.31352377	-1.66111021
H	5.15856405	2.58063886	-0.93164307
H	5.10323626	3.89379986	1.19387185
H	1.02076833	2.63678137	1.83239640

### 1,3-Diphenylthiourea

**E:** -4003.03

**H:** -3858.19

**G:** -3894.89

$N_{imag} = 0$

N	0.80577305	1.20105324	-0.39780870
N	-1.19000653	0.12703447	-0.55087866
C	-0.42356425	0.99526525	0.21879062
C	-2.55037124	-0.24395133	-0.41011562
C	-2.90707111	-1.55559809	-0.76707387
C	-4.24018880	-1.96619192	-0.70821331
C	-5.23155610	-1.07520267	-0.28413613
C	-4.87400891	0.23165994	0.06683778
C	-3.54544399	0.65667556	0.00171917
C	1.95295747	1.88171081	0.08091728



C	2.73152053	2.58234785	-0.85605090
C	3.90487337	3.22647722	-0.45911808
C	4.31021164	3.18601045	0.87900533
C	3.53537954	2.48351903	1.80910165
C	2.36569377	1.82647257	1.42157359
H	3.84516231	2.43868476	2.85081752
H	-2.13465968	-2.25565119	-1.08327927
S	-0.90432764	1.68316016	1.65932012
H	0.80798065	1.05743155	-1.40396821
H	-3.27722904	1.66956193	0.27364522
H	-0.65698368	-0.49724169	-1.15015288
H	-4.49977262	-2.98517621	-0.98586301
H	-6.26939135	-1.39441694	-0.22964021
H	-5.63762259	0.93541668	0.39054040
H	2.40958355	2.62819199	-1.89572647
H	4.49525241	3.76644768	-1.19578970
H	5.21905559	3.69357759	1.19262302
H	1.77236345	1.28432187	2.14672201

### 1,3-Diphenylselenourea

**E:** -3981.41

**H:** -3836.94

**G:** -3874.46

**N<sub>imag</sub>** = 0

N	0.80052530	1.21148778	-0.41911726
N	-1.17827865	0.10971417	-0.54753586
C	-0.42048485	0.99730963	0.19271303
C	-2.54266847	-0.25610762	-0.40932793
C	-2.88836136	-1.59353439	-0.66065254
C	-4.22310253	-2.00015129	-0.59557343
C	-5.22268503	-1.07742684	-0.27109645
C	-4.87442368	0.25641888	-0.02709873
C	-3.54479072	0.67577107	-0.10002549
C	1.94950827	1.88933382	0.06628301
C	2.68500652	2.66504665	-0.84360776
C	3.85524077	3.30912194	-0.43458724
C	4.29583121	3.19082992	0.88737952
C	3.56258192	2.41120691	1.79000232
C	2.39786192	1.75449822	1.38876081
H	3.90195943	2.30579965	2.81796319
H	-2.10801722	-2.31592357	-0.89614717
Se	-0.95620064	1.78008237	1.76406683
H	0.81277964	1.05334630	-1.42391392
H	-3.27988594	1.70881318	0.08776095
H	-0.64453057	-0.52152360	-1.14037711
H	-4.47708044	-3.03970119	-0.78927438
H	-6.26138874	-1.39301498	-0.21134925
H	-5.64546331	0.98356560	0.21736571
H	2.33178007	2.77193900	-1.86828417
H	4.41422748	3.90998188	-1.14814625
H	5.20152817	3.69812560	1.21056604
H	1.83443354	1.15051270	2.08916626

### 1,3-bis[3-(trifluoromethyl)phenyl]urea

**Global minimum conformer**

**E:** -4874.27

**H:** -4720.35

**G:** -4762.50

**N<sub>imag</sub>** = 0

N	0.00890112	1.15686929	0.21307243
N	-0.00890112	-1.15686929	0.21307243
C	0.00000000	-0.00000000	0.99695622

C	-0.02970946	-2.50164169	0.64047012
C	-0.00955867	-3.48574847	-0.36443999
C	-0.03730340	-4.83831815	-0.02569332
C	-0.08070345	-5.23695346	1.31654442
C	-0.09954517	-4.25474000	2.30779701
C	-0.07438641	-2.89437853	1.99046364
C	0.02970946	2.50164169	0.64047012
C	0.00955867	3.48574847	-0.36443999
C	0.03730340	4.83831815	-0.02569332
C	0.08070345	5.23695346	1.31654442
C	0.09954517	4.25474000	2.30779701
C	0.07438641	2.89437853	1.99046364
F	0.40223200	5.41401579	-2.32586054
H	0.02105562	-3.19480781	-1.41171317
O	0.00000000	0.00000000	2.22322074
H	-0.01888167	1.04122719	-0.79375932
H	-0.08975188	-2.14031407	2.76534906
H	0.01888167	-1.04122719	-0.79375932
C	0.03806153	-5.88266255	-1.11399635
H	-0.10483629	-6.29070427	1.57532529
F	0.70545294	6.99415194	-0.81951750
H	-0.02105562	3.19480781	-1.41171317
C	-0.03806153	5.88266255	-1.11399635
H	0.10483629	6.29070427	1.57532529
H	0.08975188	2.14031407	2.76534906
F	-0.70545294	-6.99415194	-0.81951750
F	-1.32967712	6.31816776	-1.31126526
H	0.13666425	4.54875664	3.35391455
H	-0.13666425	-4.54875664	3.35391455
F	1.32967712	-6.31816776	-1.31126526
F	-0.40223200	-5.41401579	-2.32586054

**Local minimum conformer**

**E:** -4873.44

**H:** -4719.50

**G:** -4761.99

**N<sub>imag</sub>** = 0

N	0.01766460	1.15730684	1.29451410
C	0.00000000	0.00000000	0.51028436
H	0.05939637	1.04175103	2.30068133
C	0.02868485	2.50196845	0.86710663
N	-0.01766460	-1.15730684	1.29451410
O	0.00000000	0.00000000	-0.71649538
C	0.10102992	3.49258381	1.86581005
C	-0.03657502	2.88680169	-0.48219726
H	-0.05939637	-1.04175103	2.30068133
C	-0.02868485	-2.50196845	0.86710663
C	0.10816652	4.84293792	1.52500574
H	0.14993988	3.19902382	2.91377622
C	-0.03003286	4.24848396	-0.80268408
H	-0.09363264	2.13278586	-1.25448240
C	-0.10102992	-3.49258381	1.86581005
C	0.03657502	-2.88680169	-0.48219726
C	0.04414542	5.23584238	0.18549957
H	0.16250563	5.59384380	2.30910493
C	-0.04554718	4.65163109	-2.26088321
C	-0.10816652	-4.84293792	1.52500574
H	-0.14993988	-3.19902382	2.91377622
C	0.03003286	-4.24848396	-0.80268408
H	0.09363264	-2.13278586	-1.25448240
H	0.04582116	6.28644746	-0.08528292
F	-0.73498477	3.76793976	-3.04383241
F	-0.61151170	5.88586974	-2.45246258
F	1.22962895	4.72335623	-2.77656819

C	-0.04414542	-5.23584238	0.18549957
H	-0.16250563	-5.59384380	2.30910493
C	0.04554718	-4.65163109	-2.26088321
H	-0.04582116	-6.28644746	-0.08528292
F	0.73498477	-3.76793976	-3.04383241
F	0.61151170	-5.88586974	-2.45246258
F	-1.22962895	-4.72335623	-2.77656819

### 1,3-bis[3-(trifluoromethyl)phenyl]thiourea

#### Global minimum conformer

**E:** -4791.92

**H:** -4639.40

**G:** -4682.44

**N<sub>imag</sub>** = 0

N	-1.05235146	0.38800767	0.21286455
N	1.11424986	-0.25328385	-0.03035825
C	0.24241359	0.55193196	0.69569145
C	2.48680287	-0.51270022	0.19690485
C	3.30656880	-0.68887851	-0.92728461
C	4.65751546	-1.00795081	-0.76734775
C	5.20979149	-1.13740177	0.51215591
C	4.38517252	-0.96360351	1.62673218
C	3.03060329	-0.66067550	1.48308411
C	-2.22400810	1.10811243	0.54702866
C	-3.43412271	0.40001844	0.57569130
C	-4.63231195	1.06975331	0.83709834
C	-4.63575129	2.44631016	1.09021490
C	-3.42587770	3.14454494	1.05701601
C	-2.22339108	2.49264394	0.78099668
F	-5.89221185	-0.84379428	0.13406212
H	2.89181026	-0.57703880	-1.92594841
S	0.67944694	1.55685306	1.94900895
H	-1.23245330	-0.50195957	-0.24413887
H	2.39945099	-0.53687315	2.35352676
H	0.80203634	-0.48797536	-0.96887492
C	5.53706586	-1.14590851	-1.98702525
H	6.26072707	-1.38035190	0.63234210
F	-7.00238292	1.02323761	0.50992169
H	-3.44176188	-0.67185063	0.39469435
C	-5.92096055	0.28620471	0.91215043
H	-5.56796565	2.96197597	1.29775893
H	-1.29324986	3.04516433	0.74835111
F	6.11891940	0.05271645	-2.33372754
F	4.83887929	-1.57063224	-3.08961522
F	6.56067335	-2.03396846	-1.79331250
F	-6.18855904	-0.13251946	2.19604567
H	-3.41838817	4.21639456	1.23800702
H	4.80005611	-1.07586923	2.62521000

#### Local minimum conformer

**E:** -4791.43

**H:** -4638.97

**G:** -4682.12

**N<sub>imag</sub>** = 0

N	-0.34293673	1.08432017	-1.10752971
N	0.34293673	-1.08432017	-1.10752971
C	0.00000000	-0.00000000	-0.30381131
C	0.61951772	-2.41610833	-0.71644478
C	1.63423817	-3.10893038	-1.39425982
C	1.90765316	-4.44227406	-1.08222753
C	1.18131164	-5.09611507	-0.08653426

C	0.16289719	-4.40142677	0.58106607
C	-0.12777526	-3.07111448	0.27379454
C	-0.61951772	2.41610833	-0.71644478
C	-1.63423817	3.10893038	-1.39425982
C	-1.90765316	4.44227406	-1.08222753
C	-1.18131164	5.09611507	-0.08653426
C	-0.16289719	4.40142677	0.58106607
C	0.12777526	3.07111448	0.27379454
C	0.60653620	5.09999331	1.67914068
H	2.21543107	-2.59868767	-2.16058992
S	0.00000000	-0.00000000	1.35951249
H	-0.69572411	0.84214559	-2.02949583
H	-0.92167184	-2.54996263	0.79083550
H	0.69572411	-0.84214559	-2.02949583
F	-0.86629668	-6.41214006	1.36902848
H	1.39366982	-6.13055847	0.16474437
C	-0.60653620	-5.09999331	1.67914068
H	-2.21543107	2.59868767	-2.16058992
F	-0.09717151	5.11294048	2.86074280
H	-1.39366982	6.13055847	0.16474437
H	0.92167184	2.54996263	0.79083550
F	0.86629668	6.41214006	1.36902848
F	1.80953140	4.50543286	1.94293272
H	-2.69707577	4.96800586	-1.61305388
F	-1.80953140	-4.50543286	1.94293272
F	0.09717151	-5.11294048	2.86074280
H	2.69707577	-4.96800586	-1.61305388

### 1,3-bis[3-(trifluoromethyl)phenyl]selenourea

Global minimum conformer

*E*: -4770.22

*H*: -4618.08

*G*: -4661.54

*N*<sub>imag</sub> = 0

N	0.04307034	1.13383157	0.10287065
N	-0.04307034	-1.13383157	0.10287065
C	-0.00000000	0.00000000	0.89381783
C	-0.26330441	-2.48222308	0.48024429
C	0.46520182	-3.47224754	-0.19209526
C	0.24373193	-4.82191437	0.09812817
C	-0.69031689	-5.19390507	1.07144733
C	-1.41535701	-4.19909346	1.73337168
C	-1.21718753	-2.84913895	1.44205479
C	0.26330441	2.48222308	0.48024429
C	-0.46520182	3.47224754	-0.19209526
C	-0.24373193	4.82191437	0.09812817
C	0.69031689	5.19390507	1.07144733
C	1.41535701	4.19909346	1.73337168
C	1.21718753	2.84913895	1.44205479
F	-1.46361978	5.48472753	-1.85439016
H	1.20466271	-3.19221728	-0.93798105
Se	-0.00000000	0.00000000	2.72675783
H	-0.34800639	1.02677762	-0.83025868
H	-1.79053713	-2.08475347	1.95108751
H	0.34800639	-1.02677762	-0.83025868
C	1.06947888	-5.87622705	-0.59931531
H	-0.85531469	-6.24253609	1.29768953
F	-0.39325481	7.05800880	-0.74123682
H	-1.20466271	3.19221728	-0.93798105
C	-1.06947888	5.87622705	-0.59931531
H	0.85531469	6.24253609	1.29768953
H	1.79053713	2.08475347	1.95108751
F	2.22132719	-6.16519100	0.09698607

F	1.46361978	-5.48472753	-1.85439016
F	0.39325481	-7.05800880	-0.74123682
F	-2.22132719	6.16519100	0.09698607
H	2.15444579	4.47847673	2.47986029
H	-2.15444579	-4.47847673	2.47986029

**Local minimum conformer**

**E:** -4769.87

**H:** -4618.39

**G:** -4659.94

$N_{imag} = 0$

N	-0.36617986	1.07527384	-1.09921521
N	0.36617986	-1.07527384	-1.09921521
C	0.00000000	0.00000000	-0.30846959
C	0.64474174	-2.40746676	-0.70248917
C	1.72129899	-3.07117116	-1.30664260
C	1.99906343	-4.40154165	-0.98122233
C	1.21366445	-5.07595940	-0.04670677
C	0.13150305	-4.40857215	0.54580910
C	-0.16230955	-3.08289968	0.22414635
C	-0.64474174	2.40746676	-0.70248917
C	-1.72129899	3.07117116	-1.30664260
C	-1.99906343	4.40154165	-0.98122233
C	-1.21366445	5.07595940	-0.04670677
C	-0.13150305	4.40857215	0.54580910
C	0.16230955	3.08289968	0.22414635
C	0.70474084	5.13409989	1.57486021
H	2.34801137	-2.54168079	-2.02206066
Se	0.00000000	0.00000000	1.52227600
H	-0.71325703	0.83633515	-2.02514650
H	-1.00445977	-2.57990586	0.67987972
H	0.71325703	-0.83633515	-2.02514650
F	-0.94306554	-6.43796941	1.21453744
H	1.42890822	-6.10734181	0.21506482
C	-0.70474084	-5.13409989	1.57486021
H	-2.34801137	2.54168079	-2.02206066
F	0.07685849	5.17909224	2.79742764
H	-1.42890822	6.10734181	0.21506482
H	1.00445977	2.57990586	0.67987972
F	0.94306554	6.43796941	1.21453744
F	1.92245539	4.54584119	1.77736505
H	-2.83777165	4.90721976	-1.45251029
F	-1.92245539	-4.54584119	1.77736505
F	-0.07685849	-5.17909224	2.79742764
H	2.83777165	-4.90721976	-1.45251029

**1,3-bis[3,5-bis(trifluoromethyl)phenyl]urea**

**E:** -5659.48

**H:** -5497.99

**G:** -5546.70

$N_{imag} = 0$

H	-2.82350257	-0.09103455	4.00078762
H	-4.91764024	-0.01792181	4.00079789
N	-5.02869591	-0.05799406	2.99385861
C	-3.87057700	-0.05443162	2.21039922
H	-7.08384551	0.01615454	4.60111851
N	-2.71245142	-0.05092517	2.99384935
H	-1.75407039	0.06778769	0.43728135
O	-3.87058573	-0.05439005	0.98588356
C	-1.37264133	-0.03508765	2.55714239
C	-0.37763326	-0.07933045	3.55158864
C	0.96928060	-0.05501425	3.19958259

C	1.35833484	0.00882261	1.85643755
C	0.36471005	0.05326194	0.87861050
C	-0.99536273	0.03091896	1.20684266
H	-0.65730748	-0.12500428	4.60111154
C	2.02883209	-0.15243383	4.27524897
H	2.40689842	0.03254174	1.58421242
C	0.74021692	0.09546940	-0.58931141
C	-6.36850629	-0.07378239	2.55715217
C	-6.74577969	-0.13977682	1.20685047
C	-8.10585113	-0.16208237	0.87861215
C	-9.09947909	-0.11761156	1.85643518
C	-8.71042985	-0.05379557	3.19958244
C	-7.36351661	-0.02951358	3.55159450
H	-5.98706928	-0.17665949	0.43729241
C	-8.48135725	-0.20427220	-0.58931047
H	-10.14804208	-0.14130670	1.58420545
C	-9.76998261	0.04364244	4.27524590
F	-8.23197040	0.99907815	-1.20246027
F	-9.80521896	-0.48331499	-0.78223902
F	-7.76399291	-1.14991243	-1.27180673
F	2.06409064	0.37445564	-0.78223658
F	0.49077093	-1.10785260	-1.20249237
F	0.02289499	1.04116157	-1.27178130
F	2.46342571	-1.44668108	4.43504354
F	1.56918004	0.26115444	5.49837360
F	3.13140939	0.59993293	3.98113082
F	-10.20452704	1.33790309	4.43506451
F	-9.31035161	-0.36998760	5.49836456
F	-10.87258748	-0.70867597	3.98110781

### 1,3-bis[3,5-bis(trifluoromethyl)phenyl]thiourea

**E:** -5577.25

**H:** -5417.16

**G:** -5466.43

$N_{imag} = 0$

N	0.93847736	0.78623557	0.05366854
N	-1.14599596	-0.12550294	0.09297390
C	-0.42555439	1.06314000	-0.00589803
C	-2.53879263	-0.31277194	-0.05778750
C	-3.17615049	-1.23352604	0.78296427
C	-4.54334581	-1.48664499	0.63619816
C	-5.28982693	-0.82136343	-0.33717068
C	-4.64079930	0.09169879	-1.17676936
C	-3.27549708	0.34859792	-1.05272510
C	2.01201115	1.70322740	0.11842792
C	3.18343520	1.39702417	-0.58524038
C	4.28862461	2.25013870	-0.51158425
C	4.23697410	3.41743513	0.25121697
C	3.06333097	3.71001123	0.95613408
C	1.95471165	2.86517518	0.90388094
C	2.98887669	4.99199051	1.75936092
H	-2.61223695	-1.74287442	1.56025710
S	-1.09147122	2.57615942	-0.16983756
H	1.20520230	-0.14515707	-0.25446064
H	-2.78743498	1.04689369	-1.71857079
H	-0.67530696	-0.87844747	0.58803689
C	-5.19749390	-2.52827687	1.51657194
H	-6.35141741	-1.01270196	-0.44481742
C	-5.45016235	0.84160305	-2.21439981
H	3.23097228	0.50261579	-1.20124730
C	5.56158107	1.86817614	-1.23393642
H	5.09176922	4.08227503	0.30129666
H	1.06091357	3.09993765	1.46518678

F	-5.02149925	-3.79462249	1.00711358
F	-6.54248353	-2.33508040	1.64221376
F	-4.66633005	-2.54053099	2.78038235
F	-4.68029111	1.28975406	-3.25104498
F	-6.06571313	1.94097452	-1.66880645
F	-6.44021201	0.06192062	-2.75111818
F	4.18587847	5.29186933	2.35412503
F	2.04805439	4.93326704	2.74884305
F	2.66534314	6.06225169	0.96238032
F	6.35318879	2.94672830	-1.50222565
F	5.30744865	1.24074962	-2.42618880
F	6.31702221	0.99382358	-0.48634128

### 1,3-bis[3,5-bis(trifluoromethyl)phenyl]selenourea

*E*: -5555.68

*H*: -5396.00

*G*: -5446.09

*N*<sub>imag</sub> = 0

H	-2.87990544	-0.53380834	3.87180882
H	-4.86120763	0.42483957	3.87193338
N	-5.00376561	0.03385273	2.94342931
C	-3.87060195	-0.05438863	2.15253613
H	-6.91408462	1.60162165	3.85545389
N	-2.73738607	-0.14274743	2.94332983
H	-1.62397666	1.53951365	1.14365294
Se	-3.87069233	-0.05427999	0.32343948
C	-1.38298980	-0.09585568	2.53362231
C	-0.47776281	-0.97774362	3.13243633
C	0.87686436	-0.93178472	2.78382603
C	1.33557131	-0.01893441	1.83425997
C	0.42047579	0.86520118	1.24862005
C	-0.93074875	0.84078372	1.59194071
H	-0.82701660	-1.71034417	3.85545097
C	1.84577035	-1.85810201	3.48410993
H	2.38383718	0.01029557	1.55929775
C	0.90840663	1.83837985	0.19621038
C	-6.35817729	-0.01298364	2.53374037
C	-6.81044796	-0.94967293	1.59213335
C	-8.16167527	-0.97406520	1.24880038
C	-9.07673344	-0.08985688	1.83437729
C	-8.61799494	0.82304247	2.78388854
C	-7.26336659	0.86898592	3.13249060
H	-6.11723902	-1.64846368	1.14390459
C	-8.64954057	-1.94728609	0.19640065
H	-10.12499944	-0.11907146	1.55941787
C	-9.58690478	1.74939009	3.48412668
F	-8.73453355	-1.34932770	-1.03647884
F	-9.89882171	-2.42905382	0.48686551
F	-7.82076492	-3.02552815	0.06016881
F	2.15715830	2.32110344	0.48741826
F	0.99473036	1.24002059	-1.03638144
F	0.07901090	2.91600295	0.05897674
F	1.29803990	-3.09361911	3.71547595
F	2.21419029	-1.35921971	4.71300950
F	2.99419014	-2.04860295	2.77271416
F	-9.03902438	2.98476331	3.71588150
F	-9.95572172	1.25031356	4.71282965
F	-10.73511919	1.94023128	2.77248472

### 1-phenyl-3-[3,5-bis(trifluoromethyl)phenyl]urea

*E*: -4872.83

*H*: -4718.98

*G*: -4761.65

$N_{imag} = 0$

N	0.94878088	0.77512379	0.19856156
N	-1.14902472	-0.18028393	-0.01199382
C	-0.40696429	1.01428914	0.01098595
C	-2.53572352	-0.33436877	-0.17798355
C	-3.03784690	-1.64976214	-0.19570540
C	-4.40189401	-1.88195216	-0.35664437
C	-5.29897856	-0.81784938	-0.50011633
C	-4.79285436	0.48297647	-0.47873670
C	-3.42788876	0.74231341	-0.32135303
C	2.00746372	1.71366701	0.27604667
C	3.29975120	1.19580362	0.48515626
C	4.39797314	2.05006107	0.57296393
C	4.22542349	3.43382015	0.45357127
C	2.94090967	3.94464878	0.24583287
C	1.82847088	3.10243010	0.15529375
H	2.79259230	5.01810068	0.15135709
H	-2.35925524	-2.49236533	-0.08841498
O	-0.90930265	2.12488258	-0.11950238
H	1.24469345	-0.18868986	0.30524328
H	-3.04973277	1.75509677	-0.30751380
H	-0.64004124	-1.05126048	0.08742821
C	-4.92764141	-3.29928927	-0.31698005
H	-6.35970428	-1.00014021	-0.62535336
C	-5.72741750	1.65793885	-0.68181535
H	3.44161242	0.11931903	0.57910028
H	5.38871210	1.63183680	0.73488476
H	5.08020778	4.10182359	0.52179176
H	0.83716791	3.50387481	-0.00481818
F	-3.98562847	-4.21594455	-0.70763039
F	-6.01704847	-3.47016615	-1.12495454
F	-5.31787412	-3.65636969	0.95303754
F	-5.40229080	2.71984814	0.11698306
F	-7.03150527	1.33813439	-0.41842295
F	-5.68507383	2.11213121	-1.97909383

### 1-phenyl-3-[3,5-bis(trifluoromethyl)phenyl]thiourea

$E$ : -4790.71

$H$ : -4637.65

$G$ : -4682.92

$N_{imag} = 0$

C	3.20572336	1.10229703	-1.34744942
C	4.06896578	2.14473195	-1.68860579
C	3.69166459	3.47208689	-1.45959125
C	2.44918877	3.74207593	-0.87544096
C	1.58065457	2.70716291	-0.52149827
C	-1.84718177	-1.68091682	0.27916223
C	-2.20440934	-2.35446644	1.45438732
C	-3.44017886	-3.00277978	1.54540775
C	-4.33742898	-2.97914801	0.47702226
C	-3.96832314	-2.30884260	-0.69572922
C	-2.73531212	-1.66703043	-0.80925695
C	-4.94772239	-2.25015611	-1.84848697
H	3.49525335	0.06978740	-1.53874672
S	-1.31796855	1.23400780	-0.98922810
H	0.08129914	-1.41947165	0.91459114
H	0.62154210	2.92447665	-0.06936373
H	1.66960816	-0.60439991	-0.32464996
H	5.03168930	1.91729318	-2.14010894
H	4.35894685	4.28613783	-1.73126790
H	2.14952351	4.77017363	-0.68578354
H	-1.52621732	-2.36222956	2.30395938



C	-3.77443460	-3.77078360	2.80375765
H	-5.29821862	-3.47531063	0.55131299
H	-2.46052392	-1.16641422	-1.72739103
N	-0.57090998	-1.08593653	0.20994897
N	1.15244414	0.26805277	-0.39520235
C	-0.22300053	0.13408293	-0.38860035
C	1.95642836	1.37781509	-0.76665721
F	-5.84666027	-1.22313861	-1.69185591
F	-5.68345317	-3.40172811	-1.95521736
F	-4.32772530	-2.05440368	-3.05124882
F	-3.30158075	-3.14637602	3.92992777
F	-3.20953303	-5.02673143	2.79059755
F	-5.11827716	-3.94432204	2.97050672

### 1-phenyl-3-[3,5-bis(trifluoromethyl)phenyl]selenourea

*E*: -4769.12

*H*: -4617.05

*G*: -4661.07

*N*<sub>imag</sub> = 0

N	-0.93421772	-0.94004236	-0.07701141
N	-0.78082112	1.31861242	0.10613567
C	-0.06843061	0.14802992	-0.00802232
C	-0.32411876	2.66443785	0.04105116
C	-0.90016956	3.59237521	0.92169365
C	-0.52778612	4.93751847	0.86463218
C	0.42583773	5.36228857	-0.06587011
C	0.99258807	4.43321560	-0.94634731
C	0.62015274	3.08838279	-0.90458766
C	-0.61199681	-2.31416051	-0.02833505
C	-1.29706689	-3.18916790	-0.87808080
C	-1.03703584	-4.56385244	-0.82733729
C	-0.08866173	-5.07568841	0.05758825
C	0.58455482	-4.19106901	0.91061148
C	0.32993797	-2.82057502	0.88212386
C	1.63447039	-4.73825745	1.85299894
H	-1.62978317	3.25713654	1.65725171
Se	1.75809230	0.01498651	-0.06584920
H	-1.84881244	-0.74145388	-0.47557894
H	1.05764596	2.37254622	-1.58967007
H	-1.72175873	1.22099676	0.48102364
H	-0.97724082	5.64829524	1.55390639
H	0.72283178	6.40728072	-0.10676708
H	1.72812422	4.75653591	-1.67917990
H	-2.02022464	-2.80074022	-1.59077670
C	-1.83101282	-5.48931451	-1.72005693
H	0.11803219	-6.13924712	0.09048354
H	0.84548306	-2.15128760	1.55707853
F	-3.09013540	-5.71992718	-1.21125206
F	-1.23754121	-6.70852497	-1.87434154
F	2.83674917	-4.92118849	1.21399316
F	1.27527106	-5.95814248	2.36633285
F	1.87017522	-3.90789349	2.91281758
F	-2.01296275	-4.96292502	-2.97414891

### 1-cyclohexyl-3-[3,5-bis(trifluoromethyl)phenyl]urea

*E*: -5385.07

*H*: -5188.34

*G*: -5230.67

*N*<sub>imag</sub> = 0

H	2.79301723	4.02400729	3.27992051
H	2.52200984	4.48625847	1.60129327
H	4.60575635	2.46075499	2.59993117

H	4.94729079	4.06999966	1.96314419
N	0.95722491	0.78157240	0.47002487
N	-1.14369096	-0.18325633	0.23365146
C	-0.38435422	1.00243669	0.22459701
C	-2.52410119	-0.32931325	0.03305828
C	-3.03876602	-1.63966958	-0.00059372
C	-4.40253833	-1.85829245	-0.18510092
C	-5.28783751	-0.78580701	-0.33699405
C	-4.76955035	0.51050641	-0.30042777
C	-3.40531836	0.75610888	-0.12035935
C	-5.69061648	1.69355520	-0.51404044
F	-4.00825465	-4.19093714	-0.56947612
F	-5.64058173	2.14030470	-1.81391513
F	-5.35868923	2.75782370	0.27941409
F	-6.99967073	1.38906574	-0.25329115
F	-6.03698308	-3.42431167	-0.96105617
F	-5.32290966	-3.64305076	1.10881148
H	-2.36949211	-2.48875786	0.11384650
O	-0.86004112	2.11158928	-0.00856849
H	1.23315663	-0.09505015	0.90156192
H	-3.01489539	1.76449443	-0.10158670
H	-0.63010732	-1.05420692	0.30945727
C	-4.93961613	-3.27111899	-0.15999093
H	-6.34791455	-0.95770699	-0.48045292
C	1.88676232	1.90943849	0.64846707
C	4.31685104	2.62956628	0.45744032
C	3.31459876	1.47170076	0.27925109
C	1.82881208	2.49006692	2.07749953
C	2.82772843	3.65086805	2.24868758
C	4.25981047	3.21860798	1.88024404
H	1.55299055	2.68206155	-0.05354284
H	4.08259607	3.42003906	-0.27103170
H	5.33122337	2.28021498	0.22729381
H	3.61198929	0.63282015	0.92990970
H	3.32915584	1.10057604	-0.75301203
H	2.07067446	1.68797072	2.79272088
H	0.80607947	2.82190489	2.28900910

### 1-cyclohexyl-3-[3,5-bis(trifluoromethyl)phenyl]thiourea

*E*: -5305.03

*H*: -5109.64

*G*: -5152.67

*N*<sub>imag</sub> = 0

H	3.28519007	3.18398971	3.78743646
H	2.68294425	4.18500362	2.46808693
H	4.89043598	2.05729855	2.25640279
H	5.12418121	3.80367035	2.17057879
N	0.85523317	1.03425692	0.44915201
N	-1.15175394	-0.03056140	0.18316524
C	-0.50067087	1.17770528	0.46050713
C	-2.53019165	-0.26562597	0.01461241
C	-3.05640911	-1.47624561	0.48653488
C	-4.40847409	-1.77823263	0.29863768
C	-5.25630608	-0.87828588	-0.34862507
C	-4.72030710	0.32506110	-0.82292738
C	-3.37110931	0.63850554	-0.65666271
C	-5.63813106	1.32145589	-1.49781802
F	-4.67417053	-4.10807392	-0.15353528
F	-4.96765079	2.16520487	-2.33882403
F	-6.28818178	2.10933573	-0.57841304
F	-6.61178942	0.70199913	-2.23876676
F	-6.28354108	-3.10882230	0.96821889
F	-4.34874215	-3.51813785	1.94125390

H	-2.41498899	-2.17795821	1.01393816
S	-1.28212589	2.62233831	0.79233047
H	1.24522860	0.14762672	0.14219611
H	-2.97094059	1.56692291	-1.03937948
H	-0.61546269	-0.86849054	0.39053658
C	-4.93303378	-3.11593182	0.76652651
H	-6.30620392	-1.10928555	-0.48686476
C	1.82142306	2.07929229	0.81843231
C	4.17243723	2.94437720	0.41245072
C	3.13154970	1.86945579	0.04031494
C	2.06771866	2.11251816	2.34085913
C	3.10051081	3.19543646	2.70605588
C	4.41839819	2.99770181	1.93283814
H	1.36840318	3.03221317	0.51941113
H	3.81046539	3.92468551	0.06930928
H	5.11081301	2.75012093	-0.12182038
H	3.53916039	0.87340595	0.28012005
H	2.92774660	1.88801313	-1.03805373
H	2.43562193	1.12535873	2.66001472
H	1.11548939	2.29200874	2.85175755

### 1-cyclohexyl-3-[3,5-bis(trifluoromethyl)phenyl]selenourea

*E*: -5284.08

*H*: -5089.04

*G*: -5132.76

*N*<sub>imag</sub> = 0

H	3.33332587	3.11201664	3.81674143
H	2.68134005	4.14729122	2.54827054
H	4.92291348	2.07183540	2.20985010
H	5.12207718	3.82433600	2.18184513
N	0.86328861	1.04102158	0.45961523
N	-1.12988826	-0.04468936	0.19816693
C	-0.48791444	1.15507320	0.48268555
C	-2.50996900	-0.28388986	0.02409942
C	-3.04854183	-1.46791491	0.54117743
C	-4.40336278	-1.76447456	0.35343288
C	-5.23486872	-0.88347685	-0.33815077
C	-4.68331389	0.29348789	-0.86031406
C	-3.33260253	0.59947161	-0.69426322
C	-5.58545032	1.26585919	-1.58827162
F	-4.65743566	-4.11503675	0.01736779
F	-4.89572686	2.08417476	-2.43857665
F	-6.26002764	2.08011454	-0.71082558
F	-6.53944154	0.62027529	-2.33324853
F	-6.30054052	-3.05839951	1.03306027
F	-4.39750030	-3.41392366	2.08674633
H	-2.41833836	-2.15066209	1.10549053
Se	-1.36575627	2.72712814	0.89004922
H	1.26684883	0.15767210	0.15619378
H	-2.91637057	1.50408930	-1.11559303
H	-0.58552467	-0.88606504	0.37244613
C	-4.94464203	-3.07517521	0.87457279
H	-6.28602358	-1.10951933	-0.47581127
C	1.82271506	2.08817761	0.84446051
C	4.14578136	3.01015106	0.41585829
C	3.11646699	1.92925714	0.02854573
C	2.10210620	2.06986068	2.36075679
C	3.12323691	3.15853686	2.74098309
C	4.42602022	3.01384848	1.93124170
H	1.34381120	3.04155851	0.59066203
H	3.75739241	3.99468651	0.11669625
H	5.07478888	2.85339389	-0.14628734
H	3.54779677	0.93305730	0.22215893

H	2.88630355	1.98299475	-1.04323220
H	2.49478640	1.07916595	2.63688954
H	1.15793139	2.21448173	2.89718343

### 5,6-dihydroindolo[2,3-*b*]indole (X = C; R = 3-CF<sub>3</sub>-phenyl)

**E:** -4738.32

**H:** -4597.40

**G:** -4637.56

**N<sub>imag</sub>** = 0

C	0.00000000	-0.00000000	-0.07955100
C	-0.02751736	-1.38155841	0.32591486
C	0.02751736	1.38155841	0.32591486
C	-0.00000000	-0.00000000	-1.48034639
C	-0.03888366	-2.06177578	1.55456623
C	-0.04200278	-2.15965596	-0.88505787
C	0.03888366	2.06177578	1.55456623
C	0.04200278	2.15965596	-0.88505787
N	0.02246621	1.27641814	-1.98830637
N	-0.02246621	-1.27641814	-1.98830637
C	-0.06342945	-3.45488796	1.56635814
H	-0.02645621	-1.50894141	2.48994659
C	-0.06652871	-3.54786224	-0.88190300
C	0.06342945	3.45488796	1.56635814
H	0.02645621	1.50894141	2.48994659
C	0.06652871	3.54786224	-0.88190300
H	0.03585183	1.55394994	-2.96000200
H	-0.03585183	-1.55394994	-2.96000200
C	-0.07425440	-4.19153230	0.36373189
H	-0.06887410	-3.98638234	2.51328339
H	-0.07397931	-4.12205678	-1.80343861
C	0.07425440	4.19153230	0.36373189
H	0.06887410	3.98638234	2.51328339
H	0.07397931	4.12205678	-1.80343861
C	-0.14882287	-5.69287512	0.42915474
C	0.14882287	5.69287512	0.42915474
F	0.66776925	-6.21575918	1.40144199
F	0.20380809	-6.29360680	-0.75358080
F	-1.42238903	-6.13764190	0.72329386
F	-0.66776925	6.21575918	1.40144199
F	-0.20380809	6.29360680	-0.75358080
F	1.42238903	6.13764190	0.72329386

### 5,6-dihydroindolo[2,3-*b*]indole (X = Si; R = 3-CF<sub>3</sub>-phenyl)

**E:** -4617.19

**H:** -4479.29

**G:** -4520.44

**N<sub>imag</sub>** = 0

Si	-0.05579678	0.92510223	-1.18028164
C	0.35358305	-0.87767080	-0.93475243
C	0.07453290	1.01782643	0.72883939
C	-1.48968098	0.25552965	-2.26013252
N	-0.19545604	-1.72541750	-1.83863221
N	0.90474110	-1.18926950	0.26369736
C	-0.09180429	2.08003091	1.63279055
C	0.79332917	-0.12816356	1.20456894
C	-2.50657746	0.90322601	-2.98090347
C	-1.20825336	-1.10363668	-2.62043546
H	-0.09506952	-2.73726197	-1.83398135
H	1.16216571	-2.12458662	0.56838760
C	0.37994346	2.00078138	2.94372839
C	1.58059361	0.78779814	4.79179044
C	1.32491897	-0.19840754	2.49152573

C	-3.23680820	0.23807273	-3.96668388
C	-3.72933553	-1.80028404	-5.35635782
C	-1.88588331	-1.76323912	-3.64487459
C	1.09784189	0.86898425	3.36630423
H	0.20711085	2.81850216	3.63732922
F	2.05591591	1.98897610	5.25081679
F	2.58535507	-0.13128554	4.95835754
F	0.56981877	0.41821980	5.65446534
H	1.89527563	-1.06454554	2.81636579
C	-2.91685701	-1.08763814	-4.30579790
H	-4.04433882	0.74647889	-4.48536840
F	-4.04778373	-0.98509270	-6.41155533
F	-3.08155096	-2.89286149	-5.87473249
F	-4.92672398	-2.26264492	-4.85144468
H	-1.62974838	-2.78251470	-3.92144704
H	-2.74085848	1.94306752	-2.76295133
H	-0.60771970	2.98258923	1.31204331

### 5,6-dihydroindolo[2,3-*b*]indole (X = Ge; 3-CF<sub>3</sub>-phenyl)

*E*: -4587.14

*H*: -4449.76

*G*: -4491.98

*N*<sub>imag</sub> = 0

Ge	0.88365101	1.42536351	-0.00000000
C	1.19094448	-0.56592563	-0.00000000
C	0.03463634	0.88073924	1.79337044
C	0.03463634	0.88073924	-1.79337044
N	1.15064865	-1.17306491	-1.19771632
N	1.15064865	-1.17306491	1.19771632
C	-0.57328665	1.68213558	2.76693305
C	0.55874242	-0.37062960	2.22434508
C	-0.57328665	1.68213558	-2.76693305
C	0.55874242	-0.37062960	-2.22434508
H	1.20626763	-2.18266066	-1.32997925
H	1.20626763	-2.18266066	1.32997925
C	-0.71962349	1.24136904	4.08693195
H	-0.95936696	2.66266574	2.49497045
C	0.47548997	-0.80789496	3.54503563
C	-0.71962349	1.24136904	-4.08693195
H	-0.95936696	2.66266574	-2.49497045
C	0.47548997	-0.80789496	-3.54503563
C	-0.18610624	0.00400095	4.47498838
H	-1.23551039	1.85879215	4.81648324
H	0.91088925	-1.75496768	3.85361483
C	-0.18610624	0.00400095	-4.47498838
H	-1.23551039	1.85879215	-4.81648324
H	0.91088925	-1.75496768	-3.85361483
C	-0.37041717	-0.48579765	5.88883190
C	-0.37041717	-0.48579765	-5.88883190
F	-0.39573246	0.53594666	6.79967627
F	0.62366385	-1.34846409	6.27915165
F	-1.55759249	-1.17188875	6.04146528
F	-0.39573246	0.53594666	-6.79967627
F	0.62366385	-1.34846409	-6.27915165
F	-1.55759249	-1.17188875	-6.04146528

### 1,3-bis[4-(trifluoromethyl)phenyl]urea

E: -4875.34

H: -4722.00

G: -4762.80

N<sub>imag</sub> = 0

C	0.06319095	-8.41952394	0.82605314
C	0.07750647	-8.81355901	-0.52448146
C	0.05724666	-9.40701837	1.83193078
N	0.05759936	-7.07599571	1.25009783
C	0.08457797	-10.17099274	-0.84414501
H	0.08422109	-8.06252826	-1.30214477
C	0.06463906	-10.75705567	1.50205985
H	0.04905076	-9.11132823	2.88016332
C	0.05512759	-5.91864109	0.46493062
H	0.04907232	-6.95892232	2.25717363
C	0.08142818	-11.14921848	0.15657761
H	0.09885138	-10.46741547	-1.88877466
H	0.06378049	-11.50536538	2.28887011
N	0.05270534	-4.76128890	1.25010164
O	0.05508915	-5.91863945	-0.76021634
C	0.03648224	-12.61057646	-0.20173425
C	0.04708177	-3.41775908	0.82606224
H	0.06129701	-4.87836572	2.25717649
F	-1.25764355	-13.08505279	-0.26921026
F	0.68288719	-13.39405877	0.72171047
F	0.60646159	-12.87074739	-1.41989997
C	0.03267459	-3.02371825	-0.52446957
C	0.05308884	-2.43026876	1.83194382
C	0.02557565	-1.66628297	-0.84412696
H	0.02591162	-3.77474558	-1.30213573
C	0.04566788	-1.08023033	1.50207913
H	0.06135560	-2.72596342	2.88017455
C	0.02878672	-0.68806173	0.15659949
H	0.01123129	-1.36985583	-1.88875429
H	0.04657463	-0.33192395	2.28889262
C	0.07369993	0.77329911	-0.20170479
F	-0.49631187	1.03346906	-1.41985498
F	1.36781619	1.24779778	-0.26920619
F	-0.57269683	1.55676446	0.72176078

## Data S7. Cartesian coordinates and energies of optimized hydrogen-bonded complexes

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Below is a list consisting of the Cartesian coordinates (in Å), ADF total bond energies  $E$ , enthalpies  $H$ , Gibbs free energies  $G$  (in kcal mol<sup>-1</sup>), and the number of imaginary frequencies ( $N_{\text{imag}}$ ) of all optimized hydrogen-bonded complexes reported in this work, optimized at the ZORA-BLYP-D3(BJ)/TZ2P level. It is specified if  $C_{2v}$  symmetry is enforced during the optimization process.

### Formaldehyde–Urea

$E$ : -1559.34

$H$ : -1497.47

$G$ : -1526.53

$N_{\text{imag}} = 0$

N	1.15351322	-0.46839336	-0.26503547
N	-1.11817925	-0.45487371	0.28420239
C	0.02345509	0.29150225	0.01513160
C	-0.01607548	-4.58541910	-0.03744995
O	0.03297064	1.52266954	0.02409967
O	-0.00672882	-3.37089887	-0.01746189
H	2.02675962	0.04007522	-0.20852825
H	-1.98347145	0.06780697	0.23573500
H	1.17200607	-1.45268468	-0.01961169
H	-1.15188645	-1.43512230	0.02463312
H	0.91469765	-5.17859775	0.09080988
H	-0.95583087	-5.15967113	-0.18493820

### Formaldehyde–Thiourea

$E$ : -1481.96

$H$ : -1421.26

$G$ : -1451.64

$N_{\text{imag}} = 0$

N	1.15772326	-0.45957692	-0.16373446
N	-1.12307039	-0.44644661	0.17045731
C	0.02337417	0.27975018	0.01617927
C	-0.01570226	-4.54440136	-0.03253933
S	0.03733297	1.96458766	0.04532135
O	-0.00622696	-3.32843844	-0.03157409
H	2.03428966	0.04094910	-0.18879618
H	-1.99126107	0.06716077	0.21457674
H	1.15630215	-1.47085856	-0.07861506
H	-1.13802496	-1.45443015	0.05371417
H	0.92507071	-5.13397724	-0.01748645
H	-0.96557504	-5.11919043	-0.04854847

### Formaldehyde–Selenourea

$E$ : -1461.19

$H$ : -1400.77

$G$ : -1431.77

$N_{\text{imag}} = 0$

N	1.16464857	-0.46852983	-0.09231803
N	-1.13005006	-0.45253332	0.10541604
C	0.02289441	0.25660871	0.01352752
C	-0.01540095	-4.53117682	-0.03391233
Se	0.03733358	2.11052964	0.03153876
O	-0.00602287	-3.31424834	-0.02229106
H	2.03575099	0.03697806	-0.16322662
H	-1.99317705	0.06507003	0.18594170

H	1.16116448	-1.48408686	-0.10403711
H	-1.14245493	-1.46805454	0.09669327
H	0.92177961	-5.11917779	-0.12329958
H	-0.96155915	-5.10625402	0.04433119

### Formaldehyde-1-cyclohexylurea

*E*: -3583.20

*H*: -3426.89

*G*: -3461.73

*N*<sub>imag</sub> = 0

N	3.27482333	-0.24713294	-5.96070818
N	1.00213148	0.08412114	-6.38481949
C	2.18080458	0.58327307	-5.81938038
C	2.27266307	-3.87998088	-7.73137135
H	5.71934466	-0.75223811	-2.01719951
O	2.13733361	-2.69017478	-7.52843861
H	1.58186334	-4.44021423	-8.39727135
O	2.21611645	1.66759189	-5.23007485
H	5.92020322	0.76336012	-2.89424330
H	6.88464303	-1.99997021	-3.82802307
H	3.09314885	-4.46401142	-7.26113074
H	0.29535906	0.79496973	-6.53282633
H	3.11756372	-1.18297723	-6.32478091
H	1.06982199	-0.62769185	-7.10549715
H	7.91247784	-0.68022269	-3.26596604
C	4.51378207	-0.00508877	-5.21880574
C	7.03569934	-0.35560261	-5.23339538
C	5.71216977	-0.58953550	-5.98802083
C	4.45374552	-0.56272365	-3.77886552
C	5.77496628	-0.31961921	-3.02462236
C	6.97589814	-0.90299062	-3.79387071
H	4.62252362	1.08449405	-5.15784701
H	7.24093968	0.72491915	-5.19925534
H	7.86658399	-0.81624176	-5.78371423
H	5.55745346	-1.67323427	-6.12059326
H	5.75293889	-0.14639874	-6.99098823
H	4.25148377	-1.64449965	-3.82988197
H	3.61235038	-0.09724504	-3.25312635

### Formaldehyde-1-cyclohexylthiourea

*E*: -3506.80

*H*: -3351.02

*G*: -3388.31

*N*<sub>imag</sub> = 0

H	0.66238050	-0.37001684	1.34224472
H	-1.35148484	-0.74811382	0.51622071
N	-1.20588488	-0.01474794	-0.17137512
C	0.06125029	0.46180403	-0.42409573
S	0.38553010	1.38076091	-1.80468772
N	0.98278057	0.14619259	0.52557667
C	2.47131995	2.01006121	1.24543394
C	3.93128694	2.49912130	1.28266667
C	4.85441343	1.46219604	1.95125242
C	4.73703480	0.08622015	1.26680895
C	3.27617354	-0.40369011	1.21798475
H	5.89657971	1.80654858	1.92754725
H	2.65882063	0.76204974	-0.50103213
H	1.83195579	2.72451457	0.71555084
H	2.08478157	1.91596838	2.27236770
H	-1.85849634	0.05138160	-0.94101765
H	4.57756800	1.36274167	3.01249172
H	3.20523218	-1.35606148	0.67700096



C	2.36251623	0.63765668	0.54766722
H	2.92076799	-0.58608278	2.24596030
H	4.27476746	2.68104385	0.25339470
H	3.99191052	3.46048364	1.80877650
H	5.36158289	-0.65374712	1.78408761
H	5.12189593	0.16082607	0.23894538
H	0.44638395	-2.46780698	4.02356338
O	-0.56240523	-1.73911754	2.41699891
H	-1.24694847	-3.21416023	3.63384333
C	-0.45265356	-2.48394388	3.37135742

### Formaldehyde-1-cyclohexylselenourea

**E:** -3486.50

**H:** -3331.04

**G:** -3369.27

$N_{imag} = 0$

N	3.22209046	-0.27532978	-5.83276676
N	1.03309910	0.08212880	-6.44011295
C	2.15895956	0.56025573	-5.83348804
C	2.33284166	-3.79616462	-7.87356063
H	5.80028545	-0.62000488	-1.97292194
O	2.14590732	-2.67837613	-7.43135050
H	1.59963130	-4.28420256	-8.54922572
Se	2.15363898	2.25604572	-5.06643743
H	5.99486244	0.84143556	-2.93905977
H	6.87287102	-1.98881203	-3.75350775
H	3.24456583	-4.37763227	-7.62126580
H	0.26663379	0.73102458	-6.55314062
H	3.09765652	-1.19945014	-6.24382862
H	1.04827394	-0.77097922	-6.99149135
H	7.94588940	-0.66202735	-3.30400443
C	4.49826906	-0.01859275	-5.15730982
C	7.00261408	-0.42677200	-5.25210862
C	5.64709673	-0.67270682	-5.94414319
C	4.47304061	-0.50021654	-3.69210011
C	5.82654716	-0.24379492	-3.00362493
C	6.98586024	-0.89374950	-3.78338488
H	4.62643489	1.07087410	-5.15861277
H	7.22905875	0.64914431	-5.28591126
H	7.80195347	-0.93483644	-5.80700485
H	5.46635308	-1.75845185	-6.01256657
H	5.65934605	-0.28100786	-6.96929198
H	4.24602308	-1.57782222	-3.67607883
H	3.66239693	0.01773289	-3.16773697

### Formaldehyde-1-phenylurea

**Global minimum**

**E:** -3073.92

**H:** -2959.79

**G:** -2995.21

$N_{imag} = 0$

N	-0.98946711	0.03556856	0.53508894
N	-3.27370354	-0.34877490	0.54483561
C	-2.24647496	0.52538037	0.18738715
C	-0.61353805	-2.99992311	-0.68792553
O	-2.45939827	1.61769026	-0.33493422
O	-1.24287763	-2.98369736	0.35447337
H	-0.41516285	-3.95017121	-1.22698175
H	-4.17300308	-0.10887960	0.14525651
H	-0.97752976	-0.89009652	0.95531548
H	-3.07646865	-1.33987396	0.64133325

H	-0.21133362	-2.06998567	-1.14126449
H	-0.39271575	2.40341245	-0.68066399
C	0.27698701	0.59542113	0.28122147
C	1.40171428	-0.14573803	0.70022815
C	2.69194562	0.33192331	0.47009510
C	2.88654271	1.55623655	-0.17957914
C	1.76983197	2.29280237	-0.58909832
C	0.46986627	1.83007269	-0.36678997
H	1.25690876	-1.09185550	1.22015732
H	3.54576158	-0.25332777	0.80489171
H	3.89125614	1.93123779	-0.35786650
H	1.90626480	3.24886045	-1.09041854

**Local minimum**

**E:** -3073.52

**H:** -2960.01

**G:** -2994.31

$N_{imag} = 0$

N	-0.97041216	0.09619172	0.12687970
N	-3.25826861	-0.25778940	0.27610916
C	-2.23471989	0.67951603	0.13404334
C	-0.63500407	-3.83553764	-0.08988807
O	-2.45695417	1.88745561	0.06720745
O	-1.42916602	-2.91852977	-0.01233618
H	-0.96947336	-4.88049904	-0.25783244
H	-4.17976135	0.10623133	0.06746270
H	-0.94600859	-0.91966110	0.18020973
H	-3.09419817	-1.23206819	0.04657623
H	0.45970547	-3.67001420	0.00343008
H	-0.41050618	2.75976788	-0.06341879
C	0.28558423	0.72414690	0.04366493
C	1.42373220	-0.10887885	0.05941541
C	2.70560063	0.43368641	-0.02120020
C	2.88085639	1.81909764	-0.11868306
C	1.75235562	2.64555783	-0.13293085
C	0.46063667	2.11781975	-0.05313874
H	1.29489742	-1.18773636	0.13893176
H	3.56905383	-0.22821853	-0.00630934
H	3.87921306	2.24495302	-0.18109108
H	1.87283706	3.72450898	-0.20710173

**Formaldehyde-1-phenylthiourea**

**E:** -2994.31

**H:** -2881.33

**G:** -2917.71

$N_{imag} = 0$

N	-1.01128868	0.10055562	0.52661417
N	-3.22648151	-0.44356180	0.59205885
C	-2.28652408	0.47919240	0.17446365
C	-0.63612808	-2.88697388	-0.75010821
S	-2.76280592	1.88132561	-0.61674107
O	-1.17688789	-2.92594249	0.34071381
H	-0.40076613	-3.81615865	-1.30989554
H	-4.16623336	-0.27849837	0.25420650
H	-0.96570787	-0.79919114	1.00176453
H	-2.95214524	-1.41055242	0.74752709
H	-0.35614570	-1.92574457	-1.22863500
H	-0.32432507	2.43463731	-0.77104751
C	0.26670792	0.64053417	0.26514767
C	1.36056098	-0.11849592	0.73509313
C	2.66865697	0.31227582	0.52196247
C	2.91380322	1.50803857	-0.16385797

C	1.82973082	2.26111543	-0.62421171
C	0.51103600	1.84444482	-0.41750371
H	1.17626203	-1.04443942	1.27836242
H	3.49619665	-0.28633499	0.89615679
H	3.93300122	1.84782075	-0.33028027
H	2.00469822	3.19550773	-1.15330382

### Formaldehyde-1-phenylselenourea

**E:** -2973.04

**H:** -2861.02

**G:** -2896.77

$N_{imag} = 0$

N	-0.99956755	0.05284079	0.37954009
N	-3.22071242	-0.46572825	0.40411813
C	-2.27330779	0.49921734	0.16922890
C	-0.63440783	-3.04021609	-0.74398404
Se	-2.83419999	2.17329930	-0.38212261
O	-1.00525354	-2.93394302	0.41146438
H	-0.50798139	-4.03458262	-1.21938668
H	-4.18316252	-0.15368839	0.41064737
H	-0.94224886	-0.91172649	0.71444150
H	-2.99153429	-1.33047337	0.88642694
H	-0.40824423	-2.14996190	-1.36733862
H	-0.31393785	2.40460354	-0.88051153
C	0.27677488	0.63576492	0.19777805
C	1.36415280	-0.09337823	0.72291243
C	2.66888094	0.37386975	0.57288687
C	2.91335921	1.57685118	-0.10051848
C	1.83378673	2.29727804	-0.62012810
C	0.51977043	1.84028439	-0.48142827
H	1.17750398	-1.02248518	1.25911240
H	3.49364706	-0.20008595	0.98937080
H	3.92954391	1.94616912	-0.21482555
H	2.00886522	3.23331105	-1.14626149

### Formaldehyde-1-[3-(trifluoromethyl)phenyl]urea

**E:** -3469.63

**H:** -3351.95

**G:** -3390.27

$N_{imag} = 0$

N	-0.98280576	0.23205759	0.24931064
N	-3.16734823	-0.39925818	0.69137348
C	-2.27820743	0.65981892	0.54267842
C	-0.14688563	-3.43446941	-0.80369116
O	-2.61342545	1.83236312	0.69774919
O	-1.02229814	-2.72485604	-0.34455027
H	-0.35257442	-4.48096718	-1.10964444
H	-4.14289122	-0.12985193	0.70937194
H	-0.85380684	-0.77184080	0.13236095
H	-2.95080804	-1.31464032	0.31246616
H	0.89330988	-3.06975842	-0.93804959
H	1.34954795	-0.76557048	-0.30211745
C	0.16636071	1.00959605	0.05117765
C	0.19433450	2.41602607	0.12766566
C	1.39427610	3.09406690	-0.09869383
C	2.57624379	2.41355612	-0.40075247
C	2.54369738	1.01468444	-0.47411474
C	1.35688219	0.31889942	-0.24660737
H	-0.71850341	2.94945252	0.35890373
H	1.40281335	4.17995904	-0.03978432
H	3.50088452	2.95272662	-0.58015376

C	3.81239372	0.24548160	-0.74206202
F	4.65400734	0.90068494	-1.60014128
F	3.57210564	-0.99545422	-1.29045488
F	4.53210994	0.01887136	0.41110628

### Formaldehyde-1-[3-(trifluoromethyl)phenyl]thiourea

*E*: -3389.73

*H*: -3273.22

*G*: -3312.34

*N*<sub>imag</sub> = 0

N	-0.94336428	0.22638416	0.23484750
N	-3.09811587	-0.39436637	0.65344835
C	-2.21668862	0.65546620	0.54123713
C	-0.28752804	-3.47191346	-0.92779589
S	-2.73407419	2.23132120	0.80591558
O	-1.07738698	-2.72578157	-0.37846951
H	-0.58702577	-4.48849115	-1.25517034
H	-4.07187733	-0.14945056	0.77051820
H	-0.85218776	-0.78454500	0.12589352
H	-2.86807388	-1.32679091	0.32441057
H	0.76222950	-3.17027151	-1.12547924
H	-0.41871699	2.93930701	0.19117969
C	0.26786976	0.90532526	0.01354409
C	1.38686495	0.08341542	-0.22798123
C	2.63652629	0.64008609	-0.49043141
C	2.80716698	2.03139847	-0.50478477
C	1.69824116	2.84174878	-0.25584171
C	0.43502644	2.30163726	0.00109938
H	1.27283707	-0.99598315	-0.20875709
C	3.82194723	-0.26718859	-0.70301464
H	3.78099234	2.46450161	-0.71023623
F	4.52612096	-0.47909102	0.46097359
F	4.71405243	0.23862043	-1.60920109
F	3.45526839	-1.51528693	-1.15969825
H	1.81284530	3.92308213	-0.26504701

### Formaldehyde-1-[3-(trifluoromethyl)phenyl]selenourea

*E*: -3368.51

*H*: -3252.95

*G*: -3291.38

*N*<sub>imag</sub> = 0

N	-0.96629331	0.24241420	0.12693599
N	-3.16341246	-0.34225368	0.24253217
C	-2.26258617	0.68181690	0.18568985
C	-0.15937843	-3.56675657	-0.34429664
Se	-2.88606305	2.42358160	0.21443550
O	-1.01944704	-2.76566427	-0.02526532
H	-0.40243813	-4.63517535	-0.51538437
H	-4.14252402	-0.09647515	0.28831598
H	-0.86381839	-0.77437594	0.15223083
H	-2.89154790	-1.31993477	0.21039599
H	0.90032233	-3.26514013	-0.47771729
H	-0.41467618	2.92467315	-0.23338166
C	0.27435575	0.90159405	0.03188616
C	1.40804804	0.07105334	0.12486537
C	2.69062586	0.60311380	0.01038389
C	2.87502988	1.97911237	-0.18377260
C	1.74827075	2.79879198	-0.26742382
C	0.45416624	2.28113793	-0.16556901
H	1.28071344	-0.99447190	0.28935944
C	3.88524402	-0.30549746	0.15462194
H	3.87454643	2.39290679	-0.27291302

F	4.36256693	-0.33136584	1.44561247
F	4.93294767	0.07562765	-0.63886424
F	3.59423511	-1.61321630	-0.17107076
H	1.87387712	3.86781411	-0.42194160

### Formaldehyde-1-[3,5-bis(trifluoromethyl)phenyl]urea

*E*: -3863.05

*H*: -3741.30

*G*: -3784.01

*N*<sub>imag</sub> = 0

N	-0.97865241	0.12952767	0.03490702
N	-3.23617740	-0.37668520	-0.08534019
C	-2.27220850	0.61413700	-0.19128587
C	-0.27469045	-3.74323726	0.29661636
O	-2.54539534	1.78922533	-0.42219710
O	-1.11242036	-2.86402552	0.21779704
H	-0.55386721	-4.81478764	0.23205209
H	-4.15800324	-0.11343544	-0.40927532
H	-0.89058879	-0.87234729	0.19918796
H	-2.98840495	-1.35873536	-0.12774571
H	0.80289592	-3.51433710	0.43569218
H	-0.59059356	2.79700717	-0.37811427
C	0.22268913	0.84340967	0.02587821
C	1.40389549	0.11180606	0.26058567
C	2.64349387	0.74631178	0.25910305
C	2.74441115	2.12340134	0.03163558
C	1.56896849	2.84406539	-0.19385940
C	0.31338330	2.22912284	-0.20177312
H	1.34627911	-0.95738709	0.44153816
C	3.88813935	-0.05216293	0.56621352
H	3.70888825	2.61722398	0.03122475
C	1.64715401	4.32617816	-0.49543749
F	2.80836181	4.89081471	-0.03827116
F	0.61261403	5.02486289	0.06219575
F	1.60027104	4.56508995	-1.84988841
F	4.98148076	0.40103074	-0.11749566
F	3.74415446	-1.38478206	0.25651459
F	4.21019671	-0.00007429	1.90308728

### Formaldehyde-1-[3,5-bis(trifluoromethyl)phenyl]thiourea

*E*: -3782.83

*H*: -3662.28

*G*: -3705.82

*N*<sub>imag</sub> = 0

N	-1.03854796	0.20608217	0.05181554
N	-3.21969139	-0.45721752	-0.01712838
C	-2.35287499	0.60238049	-0.11125092
C	-0.14210512	-3.65482475	0.21676287
S	-2.92572581	2.15816220	-0.36574473
O	-1.00525183	-2.79613712	0.23084602
H	-0.40062915	-4.73119383	0.15235242
H	-4.19412875	-0.26409484	-0.20319190
H	-0.91189981	-0.79525342	0.20562784
H	-2.90346389	-1.42132050	0.00199734
H	0.93713311	-3.40014956	0.26684883
H	-0.56568618	2.88413763	-0.40719436
C	0.17426347	0.90899558	0.03088509
C	1.32980055	0.14035207	0.27982794
C	2.59173024	0.72590964	0.26527637
C	2.74253188	2.09464821	0.01265385
C	1.59412697	2.85210543	-0.22505405
C	0.31596965	2.28358961	-0.22217888

H	1.23250234	-0.92112297	0.48487030
C	3.80627176	-0.11369107	0.58331306
H	3.72440213	2.55331628	0.00278803
C	1.72592376	4.32490644	-0.55559173
F	2.89576714	4.86012630	-0.08495506
F	0.70379393	5.06698214	-0.03542143
F	1.71622748	4.53434851	-1.91537134
F	4.90568848	0.26818585	-0.13272379
F	3.60034422	-1.44955874	0.32217295
F	4.15144776	-0.02943669	1.91166064

### Formaldehyde-1-[3,5-bis(trifluoromethyl)phenyl]selenourea

**E:** -3761.56

**H:** -3641.37

**G:** -3685.80

$N_{imag} = 0$

N	-1.04517801	0.18928275	0.09720800
N	-3.23210999	-0.44544651	0.06069290
C	-2.35595956	0.59940690	0.07293091
C	-0.08426563	-3.60350248	-0.08353648
Se	-3.00292862	2.32888063	0.08220039
O	-0.98141561	-2.80110738	0.10359799
H	-0.29558153	-4.68467117	-0.20849460
H	-4.21803332	-0.22464657	0.09062619
H	-0.91405439	-0.82198683	0.17397554
H	-2.93512639	-1.41573541	0.09982132
H	0.97878935	-3.28940222	-0.13736659
H	-0.56546172	2.82672110	-0.52719381
C	0.17091670	0.89124303	0.07156997
C	1.31850012	0.14414752	0.39519326
C	2.58231006	0.73008343	0.35752489
C	2.73423576	2.07682007	0.01371060
C	1.58901544	2.81405665	-0.30146357
C	0.31395788	2.24286431	-0.28407002
H	1.21637633	-0.89786293	0.68347281
C	3.78490975	-0.09252003	0.75476082
H	3.71550553	2.53660970	-0.00942070
C	1.74094076	4.25526704	-0.74328500
F	2.80569117	4.86973434	-0.13676669
F	0.63372991	5.00476730	-0.47618773
F	1.96217678	4.33915447	-2.10005321
F	4.93594229	0.34136089	0.16293476
F	3.63497653	-1.42074160	0.41913662
F	4.00006041	-0.06254946	2.11237398

### Formaldehyde-1,3-dicyclohexylurea

**E:** -5606.83

**H:** -5353.74

**G:** -5401.58

$N_{imag} = 0$

H	-0.05777810	1.09467044	-1.13238953
H	0.05777810	-1.09467044	-1.13238953
N	0.26463644	-1.13583656	-0.13835780
C	-0.00000000	0.00000000	0.61597988
O	-0.00000000	0.00000000	1.85359185
N	-0.26463644	1.13583656	-0.13835780
H	2.17816014	4.80703455	1.40201692
H	0.74561562	4.35425424	2.32397147
H	0.76309224	5.54873471	-0.50629247
H	0.25222783	6.37944570	0.96460919
C	-0.25665674	2.46337665	0.48155254
C	-1.13301874	4.84558631	0.27584117

C	-1.11690114	3.43516896	-0.34590272
C	1.17339261	3.01680103	0.67476917
C	1.15431624	4.42282332	1.30447932
C	0.29235914	5.39617597	0.47753237
H	-0.70958609	2.33719862	1.47217926
H	-1.64241824	4.80069532	1.25026630
H	-1.72011160	5.52610073	-0.35487060
H	-0.70674404	3.49428040	-1.36763972
H	-2.13552232	3.03639839	-0.43198616
H	1.66841728	3.05966900	-0.30855927
H	1.74277541	2.31789502	1.29800555
C	-1.17339261	-3.01680103	0.67476917
C	-1.15431624	-4.42282332	1.30447932
C	0.25665674	-2.46337665	0.48155254
H	-1.74277541	-2.31789502	1.29800555
H	-1.66841728	-3.05966900	-0.30855927
C	-0.29235914	-5.39617597	0.47753237
H	-2.17816014	-4.80703455	1.40201692
H	-0.74561562	-4.35425424	2.32397147
C	1.11690114	-3.43516896	-0.34590272
H	0.70958609	-2.33719862	1.47217926
C	1.13301874	-4.84558631	0.27584117
H	-0.25222783	-6.37944570	0.96460919
H	-0.76309224	-5.54873471	-0.50629247
H	2.13552232	-3.03639839	-0.43198616
H	0.70674404	-3.49428040	-1.36763972
H	1.72011160	-5.52610073	-0.35487060
H	1.64241824	-4.80069532	1.25026630
C	0.00000000	0.00000000	-4.29855089
H	0.08706112	0.94147473	-4.88262234
H	-0.08706112	-0.94147473	-4.88262234
O	0.00000000	0.00000000	-3.08422616

### Formaldehyde-1,3-dicyclohexylthiourea

*E*: -5531.02

*H*: -5280.22

*G*: -5324.90

*N*<sub>imag</sub> = 0

H	-0.06778414	1.05314379	-1.01341577
H	0.06591666	-1.05336422	-1.01334941
N	0.17041779	-1.13499789	-0.00483617
C	-0.00104085	-0.00006341	0.74210287
S	-0.00116237	-0.00001850	2.43750596
N	-0.17239021	1.13483175	-0.00491800
H	2.15896043	4.92559541	1.37825902
H	0.70842080	4.50097236	2.28540449
H	0.78770776	5.52904054	-0.60915990
H	0.22023066	6.43482594	0.79511822
C	-0.20968316	2.49517064	0.53660689
C	-1.11869875	4.83912817	0.15987156
C	-1.06241366	3.39470273	-0.37586057
C	1.20629534	3.07881850	0.73129450
C	1.14476172	4.51832618	1.27547706
C	0.29128476	5.42565705	0.36844788
H	-0.68635082	2.41921625	1.52103652
H	-1.65568883	4.84235381	1.12009828
H	-1.69803517	5.46976505	-0.52715699
H	-0.62517125	3.40023460	-1.38813718
H	-2.07247717	2.97437849	-0.46298037
H	1.72772790	3.07090198	-0.23890569
H	1.76357402	2.42614060	1.41215680
C	-1.20842796	-3.07892005	0.73124541
C	-1.14701489	-4.51840235	1.27550880

C	0.20759432	-2.49531037	0.53676466
H	-1.76580692	-2.42619786	1.41198338
H	-1.72969995	-3.07104030	-0.23904142
C	-0.29340519	-5.42579488	0.36866651
H	-2.16123922	-4.92564529	1.37814161
H	-0.71084177	-4.50100777	2.28550809
C	1.06046071	-3.39490573	-0.37551343
H	0.68409894	-2.41931249	1.52126971
C	1.11662578	-4.83930616	0.16029970
H	-0.22244498	-6.43494503	0.79539671
H	-0.78966594	-5.52921398	-0.60901987
H	2.07054740	-2.97460592	-0.46248271
H	0.62338973	-3.40047900	-1.38786387
H	1.69606568	-5.46998875	-0.52659956
H	1.65345322	-4.84249536	1.12061755
C	-0.00026440	-0.00015061	-4.14688062
H	0.01992670	0.94521176	-4.72958873
H	-0.02008999	-0.94549871	-4.72962429
O	-0.00065231	-0.00016547	-2.93153970

### Formaldehyde-1,3-dicyclohexylselenourea

*E*: -5511.05

*H*: -5260.55

*G*: -5305.91

*N*<sub>imag</sub> = 0

H	-0.06871339	1.05614501	-1.01483806
H	0.06783163	-1.05639429	-1.01475180
N	0.14430769	-1.13696759	-0.00258851
C	-0.00124661	-0.00010623	0.73086577
Se	-0.00212658	-0.00009106	2.59901886
N	-0.14610158	1.13673998	-0.00274550
H	2.16159996	4.94364855	1.36689495
H	0.71781840	4.50794741	2.27967258
H	0.77837082	5.53759018	-0.61518379
H	0.20954225	6.43886423	0.79140085
C	-0.19269883	2.49920808	0.53636993
C	-1.12014285	4.83389819	0.16105142
C	-1.05573861	3.38968938	-0.37465012
C	1.22014399	3.09039173	0.72386875
C	1.14995674	4.52928720	1.26811860
C	0.28646213	5.43035176	0.36429132
H	-0.66431734	2.41992138	1.52323191
H	-1.65355282	4.83308634	1.12316681
H	-1.70654167	5.46000084	-0.52403367
H	-0.62287351	3.39764424	-1.38882396
H	-2.06330937	2.96224790	-0.45644070
H	1.73853952	3.08528039	-0.24794070
H	1.78251827	2.44135962	1.40415929
C	-1.22284546	-3.09042883	0.72282141
C	-1.15334350	-4.52932108	1.26716404
C	0.19024504	-2.49943245	0.53659765
H	-1.78575410	-2.44130811	1.40258484
H	-1.74035214	-3.08527067	-0.24946149
C	-0.28915025	-5.43051324	0.36413449
H	-2.16513107	-4.94354601	1.36503196
H	-0.72211863	-4.50801808	2.27910861
C	1.05399776	-3.39004250	-0.37361788
H	0.66097471	-2.42018770	1.52388756
C	1.11771917	-4.83425089	0.16216842
H	-0.21275481	-6.43903184	0.79132394
H	-0.78018243	-5.53769486	-0.61578676
H	2.06170052	-2.96273738	-0.45449556
H	0.62205916	-3.39795891	-1.38818703



H	1.70466104	-5.46044374	-0.52236875
H	1.65024873	-4.83349310	1.12477169
C	0.00106207	0.00007079	-4.12892038
H	0.01802878	0.94550710	-4.71102382
H	-0.01530723	-0.94521687	-4.71128183
O	0.00043713	-0.00008462	-2.91269435

### Formaldehyde-1,3-diphenylurea

*E*: -4587.19

*H*: -4421.98

*G*: -4462.30

*N*<sub>imag</sub> = 0

N	0.17471484	3.05648197	-0.24606526
N	0.19881751	0.75011517	-0.24606474
C	0.18676841	1.90329876	0.54188283
C	0.21360525	-0.59524717	0.17070599
C	0.22178803	-1.57612818	-0.84293322
C	0.23687596	-2.93217792	-0.52040817
C	0.24404008	-3.33997667	0.81892908
C	0.23587590	-2.36706478	1.82350231
C	0.22073631	-1.00298838	1.51807934
C	0.15992418	4.40184446	0.17070483
C	0.15173956	5.38272495	-0.84293488
C	0.13665113	6.73877486	-0.52041053
C	0.12948292	7.14657426	0.81892650
C	0.13765717	6.17366300	1.82350024
C	0.15279624	4.80958643	1.51807797
H	0.13225072	6.47504649	2.86907306
H	0.21625181	-1.26508438	-1.88698154
O	0.18676854	1.90329900	1.77104729
H	0.17701025	2.92588943	-1.25328404
H	0.21436909	-0.25472174	2.29912835
H	0.19651917	0.88070722	-1.25328355
H	0.24297452	-3.67150334	-1.31862185
H	0.25575652	-4.39701352	1.07292701
H	0.24128030	-2.66844777	2.86907529
H	0.15727364	5.07168062	-1.88698304
H	0.13054910	7.47809983	-1.31862460
H	0.11776120	8.20361119	1.07292387
H	0.15916352	4.06132021	2.29912738
H	0.19505760	0.95761582	-4.91910048
H	0.17848023	2.84899885	-4.91909197
C	0.18676591	1.90330469	-4.33804757
O	0.18676425	1.90329924	-3.12224829

### Formaldehyde-1,3-diphenylthiourea

*E*: -4504.57

*H*: -4341.86

*G*: -4379.59

*N*<sub>imag</sub> = 0

N	0.14227043	3.03602369	-0.06349009
N	0.23225054	0.77083317	-0.06276762
C	0.18635320	1.90360441	0.73573897
C	0.18692813	-0.60624153	0.24737387
C	0.70448121	-1.48115864	-0.72992234
C	0.66498974	-2.86203967	-0.54246400
C	0.11215257	-3.39828749	0.62648597
C	-0.40641585	-2.53082705	1.59307808
C	-0.37951482	-1.14469714	1.41561533
C	0.18658842	4.41310470	0.24691265
C	-0.33374840	5.28794416	-0.72889427
C	-0.29492150	6.66880764	-0.54092256

C	0.25993534	7.20495967	0.62709668
C	0.78131156	6.33751955	1.59222714
C	0.75517626	4.95147302	1.41413801
H	1.22209644	6.74026321	2.50174522
H	1.14522639	-1.06688752	-1.63577605
S	0.18439365	1.90433157	2.41062578
H	-0.03829490	2.86353674	-1.04997149
H	-0.77927098	-0.48309629	2.17179392
H	0.41369279	0.94313463	-1.04912443
H	1.07368938	-3.51837072	-1.30773950
H	0.08603368	-4.47438719	0.77964223
H	-0.84555288	-2.93358900	2.50338619
H	-0.77619723	4.87367584	-1.63391371
H	-0.70578798	7.32516028	-1.30501680
H	0.28548260	8.28101209	0.78068657
H	1.15722599	4.28988376	2.16912233
H	0.55473489	1.03003938	-4.73463871
H	-0.17624214	2.77465536	-4.73534419
C	0.18897972	1.90247116	-4.15413267
O	0.18842359	1.90273082	-2.93814686

### Formaldehyde-1,3-diphenylselenourea

*E*: -4482.93

*H*: -4320.06

*G*: -4360.41

*N*<sub>imag</sub> = 0

N	-0.06014730	1.13085606	0.04731188
N	0.06014730	-1.13085606	0.04731188
C	0.00000000	-0.00000000	0.83291408
C	0.00269119	-2.50491123	0.38443809
C	0.71668479	-3.39204335	-0.44167640
C	0.66856104	-4.76801340	-0.21178301
C	-0.08819818	-5.27680461	0.84946115
C	-0.80441031	-4.39320103	1.66475071
C	-0.77131940	-3.01508027	1.43880763
C	-0.00269119	2.50491123	0.38443809
C	-0.71668479	3.39204335	-0.44167640
C	-0.66856104	4.76801340	-0.21178301
C	0.08819818	5.27680461	0.84946115
C	0.80441031	4.39320103	1.66475071
C	0.77131940	3.01508027	1.43880763
H	1.40434869	4.77790751	2.48667062
H	1.31935120	-2.99427400	-1.25681160
Se	0.00000000	-0.00000000	2.67688616
H	-0.27237192	0.96938591	-0.93580373
H	-1.32726699	-2.33689784	2.07298175
H	0.27237192	-0.96938591	-0.93580373
H	1.23123964	-5.43966249	-0.85639729
H	-0.12052806	-6.34734334	1.03715830
H	-1.40434869	-4.77790751	2.48667062
H	-1.31935120	2.99427400	-1.25681160
H	-1.23123964	5.43966249	-0.85639729
H	0.12052806	6.34734334	1.03715830
H	1.32726699	2.33689784	2.07298175
H	0.42550597	-0.84466544	-4.61145154
H	-0.42550597	0.84466544	-4.61145154
C	0.00000000	-0.00000000	-4.03077073
O	0.00000000	-0.00000000	-2.81434258

### Formaldehyde-1,3-bis[3-(trifluoromethyl)phenyl]urea

*E*: -5378.32

*H*: -5204.75

*G*: -5252.56

$N_{imag} = 0$

N	0.00897777	1.15194557	0.23712105
N	-0.00897777	-1.15194557	0.23712105
C	0.00000000	-0.00000000	1.02685307
C	-0.02229998	-2.49333209	0.65611415
C	-0.02502089	-3.47025066	-0.35798771
C	-0.04493502	-4.82587772	-0.03244235
C	-0.05736069	-5.23903916	1.30657467
C	-0.05353113	-4.26557998	2.30731736
C	-0.03586364	-2.90219407	2.00319160
C	0.02229998	2.49333209	0.65611415
C	0.02502089	3.47025066	-0.35798771
C	0.04493502	4.82587772	-0.03244235
C	0.05736069	5.23903916	1.30657467
C	0.05353113	4.26557998	2.30731736
C	0.03586364	2.90219407	2.00319160
F	0.47496786	5.37870915	-2.32830831
H	-0.01822349	-3.16501933	-1.40094739
O	0.00000000	-0.00000000	2.25514199
H	0.00482112	1.02017145	-0.77084542
H	-0.03464821	-2.15467091	2.78499001
H	-0.00482112	-1.02017145	-0.77084542
C	0.00710607	-5.85628083	-1.13340533
H	-0.07544453	-6.29522280	1.55569429
F	0.71549839	6.98013780	-0.83286883
H	0.01822349	3.16501933	-1.40094739
C	-0.00710607	5.85628083	-1.13340533
H	0.07544453	6.29522280	1.55569429
H	0.03464821	2.15467091	2.78499001
F	1.29632919	-6.27756200	-1.37947160
F	-0.47496786	-5.37870915	-2.32830831
F	-0.71549839	-6.98013780	-0.83286883
F	-1.29632919	6.27756200	-1.37947160
H	0.06663936	4.57044849	3.35105584
H	-0.06663936	-4.57044849	3.35105584
H	-0.00609724	-0.94597226	-4.39717925
H	0.00609724	0.94597226	-4.39717925
C	-0.00000000	-0.00000000	-3.81822171
O	-0.00000000	-0.00000000	-2.60097896

### Formaldehyde-1,3-bis[3-(trifluoromethyl)phenyl]thiourea

**E:** -5295.39

**H:** -5123.61

**G:** -5170.58

$N_{imag} = 0$

N	-0.94076821	0.61734903	0.55031729
N	1.22600294	0.03615879	0.25421073
C	0.35579668	0.81517389	1.00355377
C	2.61705638	-0.17836268	0.30117604
C	3.13073630	-0.99011925	-0.73201836
C	4.48840786	-1.29416973	-0.78817418
C	5.37224561	-0.79252880	0.17797451
C	4.86013049	0.00909077	1.19800836
C	3.49977127	0.32192010	1.27490611
C	-2.18651602	1.16478353	0.91319843
C	-3.30003902	0.60222592	0.25448612
C	-4.58693761	1.06842596	0.51026291
C	-4.80083031	2.10171143	1.43374930
C	-3.69714822	2.65544448	2.08227874
C	-2.39687130	2.20495922	1.83591392
F	-5.41816685	-0.22218935	-1.33555214
H	2.45843694	-1.38667790	-1.48803926

S	0.79998190	1.83285680	2.25641470
H	-1.03779282	-0.07848470	-0.18665195
H	3.11776807	0.94486381	2.07143909
H	0.79223324	-0.48412247	-0.50596904
C	5.02172399	-2.12368163	-1.93015744
H	6.43011935	-1.03138878	0.13260995
F	-6.74685631	1.31936721	-0.48827194
H	-3.15055584	-0.19905152	-0.46413900
C	-5.76626269	0.41785202	-0.16987515
H	-5.80482673	2.46401097	1.63107927
H	-1.55137766	2.64392904	2.34669382
F	5.54116963	-1.33795171	-2.93521384
F	4.05325114	-2.90500020	-2.51430481
F	6.02862173	-2.96493084	-1.53756771
F	-6.35824580	-0.53407016	0.63058334
H	-3.84423212	3.46154157	2.79709358
H	5.53040996	0.40169897	1.95890960
H	-0.17954655	-2.67711109	-3.25910577
H	-2.00359903	-2.32474359	-2.89863577
C	-0.93818476	-2.14949652	-2.64622722
O	-0.61510564	-1.40928258	-1.73495602

### Formaldehyde-1,3-bis[3-(trifluoromethyl)phenyl]selenourea

**E:** -5273.48

**H:** -5102.81

**G:** -5148.41

**N<sub>imag</sub>** = 0

N	0.05068670	1.12932955	0.36387432
N	-0.05068670	-1.12932955	0.36387432
C	-0.00000000	-0.00000000	1.15468111
C	-0.21294794	-2.49562229	0.68036322
C	0.31566766	-3.41173652	-0.24545370
C	0.15539263	-4.78454210	-0.05052489
C	-0.51989320	-5.26777972	1.07748801
C	-1.04862306	-4.35187186	1.98963514
C	-0.91079299	-2.97496174	1.80158445
C	0.21294794	2.49562229	0.68036322
C	-0.31566766	3.41173652	-0.24545370
C	-0.15539263	4.78454210	-0.05052489
C	0.51989320	5.26777972	1.07748801
C	1.04862306	4.35187186	1.98963514
C	0.91079299	2.97496174	1.80158445
F	-0.84694408	5.22572983	-2.30333253
H	0.85219590	-3.04741731	-1.11757252
Se	0.00000000	0.00000000	2.99647198
H	-0.14501675	0.97710345	-0.62490900
H	-1.33025293	-2.27507505	2.51169097
H	0.14501675	-0.97710345	-0.62490900
C	0.77347904	-5.74802677	-1.03328423
H	-0.63845700	-6.33583388	1.22972142
F	-0.07529258	6.92210222	-1.12525262
H	-0.85219590	3.04741731	-1.11757252
C	-0.77347904	5.74802677	-1.03328423
H	0.63845700	6.33583388	1.22972142
H	1.33025293	2.27507505	2.51169097
F	2.06130900	-6.08605015	-0.68158013
F	0.84694408	-5.22572983	-2.30333253
F	0.07529258	-6.92210222	-1.12525262
F	-2.06130900	6.08605015	-0.68158013
H	1.58962478	4.71326929	2.86072641
H	-1.58962478	-4.71326929	2.86072641
H	0.26696135	-0.90774590	-4.26547080
H	-0.26696135	0.90774590	-4.26547080

C	0.00000000	-0.00000000	-3.68707115
O	0.00000000	-0.00000000	-2.46948305

### Formaldehyde-1,3-bis[3,5-bis(trifluoromethyl)phenyl]urea

**E:** -6164.47

**H:** -5982.69

**G:** -6038.97

$N_{imag} = 0$

H	-2.84625191	-0.05379943	3.97625614
H	-4.89489854	-0.05499483	3.97625304
N	-5.02343068	-0.06273296	2.96742562
C	-3.87057256	-0.05442479	2.17785454
H	-7.05267928	-0.04798157	4.59002750
N	-2.71771728	-0.04607840	2.96742894
H	-1.73995370	0.00573026	0.41425462
O	-3.87056930	-0.05443441	0.95127873
C	-1.38150003	-0.03437292	2.53976736
C	-0.39397619	-0.04501952	3.54435410
C	0.95625680	-0.02536141	3.20602744
C	1.36018423	0.00015245	1.86574433
C	0.37536466	0.01152327	0.87700857
C	-0.98777107	-0.00692195	1.19131152
H	-0.68846437	-0.06083123	4.59003094
C	2.00164408	-0.08775287	4.29617793
H	2.41128378	0.02073431	1.60348295
C	0.76928335	0.00599216	-0.58605054
C	-6.35964774	-0.07443681	2.53976242
C	-6.75338011	-0.10190237	1.19130841
C	-8.11651799	-0.12031892	0.87700832
C	-9.10133444	-0.10893949	1.86574543
C	-8.69740310	-0.08346515	3.20602888
C	-7.34717021	-0.06377906	3.54435130
H	-6.00119968	-0.11452065	0.41424850
C	-8.51042896	-0.11479193	-0.58605288
H	-10.15243438	-0.12952223	1.60348662
C	-9.74279029	-0.02113231	4.29618262
F	-8.32282152	1.12456933	-1.14965129
F	-9.82535447	-0.44091350	-0.77493812
F	-7.76566750	-0.99720859	-1.32120397
F	2.08414742	0.33236140	-0.77494414
F	0.58192908	-1.23344212	-1.14957589
F	0.02435351	0.88821441	-1.32125995
F	2.42588820	-1.37778117	4.51596089
F	1.53076333	0.37672316	5.49912180
F	3.11469952	0.64432188	3.98992935
F	-10.16708208	1.26887694	4.51598153
F	-9.27189124	-0.48560393	5.49912099
F	-10.85582058	-0.75324299	3.98992614
C	-3.87057802	-0.05438139	7.00502259
O	-3.87057756	-0.05438784	5.78709157
H	-4.81640363	-0.05266208	7.58344124
H	-2.92475280	-0.05609983	7.58344187

### $C_{2v}$ symmetry enforced

**E:** -6164.31

**H:** -5983.15

**G:** -6037.12

$N_{imag} = 4$  (-5.7; -6.0; -6.2; -7.3  $\text{cm}^{-1}$ )

H	1.02250541	0.00000000	1.38235625
H	-1.02250541	0.00000000	1.38235625
N	-1.15253537	0.00000000	0.37363306
C	-0.00000000	0.00000000	-0.41666650

H	-3.18211674	0.00000000	1.99725311
N	1.15253537	0.00000000	0.37363306
H	2.13140298	0.00000000	-2.17968708
O	-0.00000000	0.00000000	-1.64328007
C	2.48998555	0.00000000	-0.05042175
C	3.47551039	0.00000000	0.95014550
C	4.83008190	0.00000000	0.61014191
C	5.23131753	0.00000000	-0.72532074
C	4.24212985	0.00000000	-1.71742078
C	2.88377876	0.00000000	-1.40405837
H	3.18211674	0.00000000	1.99725311
C	5.84560695	0.00000000	1.72960261
H	6.28284966	0.00000000	-0.98830178
C	4.68906191	0.00000000	-3.16473588
C	-2.48998555	0.00000000	-0.05042175
C	-2.88377876	0.00000000	-1.40405837
C	-4.24212985	0.00000000	-1.71742078
C	-5.23131753	0.00000000	-0.72532074
C	-4.83008190	0.00000000	0.61014191
C	-3.47551039	0.00000000	0.95014550
H	-2.13140298	0.00000000	-2.17968708
C	-4.68906191	0.00000000	-3.16473588
H	-6.28284966	0.00000000	-0.98830178
C	-5.84560695	0.00000000	1.72960261
F	-5.46176589	1.10034866	-3.45023031
F	-5.46176589	-1.10034866	-3.45023031
F	-3.64910062	0.00000000	-4.04483698
F	5.46176589	1.10034866	-3.45023031
F	5.46176589	-1.10034866	-3.45023031
F	3.64910062	0.00000000	-4.04483698
F	5.70135442	-1.09979642	2.54467826
F	5.70135442	1.09979642	2.54467826
F	7.13203689	0.00000000	1.28058648
F	-5.70135442	1.09979642	2.54467826
F	-5.70135442	-1.09979642	2.54467826
F	-7.13203689	0.00000000	1.28058648
C	-0.00000000	0.00000000	4.41131358
O	-0.00000000	0.00000000	3.19337973
H	-0.94577903	0.00000000	4.98979515
H	0.94577903	0.00000000	4.98979515

### Formaldehyde-1,3-bis[3,5-bis(trifluoromethyl)phenyl]thiourea

*E*: -6081.27

*H*: -5901.44

*G*: -5956.41

*N*<sub>imag</sub> = 0

H	-0.16306477	-0.96533739	1.12358460
H	0.16306477	0.96533739	1.12358460
N	0.00299116	1.13279501	0.13155202
C	0.00000000	-0.00000000	-0.67231653
H	0.77834192	2.99363012	1.74610743
N	-0.00299116	-1.13279501	0.13155202
H	0.93947786	-2.35590241	-2.15113500
S	0.00000000	-0.00000000	-2.34127943
C	0.06257729	-2.50157033	-0.18418685
C	-0.38132521	-3.38800348	0.81455216
C	-0.31105357	-4.76633892	0.62065997
C	0.18817512	-5.29506591	-0.57363964
C	0.63461730	-4.40899815	-1.55749232
C	0.58290351	-3.02374531	-1.38012351
H	-0.77834192	-2.99363012	1.74610743
C	-0.83782155	-5.69130886	1.69404052
H	0.24215842	-6.36681571	-0.72554021

C	1.15207985	-4.95856422	-2.87110835
C	-0.06257729	2.50157033	-0.18418685
C	-0.58290351	3.02374531	-1.38012351
C	-0.63461730	4.40899815	-1.55749232
C	-0.18817512	5.29506591	-0.57363964
C	0.31105357	4.76633892	0.62065997
C	0.38132521	3.38800348	0.81455216
H	-0.93947786	2.35590241	-2.15113500
C	-1.15207985	4.95856422	-2.87110835
H	-0.24215842	6.36681571	-0.72554021
C	0.83782155	5.69130886	1.69404052
F	-0.13989444	5.08857489	-3.79136343
F	-1.71280487	6.19976393	-2.72532583
F	-2.09910940	4.15082991	-3.43590863
F	1.71280487	-6.19976393	-2.72532583
F	0.13989444	-5.08857489	-3.79136343
F	2.09910940	-4.15082991	-3.43590863
F	-2.18298622	-5.93091442	1.54142218
F	-0.67843444	-5.16515689	2.95367203
F	-0.21653902	-6.90762137	1.68465936
F	2.18298622	5.93091442	1.54142218
F	0.67843444	5.16515689	2.95367203
F	0.21653902	6.90762137	1.68465936
C	-0.00000000	-0.00000000	4.17466944
O	-0.00000000	-0.00000000	2.95655845
H	0.26148519	0.90916412	4.75262215
H	-0.26148519	-0.90916412	4.75262215

**C<sub>2v</sub> symmetry enforced**

**E:** -6081.00

**H:** -5901.09

**G:** -5956.26

**N<sub>imag</sub>** = 6 (-8.8; -9.9; -10.9 -13.4; -13.5; -14.1 cm<sup>-1</sup>)

H	0.94885540	0.00000000	1.03489333
H	-0.94885540	-0.00000000	1.03489333
N	-1.13152530	0.00000000	0.03289127
C	0.00000000	-0.00000000	-0.77388354
H	-2.91402575	-0.00000000	1.88154573
N	1.13152530	-0.00000000	0.03289127
H	2.45970883	-0.00000000	-2.40053103
S	0.00000000	0.00000000	-2.44417857
C	2.50974212	-0.00000000	-0.24251165
C	3.35077864	-0.00000000	0.88565130
C	4.73814415	-0.00000000	0.74120099
C	5.32332347	-0.00000000	-0.52546146
C	4.48181753	-0.00000000	-1.64404044
C	3.09210197	-0.00000000	-1.52475634
H	2.91402575	0.00000000	1.88154573
C	5.58453298	0.00000000	1.99358750
H	6.40139658	-0.00000000	-0.63873523
C	5.12358586	0.00000000	-3.01674841
C	-2.50974212	0.00000000	-0.24251165
C	-3.09210197	0.00000000	-1.52475634
C	-4.48181753	0.00000000	-1.64404044
C	-5.32332347	0.00000000	-0.52546146
C	-4.73814415	0.00000000	0.74120099
C	-3.35077864	0.00000000	0.88565130
H	-2.45970883	0.00000000	-2.40053103
C	-5.12358586	-0.00000000	-3.01674841
H	-6.40139658	0.00000000	-0.63873523
C	-5.58453298	-0.00000000	1.99358750
F	-5.92789139	1.10034949	-3.19294218
F	-5.92789139	-1.10034949	-3.19294218
F	-4.21392470	-0.00000000	-4.03060124

F	5.92789139	1.10034949	-3.19294218
F	5.92789139	-1.10034949	-3.19294218
F	4.21392470	0.00000000	-4.03060124
F	5.32551027	-1.09969657	2.78019390
F	5.32551027	1.09969657	2.78019390
F	6.92112199	0.00000000	1.73156037
F	-5.32551027	1.09969657	2.78019390
F	-5.32551027	-1.09969657	2.78019390
F	-6.92112199	-0.00000000	1.73156037
C	0.00000000	0.00000000	4.09391448
O	0.00000000	-0.00000000	2.87558889
H	-0.94586984	0.00000000	4.67183125
H	0.94586984	-0.00000000	4.67183125

### Formaldehyde-1,3-bis[3,5-bis(trifluoromethyl)phenyl]selenourea

*E*: -6059.59

*H*: -5880.29

*G*: -5935.88

*N*<sub>imag</sub> = 0

H	-0.21862778	-0.99217372	1.27411188
H	0.21862778	0.99217372	1.27411188
N	0.00946360	1.13398771	0.28611229
C	0.00000000	-0.00000000	-0.49979239
H	1.29862218	3.06655476	1.47417451
N	-0.00946360	-1.13398771	0.28611229
H	1.47432550	-2.24039428	-1.71292951
Se	0.00000000	-0.00000000	-2.33772972
C	0.07042182	-2.49139515	-0.09203797
C	-0.66058200	-3.41527739	0.66655583
C	-0.58818288	-4.78035451	0.37254014
C	0.20264502	-5.24004238	-0.68161901
C	0.93912466	-4.31000852	-1.42498023
C	0.88791965	-2.94481049	-1.13970038
H	-1.29862218	-3.06655476	1.47417451
C	-1.34485151	-5.75597942	1.24356920
H	0.25206138	-6.29745761	-0.91465616
C	1.78059849	-4.79495867	-2.58626176
C	-0.07042182	2.49139515	-0.09203797
C	-0.88791965	2.94481049	-1.13970038
C	-0.93912466	4.31000852	-1.42498023
C	-0.20264502	5.24004238	-0.68161901
C	0.58818288	4.78035451	0.37254014
C	0.66058200	3.41527739	0.66655583
H	-1.47432550	2.24039428	-1.71292951
C	-1.78059849	4.79495867	-2.58626176
H	-0.25206138	6.29745761	-0.91465616
C	1.34485151	5.75597942	1.24356920
F	-1.03480511	4.90609725	-3.73433441
F	-2.31918842	6.03279844	-2.34738984
F	-2.81792915	3.95023759	-2.86665148
F	2.31918842	-6.03279844	-2.34738984
F	1.03480511	-4.90609725	-3.73433441
F	2.81792915	-3.95023759	-2.86665148
F	-2.57498876	-5.27189602	1.61173398
F	-0.66569375	-6.01364621	2.41544864
F	-1.54830407	-6.95884817	0.63303229
F	2.57498876	5.27189602	1.61173398
F	0.66569375	6.01364621	2.41544864
F	1.54830407	6.95884817	0.63303229
C	0.00000000	-0.00000000	4.31681001
O	-0.00000000	-0.00000000	3.09873131
H	0.33417087	0.88491974	4.89513701
H	-0.33417087	-0.88491974	4.89513701



**C<sub>2v</sub> symmetry enforced****E:** -6058.87**H:** -5879.91**G:** -5933.79**N<sub>imag</sub>** = 6 (-8.1; -9.3; -10.0; -11.9; -14.9; -15.1 cm<sup>-1</sup>)

H	0.94017144	0.00000000	0.98536820
H	-0.94017144	-0.00000000	0.98536820
N	-1.12800126	-0.00000000	-0.01663463
C	0.00000000	0.00000000	-0.81756555
H	-2.87211020	-0.00000000	1.86314494
N	1.12800126	0.00000000	-0.01663463
H	2.50431446	-0.00000000	-2.42670295
Se	0.00000000	0.00000000	-2.65652610
C	2.51204769	-0.00000000	-0.26896379
C	3.32939730	0.00000000	0.87648209
C	4.71933356	0.00000000	0.76093451
C	5.33038637	-0.00000000	-0.49366808
C	4.51206833	-0.00000000	-1.62913286
C	3.12022807	-0.00000000	-1.53821977
H	2.87211020	0.00000000	1.86314494
C	5.53937670	0.00000000	2.03064432
H	6.41061704	-0.00000000	-0.58469889
C	5.18073150	-0.00000000	-2.98902736
C	-2.51204769	0.00000000	-0.26896379
C	-3.12022807	0.00000000	-1.53821977
C	-4.51206833	0.00000000	-1.62913286
C	-5.33038637	0.00000000	-0.49366808
C	-4.71933356	-0.00000000	0.76093451
C	-3.32939730	-0.00000000	0.87648209
H	-2.50431446	0.00000000	-2.42670295
C	-5.18073150	0.00000000	-2.98902736
H	-6.41061704	0.00000000	-0.58469889
C	-5.53937670	-0.00000000	2.03064432
F	-5.98839991	1.10035337	-3.14918275
F	-5.98839991	-1.10035337	-3.14918275
F	-4.29095385	0.00000000	-4.02002597
F	5.98839991	1.10035337	-3.14918275
F	5.98839991	-1.10035337	-3.14918275
F	4.29095385	-0.00000000	-4.02002597
F	5.26382827	-1.09967487	2.81176008
F	5.26382827	1.09967487	2.81176008
F	6.88101296	0.00000000	1.79658223
F	-5.26382827	1.09967487	2.81176008
F	-5.26382827	-1.09967487	2.81176008
F	-6.88101296	-0.00000000	1.79658223
C	0.00000000	0.00000000	4.04865235
O	0.00000000	0.00000000	2.83014374
H	-0.94587956	0.00000000	4.62641112
H	0.94587956	-0.00000000	4.62641112

**Formaldehyde-1-phenyl-3-[3,5-bis(trifluoromethyl)phenyl]urea****E:** -5376.46**H:** -5202.98**G:** -5251.39**N<sub>imag</sub>** = 0

N	-0.89608056	-1.06096431	-0.07995655
N	-0.82598198	1.24078745	-0.00072550
C	-0.09439564	0.06876543	0.15004694
C	-0.38579265	2.57548452	0.14395318
C	-1.34395274	3.58589320	-0.07092339
C	-0.99467677	4.92992563	0.05121398

C	0.31487625	5.29089737	0.38947577
C	1.26389697	4.28641303	0.60216558
C	0.93101177	2.93364086	0.48401443
C	-0.52375364	-2.40670750	-0.02020827
C	-1.52461546	-3.35801580	-0.30601084
C	-1.24234903	-4.72013574	-0.25917848
C	0.04062196	-5.17707877	0.06573233
C	1.02720469	-4.22998666	0.34726731
C	0.76813294	-2.85612516	0.30855731
C	2.43721442	-4.68117704	0.66716217
H	-2.36433475	3.31026394	-0.33479799
O	1.09629656	0.01419509	0.44460257
H	-1.87258581	-0.89363702	-0.31593755
H	1.66933062	2.16071803	0.64951095
H	-1.80637828	1.14416078	-0.24612587
H	-1.74834887	5.69564132	-0.11871722
H	0.58926637	6.33845119	0.48507251
H	2.28537047	4.55253646	0.86549409
H	-2.52676769	-3.02381998	-0.55831124
C	-2.31801051	-5.71844977	-0.61721846
H	0.25882051	-6.23752418	0.10710091
H	1.54094990	-2.13329865	0.53290258
H	-5.65712158	0.13424392	-1.03173214
H	-4.95559023	-1.61677169	-0.89955645
C	-4.77694011	-0.52166949	-0.87433897
O	-3.66779126	-0.05838052	-0.68275845
F	3.27613645	-4.50547009	-0.40820371
F	2.49973431	-6.00671044	1.00299132
F	2.98102450	-3.97639908	1.70710787
F	-2.23643812	-6.10277706	-1.93597416
F	-3.58366783	-5.21121342	-0.44063398
F	-2.23738788	-6.86131905	0.12873879

### Formaldehyde-1-phenyl-3-[3,5-bis(trifluoromethyl)phenyl]thiourea

*E*: -5293.77

*H*: -5121.60

*G*: -5170.72

*N*<sub>imag</sub> = 0

N	-0.67144979	-0.99490727	-0.00473801
N	-0.54099844	1.26529960	-0.00882838
C	0.17560588	0.09945260	-0.18328667
C	-0.22228520	2.63475286	-0.16845300
C	-1.31217396	3.52559061	-0.06969786
C	-1.12048928	4.89941586	-0.19308455
C	0.16213566	5.41380385	-0.41977010
C	1.24099476	4.53112946	-0.51540855
C	1.06616261	3.14915690	-0.39030487
C	-0.39744977	-2.36879030	0.02901370
C	-1.45489180	-3.22941793	-0.31198844
C	-1.30323885	-4.61429075	-0.22474111
C	-0.08868666	-5.17442863	0.17550123
C	0.96303908	-4.31234070	0.50958415
C	0.82580235	-2.92482899	0.44792565
C	2.29490251	-4.90671745	0.91654853
H	-2.31307849	3.13039116	0.10105004
S	1.79403818	-0.02493122	-0.58456388
H	-1.67124462	-0.78637540	0.00614862
H	1.90759749	2.47452638	-0.46428472
H	-1.51939541	1.13251251	0.23648211
H	-1.97485449	5.56783300	-0.11479865
H	0.31516631	6.48553835	-0.51886253
H	2.24357036	4.91629565	-0.68813415
H	-2.39721429	-2.80977496	-0.65294184

C	-2.46633984	-5.49318833	-0.61792020
H	0.03248537	-6.24934498	0.23995459
H	1.64592567	-2.27698072	0.72303778
H	-5.42372145	-0.44753601	1.01801323
H	-4.39013616	-1.98472216	0.63657990
C	-4.45737773	-0.87819307	0.68618182
O	-3.51560712	-0.16402800	0.39132770
F	3.06765055	-5.20365937	-0.18081394
F	2.14266490	-6.07742058	1.61495730
F	3.02882518	-4.06248915	1.70100586
F	-2.61233573	-5.57213100	-1.98230028
F	-3.66241981	-5.00129600	-0.13462575
F	-2.34537460	-6.77037789	-0.15589374

### Formaldehyde-1-phenyl-3-[3,5-bis(trifluoromethyl)phenyl]selenourea

**E:** -5272.06

**H:** -5100.99

**G:** -5148.90

**N<sub>imag</sub>** = 0

N	-0.76886128	-0.94643751	-0.14061027
N	-0.69168936	1.30991148	0.00176507
C	0.05626828	0.15695166	-0.01927190
C	-0.29761843	2.67429841	0.00095473
C	-1.11796913	3.57513038	0.70123448
C	-0.82378348	4.93959989	0.70420494
C	0.29483578	5.41781056	0.01329610
C	1.10359725	4.51890224	-0.69061457
C	0.81386905	3.15250659	-0.70872878
C	-0.48080889	-2.31880542	-0.06011086
C	-1.29944069	-3.18189967	-0.80287455
C	-1.13455977	-4.56738224	-0.71558315
C	-0.13479859	-5.11511619	0.08829123
C	0.68080294	-4.24632138	0.82596404
C	0.51770275	-2.86192132	0.76893528
C	1.78137627	-4.83350025	1.68344453
H	-1.98038042	3.20050819	1.25058684
Se	1.89156923	0.07534210	0.08234873
H	-1.73591464	-0.75587452	-0.41526270
H	1.44135643	2.46217011	-1.25732615
H	-1.69042228	1.18159577	0.15197212
H	-1.46459445	5.62516925	1.25371771
H	0.53116271	6.47901780	0.02071350
H	1.96908553	4.88177911	-1.24034045
H	-2.05883565	-2.76616514	-1.45934025
C	-2.04597622	-5.44808230	-1.53502324
H	-0.00172857	-6.18874042	0.15281683
H	1.14385112	-2.20653056	1.35808872
H	-5.61598907	-0.95447901	-0.24557401
H	-4.34763824	-2.31422071	-0.59065323
C	-4.55818121	-1.23818019	-0.42042939
O	-3.67265150	-0.40147323	-0.42311922
F	2.18706706	-3.98421306	2.67282939
F	-1.78532540	-5.34907640	-2.88028329
F	-3.37131089	-5.08698030	-1.37786768
F	-1.95189239	-6.76664916	-1.20448603
F	2.89354365	-5.13590283	0.93476646
F	1.38999200	-6.00191421	2.28830249

### Formaldehyde-1-cyclohexyl-3-[3,5-bis(trifluoromethyl)phenyl]urea

**E:** -5887.63

**H:** -5671.38

**G:** -5719.66

**N<sub>imag</sub>** = 0

H	2.92222317	3.83977740	3.42019201
H	2.55835802	4.43777676	1.80291041
H	4.68840259	2.34001763	2.51196857
H	4.99945632	3.99753681	1.99342275
N	0.92408765	0.83850798	0.46190374
N	-1.16655339	-0.13157741	0.25292494
C	-0.42365677	1.06187699	0.27866575
C	-2.53683564	-0.28972768	0.04686322
C	-3.04298149	-1.60549290	0.07222635
C	-4.39788373	-1.85056797	-0.13615533
C	-5.29101765	-0.79844890	-0.36738419
C	-4.78520311	0.50426262	-0.38396781
C	-3.42884497	0.77561010	-0.18357420
C	-5.71403237	1.66165997	-0.68443296
F	-3.95483988	-4.19567953	-0.37560837
F	-5.65223822	2.02411934	-2.01094781
F	-5.40494136	2.77890355	0.04133737
F	-7.02479221	1.36103507	-0.42234201
F	-5.98099700	-3.48619595	-0.87731288
F	-5.33595247	-3.57938686	1.22369838
H	-2.36787943	-2.43608432	0.25499142
O	-0.91667524	2.18110300	0.13266430
H	1.24084568	-0.09519432	0.70335604
H	-3.04826669	1.78825332	-0.20023785
H	-0.64170995	-0.99617784	0.37766491
C	-4.91609153	-3.26611125	-0.04942978
H	-6.34528075	-0.98910248	-0.52862055
C	1.86180903	1.94738569	0.67698063
C	4.28058430	2.68644275	0.41062894
C	3.26630516	1.54614407	0.19308344
C	1.88811924	2.40730681	2.15112383
C	2.89729032	3.55236574	2.36139020
C	4.30539941	3.15501134	1.87854864
H	1.49283216	2.77799057	0.06380840
H	4.00833565	3.53497012	-0.23469907
H	5.27987237	2.35968203	0.09576479
H	3.59648433	0.65563604	0.75255543
H	3.22176960	1.26347416	-0.86619573
H	2.16696392	1.54838105	2.78135404
H	0.87933376	2.71735113	2.44667477
C	0.52140284	-3.67174702	0.42798003
H	1.35024815	-4.39851516	0.55240838
H	-0.46070657	-4.08282607	0.11208256
O	0.68550212	-2.48286740	0.62876908

### Formaldehyde-1-cyclohexyl-3-[3,5-bis(trifluoromethyl)phenyl]thiourea

**E:** -5808.04

**H:** -5592.41

**G:** -5642.94

**N<sub>imag</sub>** = 0

H	3.24190478	3.46185494	3.66895377
H	2.77147822	4.31472049	2.20015066
H	4.83703712	2.04702330	2.38615602
H	5.19302706	3.74980564	2.09150451
N	0.83395765	1.04281387	0.50227022
N	-1.21774115	0.08110704	0.27530329
C	-0.51108425	1.26996737	0.42515393
C	-2.57941689	-0.16941682	0.06833265
C	-3.03374067	-1.46173131	0.38877651
C	-4.35695934	-1.83291025	0.14959148
C	-5.26817022	-0.92106117	-0.38856972
C	-4.81256610	0.36511657	-0.69994759

C	-3.48797512	0.75173436	-0.48625911
C	-5.79408961	1.37764742	-1.25136895
F	-3.83788144	-4.16864265	0.21788938
F	-5.19012561	2.32440814	-2.02953014
F	-6.44369119	2.04807562	-0.24167960
F	-6.76792244	0.78741973	-2.01652017
F	-5.94819009	-3.60756902	-0.09205395
F	-5.01580375	-3.34358986	1.88355129
H	-2.34549940	-2.17459574	0.83375182
S	-1.19542668	2.80202904	0.52545892
H	1.16194314	0.08046702	0.48037606
H	-3.15120297	1.74736689	-0.74046858
H	-0.66678826	-0.77047435	0.39581968
C	-4.79660175	-3.22565252	0.53125790
H	-6.29698485	-1.20667144	-0.57301998
C	1.84702398	2.06564228	0.78824426
C	4.26863192	2.72681050	0.40704923
C	3.17684037	1.67721566	0.11855290
C	2.02389189	2.28533196	2.30563839
C	3.10932198	3.34152941	2.58635955
C	4.44603128	2.96428614	1.91942173
H	1.47364177	2.99634544	0.34547255
H	3.98967412	3.67422617	-0.07741041
H	5.21665266	2.40887611	-0.04511034
H	3.50374462	0.69807266	0.50525576
H	3.02492955	1.56491070	-0.96250021
H	2.30820444	1.32824397	2.76949245
H	1.06269123	2.58857753	2.73464197
C	0.28958456	-3.45575235	-0.01543448
H	1.06899208	-4.22923133	-0.17190555
H	-0.76353499	-3.76260124	-0.18450259
O	0.58208801	-2.32386914	0.32585928

### Formaldehyde-1-cyclohexyl-3-[3,5-bis(trifluoromethyl)phenyl]selenourea

**E:** -5787.11

**H:** -5571.85

**G:** -5623.11

$N_{imag} = 0$

H	3.29175741	3.29963813	3.75069754
H	2.75639569	4.24638345	2.36377331
H	4.87897877	2.02415875	2.32035983
H	5.18618253	3.75242347	2.14289403
N	0.84286432	1.06169594	0.48754251
N	-1.18830636	0.06657024	0.25208799
C	-0.50158619	1.25132124	0.44033224
C	-2.55484894	-0.18671871	0.05852298
C	-3.03039805	-1.44059784	0.47227154
C	-4.36073461	-1.80604920	0.24932476
C	-5.24876680	-0.92117861	-0.36313498
C	-4.76782629	0.32977406	-0.77178148
C	-3.43781357	0.70505342	-0.57824837
C	-5.73002318	1.30545379	-1.41451686
F	-3.94806138	-4.16028322	0.29609671
F	-5.09721164	2.23921226	-2.18417040
F	-6.45549835	1.99171990	-0.46966606
F	-6.64314442	0.66983152	-2.21907756
F	-6.05336043	-3.50333227	0.25712972
F	-4.85351521	-3.25700095	2.08629628
H	-2.35861511	-2.12601334	0.98165117
Se	-1.29085902	2.91213143	0.65445529
H	1.19412224	0.10963012	0.40449957
H	-3.07837967	1.66887897	-0.91205388
H	-0.63251162	-0.78619883	0.35377005

C	-4.81444083	-3.16769960	0.71509522
H	-6.28205177	-1.20061250	-0.53209293
C	1.84330603	2.08600432	0.81626987
C	4.23430356	2.83332035	0.41458349
C	3.15901924	1.78001730	0.08033845
C	2.05971025	2.19705379	2.33971516
C	3.12882509	3.25649709	2.66644154
C	4.45259232	2.96307031	1.93465991
H	1.43249649	3.03573160	0.45415377
H	3.91791866	3.80619908	0.01037815
H	5.17498009	2.57406263	-0.08745392
H	3.52060608	0.78356712	0.38305499
H	2.97597098	1.74461508	-1.00110879
H	2.37909171	1.21612154	2.72431457
H	1.10452358	2.44533836	2.81526809
C	0.17604882	-3.47408060	-0.13770162
H	0.90477682	-4.28382713	-0.34607267
H	-0.89831615	-3.71798923	-0.27067968
O	0.54464870	-2.36959198	0.22038185

### Formaldehyde-5,6-dihydroindolo[2,3-b]indole (X = C; R = 3-CF<sub>3</sub>-phenyl)

*E*: -5240.42

*H*: -5079.49

*G*: -5127.24

*N*<sub>imag</sub> = 0

H	-0.02980627	-1.50621711	-2.94640037
H	0.02980627	1.50621711	-2.94640037
N	0.02286265	1.27013866	-1.96204894
C	0.00000000	0.00000000	-1.44850495
H	0.07231487	4.11426382	-1.79068591
N	-0.02286265	-1.27013866	-1.96204894
F	1.43503106	6.14350358	0.67478496
C	-0.00000000	-0.00000000	-0.04675833
C	-0.04127194	-2.15659986	-0.86542091
C	-0.06502137	-3.54474286	-0.86622881
C	-0.07166312	-4.19535136	0.37673955
C	-0.06128527	-3.46451766	1.58278624
C	-0.03760542	-2.07080693	1.57712805
C	-0.02693506	-1.38354291	0.35262311
H	-0.07231487	-4.11426382	-1.79068591
C	-0.15019841	-5.69547001	0.43172725
H	-0.06602588	-4.0022709	2.52731319
F	0.24472958	-6.29196017	-0.74124187
C	0.04127194	2.15659986	-0.86542091
C	0.02693506	1.38354291	0.35262311
C	0.03760542	2.07080693	1.57712805
C	0.06128527	3.46451766	1.58278624
C	0.07166312	4.19535136	0.37673955
C	0.06502137	3.54474286	-0.86622881
F	-0.62831134	6.22760458	1.43029944
F	-1.43503106	-6.14350358	0.67478496
H	0.06602588	4.0022709	2.52731319
C	0.15019841	5.69547001	0.43172725
F	0.62831134	-6.22760458	1.43029944
F	-0.24472958	6.29196017	-0.74124187
H	-0.02509117	-1.52295109	2.51559483
H	0.02509117	1.52295109	2.51559483
C	-0.00000000	-0.00000000	-5.92144713
O	-0.00000000	-0.00000000	-4.70464001
H	0.01984734	0.94473374	-6.50377182
H	-0.01984734	-0.94473374	-6.50377182

### Formaldehyde-5,6-dihydroindolo[2,3-b]indole (X = Si; R = 3-CF<sub>3</sub>-phenyl)

**E:** -5119.99  
**H:** -4962.54  
**G:** -5009.57  
 $N_{imag} = 0$

H	1.15176733	-2.11499704	0.50850642
H	-0.05384805	-2.70367874	-1.79626166
N	-0.14564053	-1.69146872	-1.86446196
C	0.39226819	-0.83503251	-0.96414815
H	-1.58995061	-2.76898891	-3.92409077
N	0.94855319	-1.15720714	0.22759036
F	-3.02992094	-2.85485506	-5.91698298
Si	-0.03357928	0.96756363	-1.20179091
C	0.82033641	-0.10998757	1.17811975
C	1.34171800	-0.19074534	2.46849750
C	1.09803595	0.86295185	3.35695899
C	0.37343734	1.99346806	2.94420239
C	-0.08904123	2.08498238	1.62967611
C	0.09223424	1.03673309	0.71346512
H	1.91880732	-1.05570275	2.78450768
C	1.56653078	0.75639422	4.78421696
H	0.18768524	2.80043587	3.64682310
F	2.64638577	-0.08049941	4.92534472
C	-1.17329388	-1.08342175	-2.63305192
C	-1.46986687	0.27401391	-2.27189648
C	-2.50289563	0.90639047	-2.98195694
C	-3.23854818	0.22967339	-3.95720395
C	-2.90639911	-1.09248938	-4.29649552
C	-1.85722274	-1.75279323	-3.64676082
F	-4.15773784	-1.00686079	-6.33578671
F	0.58209336	0.25452888	5.61304944
H	-4.05902187	0.72668945	-4.46633274
C	-3.72317929	-1.82641427	-5.32702751
F	1.92836582	1.96833416	5.31165388
F	-4.85622725	-2.39380331	-4.77734795
H	-0.61084528	2.98725552	1.31726548
H	-2.74782373	1.94390562	-2.76386750
C	0.80056224	-5.30826088	-0.04684043
O	0.77331895	-4.12424680	-0.32876559
H	0.38550326	-6.07758069	-0.72996102
H	1.24165989	-5.66848297	0.90522875

### Formaldehyde-5,6-dihydroindolo[2,3-b]indole (X = Ge; R = 3-CF<sub>3</sub>-phenyl)

**E:** -5090.21  
**H:** -4933.23  
**G:** -4981.34  
 $N_{imag} = 0$

H	1.16612582	-2.01294246	0.41722895
H	0.00496706	-2.57946700	-1.80341028
N	-0.07394301	-1.56753059	-1.91496719
C	0.44502596	-0.70365199	-1.02592474
H	-1.44703996	-2.73419737	-3.95842489
N	1.00497844	-1.04118540	0.14818589
F	-2.84453183	-2.85227200	-6.02651743
Ge	-0.01968623	1.23942584	-1.27849367
C	0.86016974	-0.03542238	1.15066554
C	1.41051070	-0.17950830	2.42333830
C	1.15722310	0.81403582	3.37836023
C	0.39618190	1.94349214	3.04532806
C	-0.09850091	2.09239838	1.74409482
C	0.08482727	1.09966666	0.77495249
H	2.02342866	-1.04130547	2.67490884
C	1.66179242	0.63057393	4.78571143

H	0.20197552	2.70403920	3.79593302
F	2.82794038	-0.09442511	4.83634979
C	-1.14332295	-1.01283692	-2.68057604
C	-1.53438163	0.30976750	-2.32179984
C	-2.59791026	0.87316182	-3.03568060
C	-3.29324127	0.14394596	-4.00778695
C	-2.87881532	-1.15452834	-4.33601838
C	-1.78432414	-1.73791857	-3.68384668
F	-4.25165572	-1.17674762	-6.29904134
F	0.75390338	-0.05228236	5.57192870
H	-4.14638041	0.58310994	-4.51646660
C	-3.64356748	-1.95878481	-5.35439542
F	1.90186137	1.81921095	5.42109462
F	-4.64531682	-2.70909312	-4.76920865
H	-0.65379675	2.99464276	1.49433714
H	-2.91067663	1.89370564	-2.82250693
C	0.51565632	-5.16377719	0.06859134
O	0.67606955	-4.01611001	-0.30500981
H	0.01241309	-5.91727258	-0.57127056
H	0.86626165	-5.50411374	1.06441199

### Formaldehyde-1,3-bis[4-(trifluoromethyl)phenyl]urea

**E:** -5378.86

**H:** -5204.68

**G:** -5255.22

**N<sub>imag</sub>** = 0

C	-0.17277054	-9.40809808	-1.80480641
C	-0.19559895	-10.75888850	-1.48070272
C	-0.21251419	-11.15786236	-0.13660601
C	-0.19974021	-10.18311102	0.86812575
C	-0.17711732	-8.82483828	0.55414633
C	-0.08798720	-3.43732779	-0.79512042
C	-0.07811611	-2.45122367	-1.80480471
C	-0.05526630	-1.10043375	-1.48070033
C	-0.03836599	-0.70146054	-0.13660324
C	-0.05117902	-1.67621181	0.86812815
C	-0.07382303	-3.03448404	0.55414811
H	-0.11587530	-4.98413223	-5.86101604
H	-0.16470137	-9.10465724	-2.85025514
O	-0.12548261	-5.92966119	0.80076348
H	-0.11325023	-4.90650717	-2.22409059
H	-0.17195659	-8.07634373	1.33452122
H	-0.13766984	-6.95281373	-2.22409116
C	-0.12545732	-5.92966428	-5.28098664
C	-0.18374949	-12.61988170	0.21361705
H	-0.03724192	-1.37524623	1.91155091
H	-0.08617067	-2.75466421	-2.85025363
O	-0.12545436	-5.92966062	-4.06416339
C	-0.06710192	0.76055937	0.21362001
H	-0.07901302	-3.78297864	1.33452272
H	-0.21368914	-10.48407705	1.91154820
H	-0.13504183	-6.87519986	-5.86101027
H	-0.04409510	-0.35501207	-2.27040875
H	-0.20673837	-11.50431029	-2.27041150
F	1.10430468	-13.11665947	0.26273760
F	-0.85231732	-13.39146852	-0.70607762
F	-0.74208539	-12.88077371	1.43751838
F	0.49122346	1.02143783	1.43752905
F	-1.35514533	1.25736700	0.26272349
F	0.60149624	1.53213113	-0.70606513
N	-0.10877369	-4.77616625	-1.21600003
N	-0.14216039	-7.08315506	-1.21600069



C	-0.12547441	-5.92966079	-0.42631370
C	-0.16293493	-8.42199389	-0.79512179