

## Supplementary Information

### Unified Classification of Non-Covalent Bonds Formed by Main Group Elements: A Bridge to Chemical Bonding

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#### Atoms in Molecules Analysis

Atoms in Molecules theory, an electron density topological analysis has been used to look deeper into the nature of chemical bonding. In 1960, R.F.W Bader proposed the name Atoms in Molecules<sup>1</sup> theory. The AIM theory examines the distribution of electron density at each position surrounding a molecule's nucleus. The AIM theory can predict the nature and characteristics of a bond based on the electron densities at the bond critical points.

Any point in space where all the first-order partial derivatives of a function (electron density in our context) vanish is termed as a critical point (CP). The nature of the critical point is determined by the rank and signature of the second derivative of electron density. The rank is defined as the number of non-zero eigenvalues of the hessian matrix. The signature is defined as the algebraic sum of the signs of the non-zero eigenvalues. A critical point is characterised by  $(\omega, \sigma)$  where  $\omega$  is the rank and  $\sigma$  is the signature of the critical point. Based on this, a scalar function can have four types of critical points summarised in Table S1.

**Table S1:** Types and characteristics of critical points (cps) based on the rank and signature of the Hessian matrix.

<i>(Rank, Signature)</i>	<i>Types of critical points</i>	<i>Curvature</i>
<i>(3,-3)</i>	Nuclear critical point (NCP)	All negative, local maxima
<i>(3,-1)</i>	Bond critical point (BCP)	Two negative, one positive
<i>(3,+1)</i>	Ring critical point (RCP)	One negative, two positive
<i>(3,+3)</i>	Cage critical point (CCP)	All positive, local minima

Most of the stable nuclear configurations' critical points are of rank three. In a few exceptions, degenerate cps with rank  $< 3$  are observed. A degenerate critical point is unstable. A small change in electron density is caused by slight displacement in nuclear configuration results to vanish or change into stable cps of rank three.

*Nature of Interaction using Atoms in molecules topological analysis:* Based on the following criteria, Atoms in Molecules analysis has been widely used to understand the nature of interactions in weakly bound complexes.

- Sign of Laplacian: Closed shell interactions are characterised by positive Laplacian ( $\nabla^2\rho > 0$ ), whereas negative Laplacian ( $\nabla^2\rho < 0$ ) indicates shared shell interaction<sup>2</sup>.
- The ratio of  $|\lambda_1|/\lambda_3$ : Sosa and co-workers<sup>3</sup> proposed this ratio to measure a closed and shared shell interaction. The  $|\lambda_1|/\lambda_3$  less than 0.25 proposed as closed shell and greater than 1 for shared shell interaction. Values between 0.25 and 1 are regarded as the interaction of intermediate kind.
- The ratio of  $|V/G|$ : Cremer and Karka<sup>4</sup> proposed another criterion based on potential ( $V$ ) and kinetic ( $G$ ) energy density ratio. For closed-shell interaction,  $|V/G| < 1$  and for shared shell  $|V/G| > 2$ .  $|V/G|$  in between the limits proposed as intermediate kind of interaction.

Bader's AIM analysis is now routinely utilized to supplement gas phase experimental spectroscopy<sup>5,6,7</sup>. It has also been used successfully to get experimental charge densities in a large range of organic molecules<sup>8</sup>, weak bonds in solids<sup>9</sup>, and proteins<sup>10</sup>.

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**Table S2.** Comparison of slope from other studies and present work. References are from main text.

Method		Intercept	Slope	Reference
<b>H</b>				
MP2(full)/aug-cc-pVTZ	0.88	-0.4	777	[11]
B3LYP/6-311++G(d,p)	0.86	-2.9(5.6)	911(141)	[54]
MP2(full)/aug-cc-pVTZ	0.98	-5.1	1101	[63]
MP2/aug-cc-pVDZ	<b>0.95</b>	<b>-2.5(1.0)</b>	<b>901(38)</b>	This work
<b>Li</b>				
MP2(full)/aug-cc-pVTZ	0.97	-17.6	3271	[11]
MP2(full)/aug-cc-pVTZ	0.96	-13.1	3218	[63]
MP2/aug-cc-pVDZ	<b>0.85</b>	<b>1.1(5.4)</b>	<b>2997(239)</b>	This work
<b>Na</b>				
MP2(full)/6-311++G(d,p)	0.90	18.0(9.6)	4699(536)	[8]
MP2/aug-cc-pVDZ	<b>0.91</b>	<b>-10.5(3.6)</b>	<b>4074(238)</b>	This work
<b>Be</b>				
CCSD(T)/aug-cc-pVTZ	0.87	-64.1(16.6)	2600(308)	[94]
G4	0.77	-68.0(46.3)	2813(694)	[95]
MP2/aug-cc-pVDZ	<b>0.88</b>	<b>-64.9(9.1)</b>	<b>2983(206)</b>	This work
<b>Mg</b>				
B3LYP/6-311+G(3df,2p)	0.93	-29.2(13.7)	3599(466)	[96]
MP2/aug-cc-pVDZ	<b>0.93</b>	<b>-22.9(5.0)</b>	<b>3606(188)</b>	This work
<b>Ca</b>				
G4	0.97	-3.0(18.6)	3082(566)	[97]
MP2/aug-cc-pVDZ	<b>0.94</b>	<b>-9.2(3.8)</b>	<b>3081(143)</b>	This work
<b>B</b>				
MP2/aug-cc-pVTZ	0.62	1.9(11.2)	608(131)	[81]
MP2/aug-cc-pVDZ	<b>0.76</b>	<b>0.6(3.6)</b>	<b>552(58)</b>	This work
<b>Al</b>				
MP2/aug-cc-pVTZ	0.97	-72.8(14.6)	3753(341)	[52]
MP2/aug-cc-pVDZ	<b>0.89</b>	<b>-44.9(9.2)</b>	<b>3564(240)</b>	This work
<b>Ga</b>				
CCSD(T)/aug-cc-pVTZ	0.89	-14.6(6.1)	1228(118)	[98]
MP2/aug-cc-pVTZ	0.87	-3.6(5.7)	1064(111)	[98]
MP2/aug-cc-pVDZ	<b>0.91</b>	<b>-36.3(6.1)</b>	<b>2048(125)</b>	This work
<b>In</b>				
CCSD(T)/aug-cc-pVTZ-PP	0.93	-23.6(5.5)	1824(139)	[98]

MP2/aug-cc-pVTZ-PP	0.93	-12.7(4.6)	1611(117)	[98]
MP2/aug-cc-pVDZ-PP	<b>0.93</b>	<b>-27.4(4.7)</b>	<b>2207(115)</b>	This work
<b>C</b>				
MP2/6-311+G(3df,2p)	0.85	-8.0(0.9)	2970(181)	[35],[99],[100]
MP2/6-311++G(d,p)	0.97	13.7(1.6)	2273(138)	[101]
MP2/aug-cc-pVDZ	<b>0.86</b>	<b>-9.2(1.1)</b>	<b>2827(215)</b>	This work
<b>Si</b>				
MP2/aug-cc-pVTZ	0.72	0.4(10.8)	1311(312)	[16]
MP2/aug-cc-pVDZ	0.88	-29.9(10)	1078(163)	[102]
MP2/aug-cc-pVDZ	<b>0.92</b>	<b>3.0(0.7)</b>	<b>823(45)</b>	This work
<b>Ge</b>				
MP2/aug-cc-pVTZ	0.71	-4.8(16.9)	1572(380)	[16]
MP2/aug-cc-pVDZ	0.82	-2.8(10.6)	1345(256)	[103]
MP2/aug-cc-pVDZ	<b>0.92</b>	<b>2.7(0.7)</b>	<b>828(47)</b>	This work
<b>Sn</b>				
MP2/aug-cc-pVDZ-PP	0.85	-5.2(10.7)	1590(272)	[103]
MP2/aug-cc-pVDZ-PP	<b>0.93</b>	<b>1.0(1.0)</b>	<b>1085(56)</b>	This work
<b>N</b>				
CCSD(T)/def2-QZVP	0.88	0.8(1.3)	589(154)	[104]
M062X/def2-QZVP				
MP2/aug-cc-pVDZ	<b>0.87</b>	<b>-0.4(0.6)</b>	<b>664(90)</b>	This work
<b>P</b>				
CCSD (T)/def2-QZVP	0.95	-3.2(1.4)	1335(100)	[104]
M062X/def2-QZVP				
MP2/aug-cc-pVDZ	<b>0.93</b>	<b>1.0(0.8)</b>	<b>865(46)</b>	This work
<b>As</b>				
CCSD (T)/def2-QZVP	0.78	1.1(1.3)	991(178)	[104]
M062X/def2-QZVP				
MP2/aug-cc-pVDZ	<b>0.93</b>	<b>2.2(0.9)</b>	<b>872(44)</b>	This work
<b>O</b>				
M06-2X/aug-cc-pVTZ	0.72	1.1(0.9)	452(125)	[88]
MP2/aug-cc-pVTZ	0.82	-2.0(1.4)	906(209)	[89]
MP2/aug-cc-pVDZ	<b>0.97</b>	<b>-0.7(0.4)</b>	<b>640(38)</b>	This work
<b>S</b>				
MP2/CBS	0.92	-0.6(0.9)	1255(64)	[105]
MP2/aug-cc-pVTZ	0.93	0.3(4.1)	839(11)	[106]
MP2/aug-cc-pVDZ	<b>0.96</b>	<b>1.3(0.6)</b>	<b>785(29)</b>	This work
<b>Se</b>				
MP2/aug-cc-pVTZ	0.90	-24.4(10.1)	1418(215)	[106]
MP2/aug-cc-pVTZ	0.86	-3.6(10.8)	1005(207)	[107]
MP2/aug-cc-pVDZ	<b>0.96</b>	<b>1.2(0.8)</b>	<b>866(31)</b>	This work
<b>Te</b>				
MP2/aug-cc-pVTZ-PP	0.88	-1.1(3.7)	862(222)	[108]
MP2/aug-cc-pVDZ-PP	<b>0.90</b>	<b>-3.4(2.2)</b>	<b>1194(74)</b>	This work
<b>F</b>				
M06-2X/aug-cc-pVDZ	0.90	-5.0(1.7)	702(102)	[109]
MP2/aug-cc-pVDZ	<b>0.84</b>	<b>-1.4(0.4)</b>	<b>875(71)</b>	This work
<b>Cl</b>				
MP2(full)/aug-cc-pVDZ	0.96	-0.3	776	[11]

MP2(full)/aug-cc-pVTZ	0.98	9.0	1162	[63]
MP2/aug-cc-pVDZ	<b>0.93</b>	<b>2.0(0.9)</b>	<b>681(36)</b>	This work
<b>Br</b>				
B3LYP/6-311++G(d,p)	0.97	-20.3(5.4)	1776(147)	[54]
MP2/aug-cc-pVDZ	<b>0.93</b>	<b>-5.0(1.5)</b>	<b>992(50)</b>	This work
<b>I</b>				
B3LYP/6-311++G(d,p)	0.90	-21.0(7.5)	1862(237)	[54]
MP2/aug-cc-pVDZ	<b>0.91</b>	<b>-6.2(2.3)</b>	<b>1269(75)</b>	This work

**Table S3:** Electron density, dissociation energy, percentage covalency, and ionicity of some diatomic molecules. Blue molecules are predominantly ionic (high slope), cyan molecules are intermediate (intermediate), and green molecules are ionic (low slope).

<i>Diatomic Molecules</i>	<i>Electron Density (au)</i>	<i>Dissociation Energy (kJ/mol)</i>	<i>Covalency</i>	<i>Ionicity</i>
NaF	0.0445	477.0	3.3	96.7
NaCl	0.0286	407.9	2.7	97.3
NaBr	0.0249	362.8	4.2	95.8
LiF	0.065	573.0	2.3	97.7
LiCl	0.0356	464.0	3.4	96.6
LiBr	0.0306	418.0	4.4	95.6
KBr	0.0275	379.1	0	100
KCl	0.0318	433.0	1.8	98.2
KF	0.0521	489.2	2.5	97.5
$y=4610(498)x+270.4(19.9), R^2 = 0.92$				
HF	0.3526	569.7	42	57
HCl	0.2401	431.4	71	29
HBr	0.1963	366.2	80	20
FCl	0.1803	256.3	61	39
FBr	0.1459	280.0	52	48
BrCl	0.1143	219.0	88	12
$y = 1510(191)x + 44.4(41.8), R^2 = 0.94$				
H <sub>2</sub>	0.2496	435.8	100	0
Li <sub>2</sub>	0.0139	82.4	100	0
B <sub>2</sub>	0.1247	290.0	100	0
C <sub>2</sub>	0.316	618.3	100	0
N <sub>2</sub>	0.7204	944.8	100	0
O <sub>2</sub>	0.5505	498.4	100	0
Cl <sub>2</sub>	0.1388	243.0	100	0
Br <sub>2</sub>	0.0975	193.9	100	0
$y = 1042(179)x + 125.2 (64.3), R^2 = 0.85$				

<b>1</b>	<b>2</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>
<b>H</b> HF, H <sub>2</sub> O, H <sub>2</sub> S						
<b>Li</b> LiF, LiCl, LiBr	<b>Be</b> BeF <sub>2</sub> , BeCl <sub>2</sub> , BeH <sub>2</sub>	<b>B</b> BF <sub>3</sub> , BF <sub>2</sub> H, BCl <sub>3</sub>	<b>C</b> CH <sub>3</sub> NO <sub>2</sub> , CH <sub>3</sub> NF <sub>2</sub> , CH <sub>3</sub> OH	<b>N</b> NF <sub>3</sub>	<b>O</b> OF <sub>2</sub>	<b>F</b> FCN, FNC, FCCCN
<b>Na</b> NaF, NaCl, NaBr	<b>Mg</b> MgF <sub>2</sub> , MgCl <sub>2</sub> , MgH <sub>2</sub>	<b>Al</b> AlF <sub>3</sub> , AlH <sub>2</sub> F, AlCl <sub>3</sub>	<b>Si</b> SiH <sub>3</sub> F, SiH <sub>3</sub> CN, SiH <sub>3</sub> Cl	<b>P</b> PF <sub>3</sub> , PH <sub>2</sub> F, PH <sub>2</sub> Cl	<b>S</b> SF <sub>2</sub> , SCl <sub>2</sub> , SO <sub>2</sub>	<b>Cl</b> FCl, ClF, ClCN
<b>K</b>	<b>Ca</b> CaF <sub>2</sub> , CaCl <sub>2</sub> , CaH <sub>2</sub>	<b>Ga</b> GaF <sub>2</sub> H, GaH <sub>2</sub> F, GaH <sub>2</sub> Cl	<b>Ge</b> GeH <sub>3</sub> F, GeH <sub>3</sub> CN, GeH <sub>3</sub> Cl	<b>As</b> AsF <sub>3</sub> , AsH <sub>2</sub> F, AsH <sub>2</sub> Cl	<b>Se</b> SeF <sub>2</sub> , SeCl <sub>2</sub> , SeO <sub>2</sub>	<b>Br</b> BrF, BrCl, Br <sub>2</sub>
<b>Rb</b>	<b>Sr</b>	<b>In</b> InF <sub>2</sub> H, InH <sub>2</sub> F, InH <sub>2</sub> Cl	<b>Sn</b> SnH <sub>3</sub> F, SnH <sub>3</sub> CN, SnH <sub>3</sub> Cl	<b>Sb</b> SbF <sub>3</sub> , SbH <sub>2</sub> F, SbH <sub>2</sub> Cl	<b>Te</b> TeF <sub>2</sub> , TeCl <sub>2</sub> , TeO <sub>2</sub>	<b>I</b> IF, ICl, IBr
<b>Cs</b>	<b>Ba</b>	<b>Tl</b> TlF <sub>2</sub> H, TlH <sub>2</sub> F, TlH <sub>2</sub> Cl	<b>Pb</b> PbH <sub>3</sub> F, PbH <sub>3</sub> CN, , PbH <sub>3</sub> Cl	<b>Bi</b> BiF <sub>3</sub> , BiH <sub>2</sub> F, BiH <sub>2</sub> Cl	<b>Po</b> PoF <sub>2</sub> , PoCl <sub>2</sub> , PoO <sub>2</sub>	<b>At</b> AtF, AtCl, AtBr
<b>Fr</b>	<b>Ra</b>					

**Figure S1:** Non-covalent bond donors used in this study. To obtain a correlation plot of a non-covalent bond, three different donors were combined with ten different acceptors (mostly H<sub>2</sub>O, NH<sub>3</sub>, H<sub>2</sub>S, PH<sub>3</sub>, HCHO, C<sub>2</sub>H<sub>4</sub>, HCN, CO, CH<sub>3</sub>OH, CH<sub>3</sub>OCH<sub>3</sub>).

<div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> <b>H</b> 0.92(0.09)         </div> <div style="margin-left: 10px;">           → Element → Avg <math> V /G</math> (SD)         </div> </div>						
1	2	13	14	15	16	17
<b>H</b> 0.92(0.09)						
<b>Li</b> 0.74(0.04)	<b>Be</b> 0.96(0.12)	<b>B</b> 1.22(0.32)	<b>C</b> 0.71(0.03)	<b>N</b> 0.82(0.03)	<b>O</b> 0.87(0.03)	<b>F</b> 0.84(0.05)
<b>Na</b> 0.76(0.03)	<b>Mg</b> 0.81(0.04)	<b>Al</b> 0.98(0.10)	<b>Si</b> 1.01(0.17)	<b>P</b> 0.94(0.11)	<b>S</b> 0.89(0.10)	<b>Cl</b> 0.88(0.09)
<b>K</b>	<b>Ca</b> 0.82(0.04)	<b>Ga</b> 1.19(0.07)	<b>Ge</b> 0.95(0.10)	<b>As</b> 1.00(0.11)	<b>Se</b> 0.97(0.12)	<b>Br</b> 0.96(0.09)
<b>Rb</b>	<b>Sr</b>	<b>In</b> 1.05(0.05)	<b>Sn</b> 0.97(0.09)	<b>Sb</b> 1.04(0.09)	<b>Te</b> 1.06(0.13)	<b>I</b> 1.03(0.10)
<b>Cs</b>	<b>Ba</b>	<b>Tl</b> 0.99(0.17)	<b>Pb</b> 0.95(0.07)	<b>Bi</b> 1.01(0.07)	<b>Po</b> 1.02(0.09)	<b>At</b> 1.03(0.07)
<b>Fr</b>	<b>Ra</b>					

**<1.00(Closed)**
**1.00-2.00(Intermediate)**
**>2.00 (Shared)**

**Figure S2.** The ratio of the potential ( $|V(r)|$ ) and kinetic ( $G(r)$ ) energy densities of the electrons at BCP for the different non-covalent bonds formed by main group elements of the Periodic Table. The  $|V(r)|/G(r)$  ratio has been used for the characterisation of bonding in three regions, namely closed-shell ( $<1.00$ , blue), intermediate ( $1.00-2.00$ , cyan), and shared shell ( $>2.00$ , green) bond. All the complexes under study fall under the closed or intermediate region.

<div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> <b>H</b> 0.22(0.02)         </div> <div style="margin-left: 10px;">           → Element            → Avg <math> \lambda_1 /\lambda_3</math> (SD)         </div> </div>						
1	2	13	14	15	16	17
<b>H</b> 0.22(0.02)						
<b>Li</b> 0.16(0.01)	<b>Be</b> 0.19(0.03)	<b>B</b> 0.17(0.08)	<b>C</b> 0.08(0.02)	<b>N</b> 0.13(0.01)	<b>O</b> 0.16(0.01)	<b>F</b> 0.14(0.01)
<b>Na</b> 0.14(0.01)	<b>Mg</b> 0.15(0.01)	<b>Al</b> 0.16(0.02)	<b>Si</b> 0.09(0.04)	<b>P</b> 0.17(0.02)	<b>S</b> 0.18(0.02)	<b>Cl</b> 0.15(0.02)
<b>K</b>	<b>Ca</b> 0.16(0.01)	<b>Ga</b> 0.20(0.03)	<b>Ge</b> 0.12(0.03)	<b>As</b> 0.18(0.03)	<b>Se</b> 0.20(0.03)	<b>Br</b> 0.17(0.03)
<b>Rb</b>	<b>Sr</b>	<b>In</b> 0.18(0.02)	<b>Sn</b> 0.14(0.02)	<b>Sb</b> 0.19(0.03)	<b>Te</b> 0.21(0.03)	<b>I</b> 0.17(0.02)
<b>Cs</b>	<b>Ba</b>	<b>Tl</b> 0.18(0.01)	<b>Pb</b> 0.15(0.02)	<b>Bi</b> 0.18(0.02)	<b>Po</b> 0.19(0.02)	<b>At</b> 0.16(0.02)
<b>Fr</b>	<b>Ra</b>					

**<0.25(Closed)**
**0.25-1.00(Intermediate)**
**>1.00 (Shared)**

**Figure S3.** The ratio of the first ( $|\lambda_1|$ ) and third ( $\lambda_3$ ) eigenvalues of the Hessian matrix at BCP for the different non-covalent bonds formed by the main group elements of the Periodic Table. The  $(|\lambda_1|)/\lambda_3$  ratio has been used for the characterisation of bonding in three regions, namely closed-shell (<0.25, blue), intermediate (0.25-1.00, cyan), and shared shell bonding (>1.00, green). All the complexes under study fall under the closed-shell bonding.

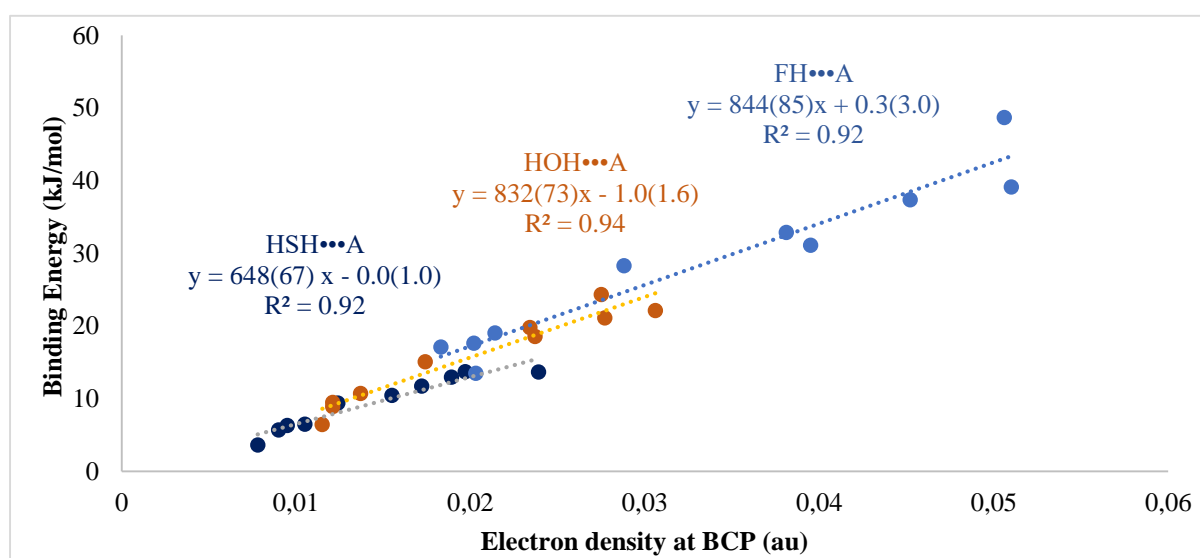
The following section contains all data sets. (Table D1 to Table D31)



## All Data Sets

**Table D1.** Electron density at BCP (au) and binding energy (kJ/mol) data for H-bonded complexes.

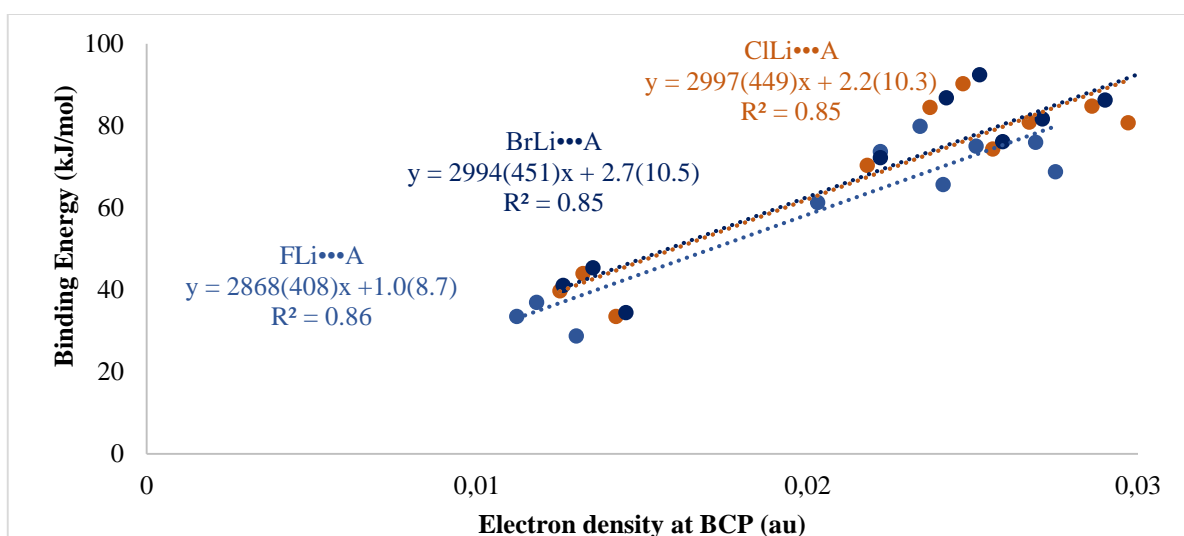
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
FH•••OH <sub>2</sub>	0.0381	32.9
FH•••SH <sub>2</sub>	0.0214	19.0
FH•••NH <sub>3</sub>	0.0506	48.7
FH•••NCH	0.0288	28.3
FH•••CO	0.0203	13.5
FH•••HCHO	0.0395	31.1
FH•••C <sub>2</sub> H <sub>4</sub>	0.0183	17.1
FH•••CH <sub>3</sub> OH	0.0452	37.4
FH•••PH <sub>3</sub>	0.0202	17.6
FH•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0510	39.1
HOH•••OH <sub>2</sub>	0.0237	18.5
HOH•••SH <sub>2</sub>	0.0137	10.7
HOH•••NH <sub>3</sub>	0.0275	24.3
HOH•••NCH	0.0174	15.0
HOH•••CO	0.0115	6.4
HOH•••OCH <sub>2</sub>	0.0234	19.8
HOH•••C <sub>2</sub> H <sub>4</sub>	0.0121	9.5
HOH•••OHCH <sub>3</sub>	0.0277	21.1
HOH•••PH <sub>3</sub>	0.0121	8.9
HOH•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0306	22.1
HSH•••OH <sub>2</sub>	0.0155	10.4
HSH•••SH <sub>2</sub>	0.0105	6.5
HSH•••NH <sub>3</sub>	0.0197	13.7
HSH•••NCH	0.0124	9.4
HSH•••CO	0.0078	3.6
HSH•••OCH <sub>2</sub>	0.0172	11.7
HSH•••C <sub>2</sub> H <sub>4</sub>	0.0095	6.3
HSH•••OHCH <sub>3</sub>	0.0189	12.9
HSH•••PH <sub>3</sub>	0.0090	5.7
HSH•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0239	13.6



**Figure D1.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for H-bonded complexes.

**Table D2.** Electron density at BCP (au) and binding energy (kJ/mol) data for Li-bonded complexes.

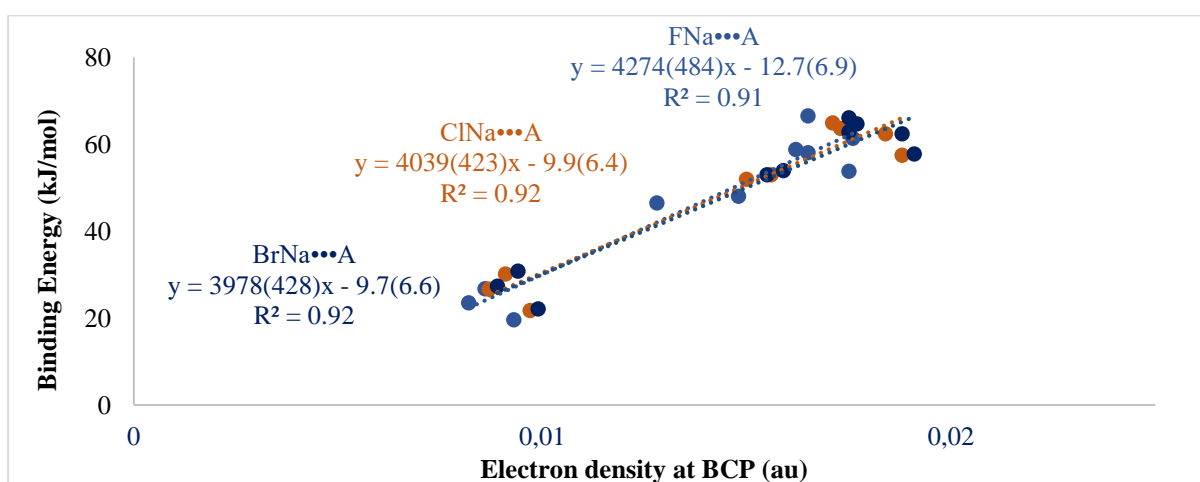
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
FLi•••OH <sub>2</sub>	0.0241	65.7
FLi•••NCCH <sub>3</sub>	0.0222	73.7
FLi•••NH <sub>3</sub>	0.0234	79.9
FLi•••NCH	0.0203	61.3
FLi•••OCH <sub>2</sub>	0.0251	75.0
FLi •••C <sub>2</sub> H <sub>4</sub>	0.0112	33.5
FLi•••OHCH <sub>3</sub>	0.0269	75.9
FLi•••PH <sub>3</sub>	0.0118	37.0
FLi•••CO	0.0130	28.7
FLi•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0275	68.8
CLi•••OH <sub>2</sub>	0.0256	74.3
CLi •••NCCH <sub>3</sub>	0.0237	84.5
CLi•••NH <sub>3</sub>	0.0247	90.3
CLi•••NCH	0.0218	70.3
CLi•••OCH <sub>2</sub>	0.0267	80.9
CLi•••C <sub>2</sub> H <sub>4</sub>	0.0125	39.7
CLi•••OHCH <sub>3</sub>	0.0286	84.8
CLi•••PH <sub>3</sub>	0.0132	44.0
CLi•••CO	0.0142	33.5
CLi•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0297	80.7
BrLi•••OH <sub>2</sub>	0.0259	76.2
BrLi•••NCCH <sub>3</sub>	0.0242	86.8
BrLi•••NH <sub>3</sub>	0.0252	92.4
BrL•••NCH	0.0222	72.2
BrLi•••OCH <sub>2</sub>	0.0271	81.7
BrLi •••C <sub>2</sub> H <sub>4</sub>	0.0126	41.0
BrLi•••OHCH <sub>3</sub>	0.0290	86.3
BrLi•••PH <sub>3</sub>	0.0135	45.4
BrLi•••CO	0.0145	34.4
BrLi•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0302	82.7



**Figure D2.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Li-bonded complexes.

**Table D3.** Electron density at BCP (au) and binding energy (kJ/mol) data for Na-bonded complexes.

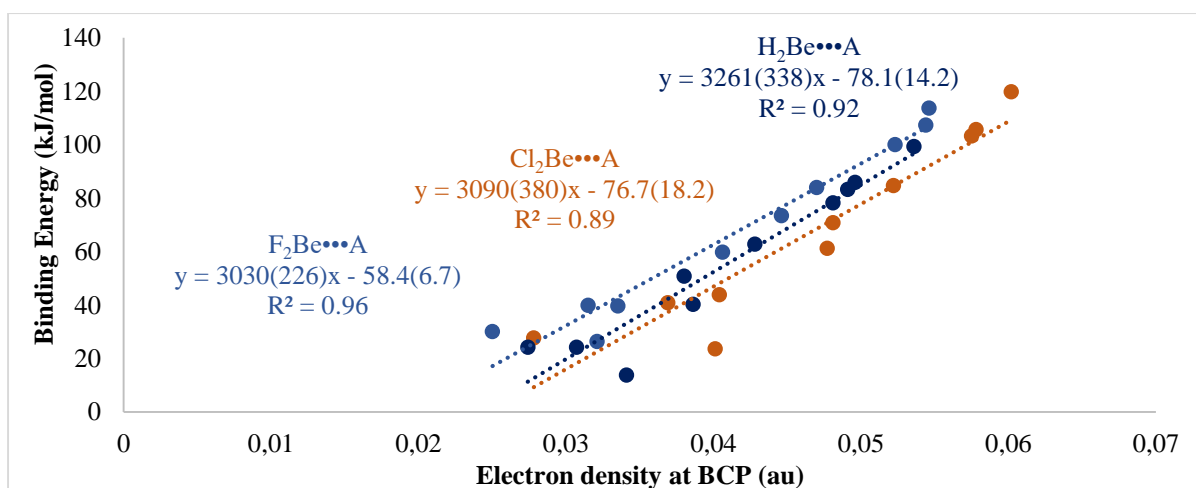
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
FNa•••OH <sub>2</sub>	0.0128	46.5
FNa•••NCCH <sub>3</sub>	0.0162	58.7
FNa•••NH <sub>3</sub>	0.0165	58.0
FNa•••NCH	0.0148	48.0
FNa•••OCH <sub>2</sub>	0.0165	66.5
FNa•••C <sub>2</sub> H <sub>4</sub>	0.0082	23.5
FNa•••OHCH <sub>3</sub>	0.0176	61.4
FNa•••PH <sub>3</sub>	0.0086	26.7
FNa•••CO	0.0093	19.6
FNa•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0175	53.7
ClNa•••OH <sub>2</sub>	0.0150	51.9
ClNa•••NCCH <sub>3</sub>	0.0171	64.8
ClNa•••NH <sub>3</sub>	0.0174	63.6
ClNa•••NCH	0.0156	53.0
ClNa•••OCH <sub>2</sub>	0.0173	63.6
ClNa•••C <sub>2</sub> H <sub>4</sub>	0.0087	26.7
ClNa•••OHCH <sub>3</sub>	0.0184	62.4
ClNa•••PH <sub>3</sub>	0.0091	30.1
ClNa•••CO	0.0097	21.7
ClNa•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0188	57.4
BrNa•••OH <sub>2</sub>	0.0155	52.9
BrNa•••NCCH <sub>3</sub>	0.0175	66.1
BrNa•••NH <sub>3</sub>	0.0177	64.7
BrNa•••NCH	0.0159	53.9
BrNa•••OCH <sub>2</sub>	0.0175	62.8
BrNa•••C <sub>2</sub> H <sub>4</sub>	0.0089	27.3
BrNa•••OHCH <sub>3</sub>	0.0188	62.3
BrNa•••PH <sub>3</sub>	0.0094	30.8
BrNa•••CO	0.0099	22.1
BrNa•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0191	57.7



**Figure D3.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Na-bonded complexes.

**Table D4.** Electron density at BCP (au) and binding energy (kJ/mol) data for Be-bonded complexes.

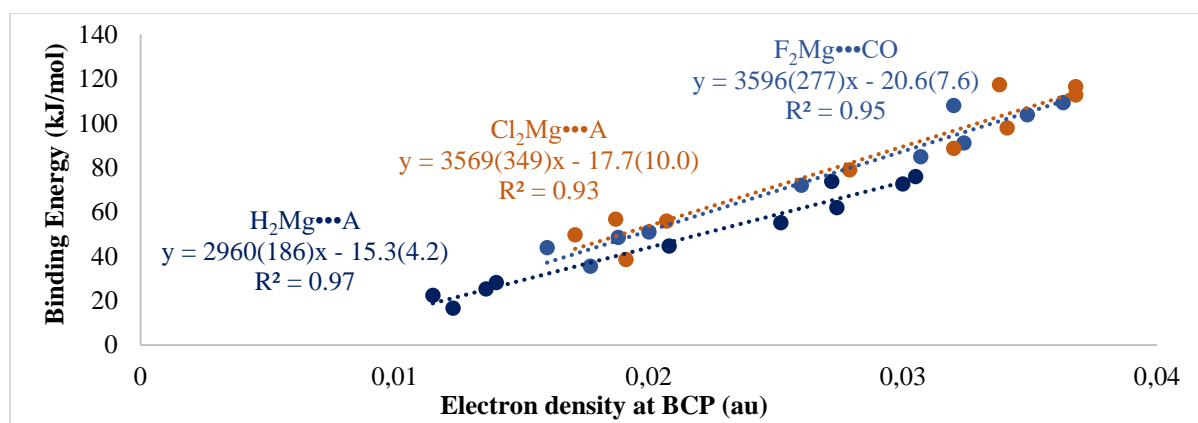
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
F <sub>2</sub> Be•••OH <sub>2</sub>	0.0470	84.0
F <sub>2</sub> Be•••SH <sub>2</sub>	0.0315	40.0
F <sub>2</sub> Be•••NH <sub>3</sub>	0.0546	113.7
F <sub>2</sub> Be•••NCH	0.0406	59.8
F <sub>2</sub> Be•••OCH <sub>2</sub>	0.0446	73.4
F <sub>2</sub> Be•••C <sub>2</sub> H <sub>4</sub>	0.0250	30.0
F <sub>2</sub> Be•••OHCH <sub>3</sub>	0.0523	100.0
F <sub>2</sub> Be•••PH <sub>3</sub>	0.0335	39.6
F <sub>2</sub> Be•••CO	0.0321	26.3
F <sub>2</sub> Be•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0544	107.3
Cl <sub>2</sub> Be•••OH <sub>2</sub>	0.0522	84.7
Cl <sub>2</sub> Be•••SH <sub>2</sub>	0.0369	40.8
Cl <sub>2</sub> Be•••NH <sub>3</sub>	0.0602	119.8
Cl <sub>2</sub> Be•••NCH	0.0477	61.2
Cl <sub>2</sub> Be•••OCH <sub>2</sub>	0.0481	70.8
Cl <sub>2</sub> Be•••C <sub>2</sub> H <sub>4</sub>	0.0278	27.6
Cl <sub>2</sub> Be•••OHCH <sub>3</sub>	0.0575	103.3
Cl <sub>2</sub> Be•••PH <sub>3</sub>	0.0404	43.8
Cl <sub>2</sub> Be•••CO	0.0401	23.6
Cl <sub>2</sub> Be•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0578	105.7
H <sub>2</sub> Be•••OH <sub>2</sub>	0.0428	62.7
H <sub>2</sub> Be•••SH <sub>2</sub>	0.0274	24.2
H <sub>2</sub> Be•••NH <sub>3</sub>	0.0496	85.9
H <sub>2</sub> Be•••NCH	0.0386	40.3
H <sub>2</sub> Be•••OCH <sub>2</sub>	0.0380	50.8
H <sub>2</sub> Be•••NH <sub>2</sub> CH <sub>3</sub>	0.0536	99.3
H <sub>2</sub> Be•••OHCH <sub>3</sub>	0.0481	78.2
H <sub>2</sub> Be•••PH <sub>3</sub>	0.0307	24.1
H <sub>2</sub> Be•••CO	0.0341	13.7
H <sub>2</sub> Be•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0491	83.3



**Figure D4.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Be-bonded complexes.

**Table D5.** Electron density at BCP (au) and binding energy (kJ/mol) data for Mg-bonded complexes.

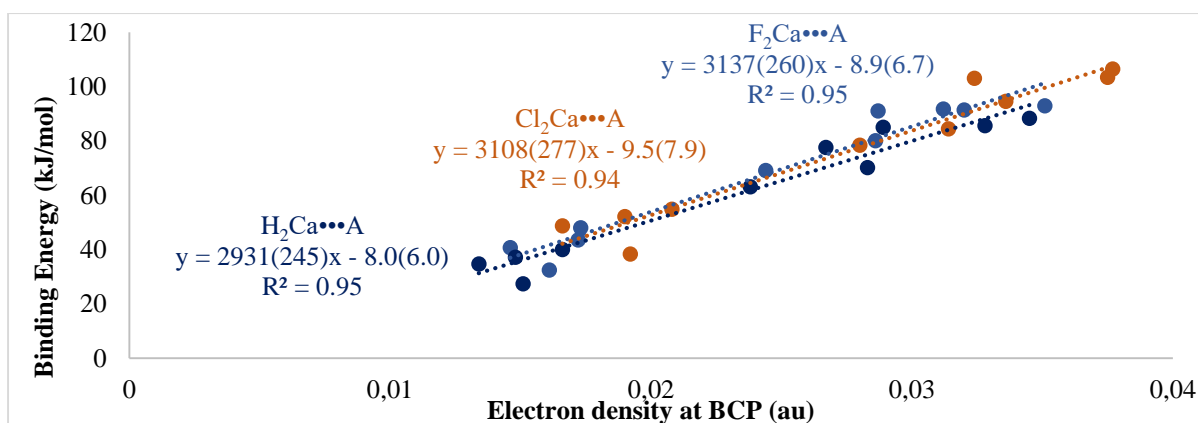
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
F <sub>2</sub> Mg•••OH <sub>2</sub>	0.0324	91.0
F <sub>2</sub> Mg•••SH <sub>2</sub>	0.0200	50.9
F <sub>2</sub> Mg•••NH <sub>3</sub>	0.0320	107.9
F <sub>2</sub> Mg•••NCH	0.0260	71.9
F <sub>2</sub> Mg•••OCH <sub>2</sub>	0.0307	84.8
F <sub>2</sub> Mg•••C <sub>2</sub> H <sub>4</sub>	0.0160	43.1
F <sub>2</sub> Mg•••OHCH <sub>3</sub>	0.0349	103.7
F <sub>2</sub> Mg•••PH <sub>3</sub>	0.0188	48.5
F <sub>2</sub> Mg•••CO	0.0177	35.5
F <sub>2</sub> Mg•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0363	109.2
Cl <sub>2</sub> Mg•••OH <sub>2</sub>	0.0341	97.8
Cl <sub>2</sub> Mg•••SH <sub>2</sub>	0.0187	56.7
Cl <sub>2</sub> Mg•••NH <sub>3</sub>	0.0338	117.2
Cl <sub>2</sub> Mg•••NCH	0.0279	78.9
Cl <sub>2</sub> Mg•••HCHO	0.0320	88.5
Cl <sub>2</sub> Mg•••C <sub>2</sub> H <sub>4</sub>	0.0171	49.6
Cl <sub>2</sub> Mg•••OHCH <sub>3</sub>	0.0368	112.7
Cl <sub>2</sub> Mg•••PH <sub>3</sub>	0.0207	55.7
Cl <sub>2</sub> Mg•••CO	0.0191	38.5
Cl <sub>2</sub> Mg•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0368	116.4
H <sub>2</sub> Mg•••OH <sub>2</sub>	0.0274	61.9
H <sub>2</sub> Mg•••SH <sub>2</sub>	0.0140	28.2
H <sub>2</sub> Mg•••NH <sub>3</sub>	0.0272	73.7
H <sub>2</sub> Mg•••NCH	0.0208	44.5
H <sub>2</sub> Mg•••OCH <sub>2</sub>	0.0252	55.0
H <sub>2</sub> Mg•••C <sub>2</sub> H <sub>4</sub>	0.0115	22.4
H <sub>2</sub> Mg•••OHCH <sub>3</sub>	0.0300	72.6
H <sub>2</sub> Mg•••PH <sub>3</sub>	0.0136	25.2
H <sub>2</sub> Mg•••CO	0.0123	16.5
H <sub>2</sub> Mg•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0305	75.9



**Figure D5.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Mg-bonded complexes.

**Table D6.** Electron density at BCP (au) and binding energy (kJ/mol) data for Ca-bonded complexes.

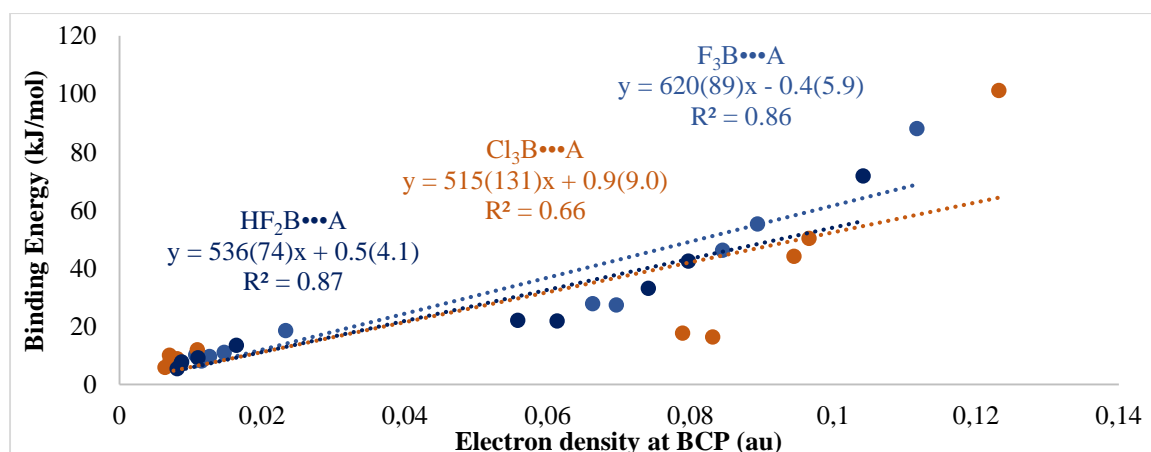
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
F <sub>2</sub> Ca•••OH <sub>2</sub>	0.0312	91.7
F <sub>2</sub> Ca•••SH <sub>2</sub>	0.0173	48.0
F <sub>2</sub> Ca•••NH <sub>3</sub>	0.0287	90.9
F <sub>2</sub> Ca•••NCH	0.0244	69.1
F <sub>2</sub> Ca•••CO	0.0161	32.4
F <sub>2</sub> Ca•••OCH <sub>2</sub>	0.0286	80.0
F <sub>2</sub> Ca•••C <sub>2</sub> H <sub>4</sub>	0.0146	40.6
F <sub>2</sub> Ca•••OHCH <sub>3</sub>	0.0320	91.3
F <sub>2</sub> Ca•••PH <sub>3</sub>	0.0172	43.4
F <sub>2</sub> Ca•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0351	92.9
Cl <sub>2</sub> Ca•••OH <sub>2</sub>	0.0336	94.5
Cl <sub>2</sub> Ca•••SH <sub>2</sub>	0.0208	54.8
Cl <sub>2</sub> Ca•••NH <sub>3</sub>	0.0324	102.9
Cl <sub>2</sub> Ca•••NCH	0.0280	78.3
Cl <sub>2</sub> Ca•••CO	0.0192	38.2
Cl <sub>2</sub> Ca•••OCH <sub>2</sub>	0.0314	84.4
Cl <sub>2</sub> Ca•••C <sub>2</sub> H <sub>4</sub>	0.0166	48.6
Cl <sub>2</sub> Ca•••OHCH <sub>3</sub>	0.0375	103.3
Cl <sub>2</sub> Ca•••PH <sub>3</sub>	0.0190	52.0
Cl <sub>2</sub> Ca•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0377	106.4
H <sub>2</sub> Ca•••SH <sub>2</sub>	0.0166	40.0
H <sub>2</sub> Ca•••NH <sub>3</sub>	0.0289	85.0
H <sub>2</sub> Ca•••NCH	0.0238	63.0
H <sub>2</sub> Ca•••CO	0.0151	27.3
H <sub>2</sub> Ca•••OCH <sub>2</sub>	0.0283	70.1
H <sub>2</sub> Ca•••C <sub>2</sub> H <sub>4</sub>	0.0134	34.6
H <sub>2</sub> Ca•••OHCH <sub>3</sub>	0.0328	85.6
H <sub>2</sub> Ca•••PH <sub>3</sub>	0.0148	37.1
H <sub>2</sub> Ca•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0345	88.3
H <sub>2</sub> Ca•••CH <sub>3</sub> CN	0.0267	77.6



**Figure D6.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Ca-bonded complexes.

**Table D7.** Electron density at BCP (au) and binding energy (kJ/mol) data for B-bonded complexes.

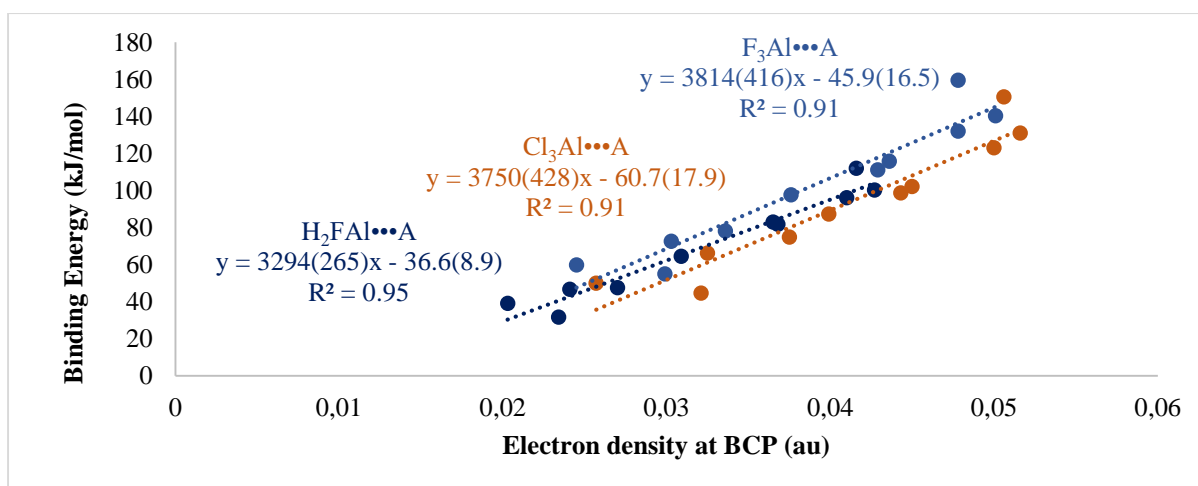
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
F <sub>3</sub> B•••OH <sub>2</sub>	0.0696	27.3
F <sub>3</sub> B•••SH <sub>2</sub>	0.0147	11.0
F <sub>3</sub> B•••NH <sub>3</sub>	0.1117	88.1
F <sub>3</sub> B•••NCH	0.0233	18.6
F <sub>3</sub> B•••CO	0.0115	8.0
F <sub>3</sub> B•••OCH <sub>2</sub>	0.0663	27.8
F <sub>3</sub> B•••C <sub>2</sub> H <sub>4</sub>	0.0107	10.1
F <sub>3</sub> B•••OHCH <sub>3</sub>	0.0845	46.2
F <sub>3</sub> B•••PH <sub>3</sub>	0.0126	9.6
F <sub>3</sub> B•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0894	55.2
Cl <sub>3</sub> B•••OH <sub>2</sub>	0.0831	16.4
Cl <sub>3</sub> B•••SH <sub>2</sub>	0.0081	8.9
Cl <sub>3</sub> B•••NH <sub>3</sub>	0.1232	101.2
Cl <sub>3</sub> B•••NCH	0.0109	11.9
Cl <sub>3</sub> B•••CO	0.0064	5.9
Cl <sub>3</sub> B•••OCH <sub>2</sub>	0.0789	17.6
Cl <sub>3</sub> B•••C <sub>2</sub> H <sub>4</sub>	0.007	10.0
Cl <sub>3</sub> B•••OHCH <sub>3</sub>	0.0945	44.1
Cl <sub>3</sub> B•••PH <sub>3</sub>	0.0071	8.2
Cl <sub>3</sub> B•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0966	50.2
HF <sub>2</sub> B•••OH <sub>2</sub>	0.0613	21.8
HF <sub>2</sub> B•••SH <sub>2</sub>	0.0110	9.1
HF <sub>2</sub> B•••NH <sub>3</sub>	0.1042	71.7
HF <sub>2</sub> B•••NCH	0.0164	13.5
HF <sub>2</sub> B•••CO	0.0081	5.5
HF <sub>2</sub> B•••OCH <sub>2</sub>	0.0558	22.0
HF <sub>2</sub> B•••C <sub>2</sub> H <sub>4</sub>	0.0087	7.7
HF <sub>2</sub> B•••OHCH <sub>3</sub>	0.0741	33.1
HF <sub>2</sub> B•••PH <sub>3</sub>	0.0086	7.0
HF <sub>2</sub> B•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0797	42.5



**Figure D7.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for B-bonded complexes.

**Table D8.** Electron density at BCP (au) and binding energy (kJ/mol) data for Al-bonded complexes.

Complexes	Electron Density (au)	Binding Energy (kJ/mol)
F <sub>3</sub> Al•••OH <sub>3</sub>	0.0436	115.7
F <sub>3</sub> Al•••SH <sub>3</sub>	0.0303	72.6
F <sub>3</sub> Al•••NH <sub>3</sub>	0.0478	159.4
F <sub>3</sub> Al•••NCH	0.0376	97.7
F <sub>3</sub> Al•••CO	0.0299	54.9
F <sub>3</sub> Al•••OCH <sub>2</sub>	0.0429	111.1
F <sub>3</sub> Al•••C <sub>2</sub> H <sub>4</sub>	0.0245	59.8
F <sub>3</sub> Al•••OHCH <sub>3</sub>	0.0478	132.0
F <sub>3</sub> Al•••PH <sub>3</sub>	0.0336	78.1
F <sub>3</sub> Al•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0501	140.2
Cl <sub>3</sub> Al•••OH <sub>2</sub>	0.0450	102.1
Cl <sub>3</sub> Al•••SH <sub>2</sub>	0.0325	66.1
Cl <sub>3</sub> Al•••NH <sub>3</sub>	0.0506	150.5
Cl <sub>3</sub> Al•••NCH	0.0399	87.2
Cl <sub>3</sub> Al•••CO	0.0321	44.6
Cl <sub>3</sub> Al•••OCH <sub>2</sub>	0.0443	98.7
Cl <sub>3</sub> Al•••C <sub>2</sub> H <sub>4</sub>	0.0257	49.9
Cl <sub>3</sub> Al•••OHCH <sub>3</sub>	0.0500	123.0
Cl <sub>3</sub> Al•••PH <sub>3</sub>	0.0375	74.8
Cl <sub>3</sub> Al•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0516	130.9
H <sub>2</sub> FAl•••OH <sub>2</sub>	0.0368	81.8
H <sub>2</sub> FAl•••SH <sub>2</sub>	0.0241	46.6
H <sub>2</sub> FAl•••NH <sub>3</sub>	0.0416	111.9
H <sub>2</sub> FAl•••NCH	0.0309	64.5
H <sub>2</sub> FAl•••CO	0.0234	31.6
H <sub>2</sub> FAl•••OCH <sub>2</sub>	0.0365	82.9
H <sub>2</sub> FAl•••C <sub>2</sub> H <sub>4</sub>	0.0203	39.0
H <sub>2</sub> FAl•••OHCH <sub>3</sub>	0.0410	96.1
H <sub>2</sub> FAl•••PH <sub>3</sub>	0.0270	47.5
H <sub>2</sub> FAl•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0427	100.2

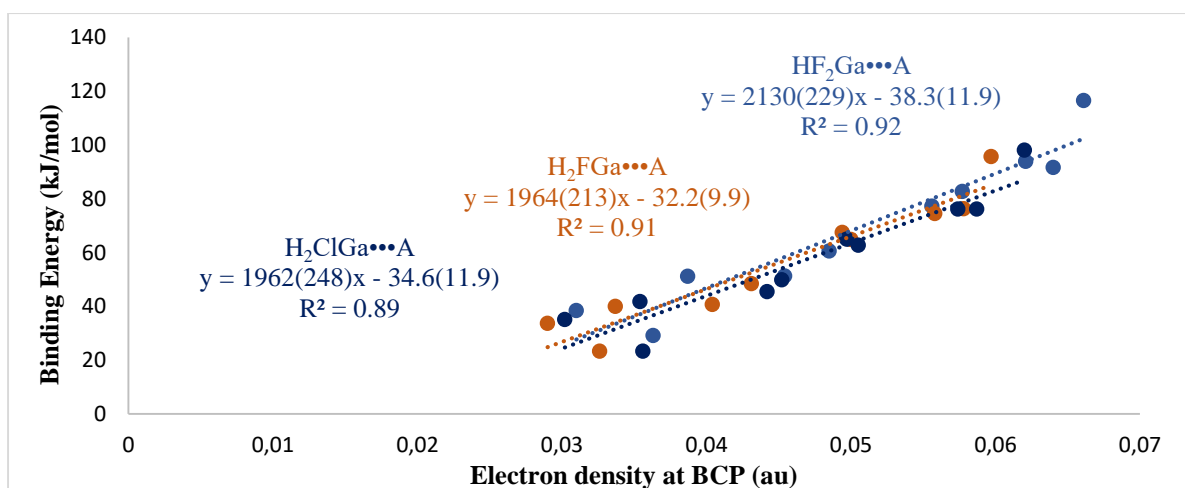


**Figure D8.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Al-bonded complexes.



**Table D9.** Electron density at BCP (au) and binding energy (kJ/mol) data for Ga-bonded complexes.

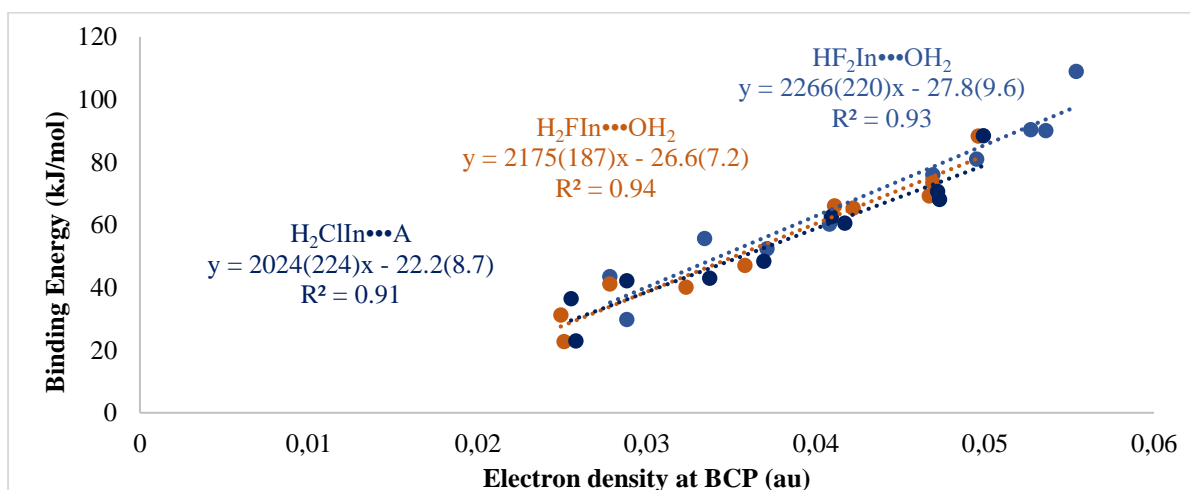
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
HF <sub>2</sub> Ga•••OH <sub>2</sub>	0.0577	82.7
HF <sub>2</sub> Ga•••SH <sub>2</sub>	0.0387	51.2
HF <sub>2</sub> Ga•••NH <sub>3</sub>	0.0661	116.6
HF <sub>2</sub> Ga•••NCH	0.0485	60.6
HF <sub>2</sub> Ga•••CO	0.0363	29.2
HF <sub>2</sub> Ga•••OCH <sub>2</sub>	0.0556	77.2
HF <sub>2</sub> Ga•••C <sub>2</sub> H <sub>4</sub>	0.031	38.4
HF <sub>2</sub> Ga•••OHCH <sub>3</sub>	0.0621	94.0
HF <sub>2</sub> Ga•••PH <sub>3</sub>	0.0454	51.3
HF <sub>2</sub> Ga•••O(CH <sub>3</sub> ) <sub>2</sub>	0.064	91.7
H <sub>2</sub> FGa•••OH <sub>2</sub>	0.0500	64.9
H <sub>2</sub> FGa•••SH <sub>2</sub>	0.0337	40.0
H <sub>2</sub> FGa•••NH <sub>3</sub>	0.0597	95.7
H <sub>2</sub> FGa•••NCH	0.0431	48.5
H <sub>2</sub> FGa•••CO	0.0326	23.3
H <sub>2</sub> FGa•••OCH <sub>2</sub>	0.0494	67.5
H <sub>2</sub> FGa•••C <sub>2</sub> H <sub>4</sub>	0.0290	33.7
H <sub>2</sub> FGa•••OHCH <sub>3</sub>	0.0558	74.6
H <sub>2</sub> FGa•••PH <sub>3</sub>	0.0404	40.7
H <sub>2</sub> FGa•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0578	76.3
H <sub>2</sub> ClGa•••OH <sub>2</sub>	0.0505	62.8
H <sub>2</sub> ClGa•••SH <sub>2</sub>	0.0354	41.8
H <sub>2</sub> ClGa•••NH <sub>3</sub>	0.0620	98.1
H <sub>2</sub> ClGa•••NCH	0.0452	49.9
H <sub>2</sub> ClGa•••CO	0.0356	23.3
H <sub>2</sub> ClGa•••OCH <sub>2</sub>	0.0497	65.0
H <sub>2</sub> ClGa•••C <sub>2</sub> H <sub>4</sub>	0.0302	35.2
H <sub>2</sub> ClGa•••OHCH <sub>3</sub>	0.0574	76.2
H <sub>2</sub> ClGa•••PH <sub>3</sub>	0.0442	45.5
H <sub>2</sub> ClGa•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0587	76.2



**Figure D9.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Ga-bonded complexes.

**Table D10.** Electron density at BCP (au) and binding energy (kJ/mol) data for In-bonded complexes.

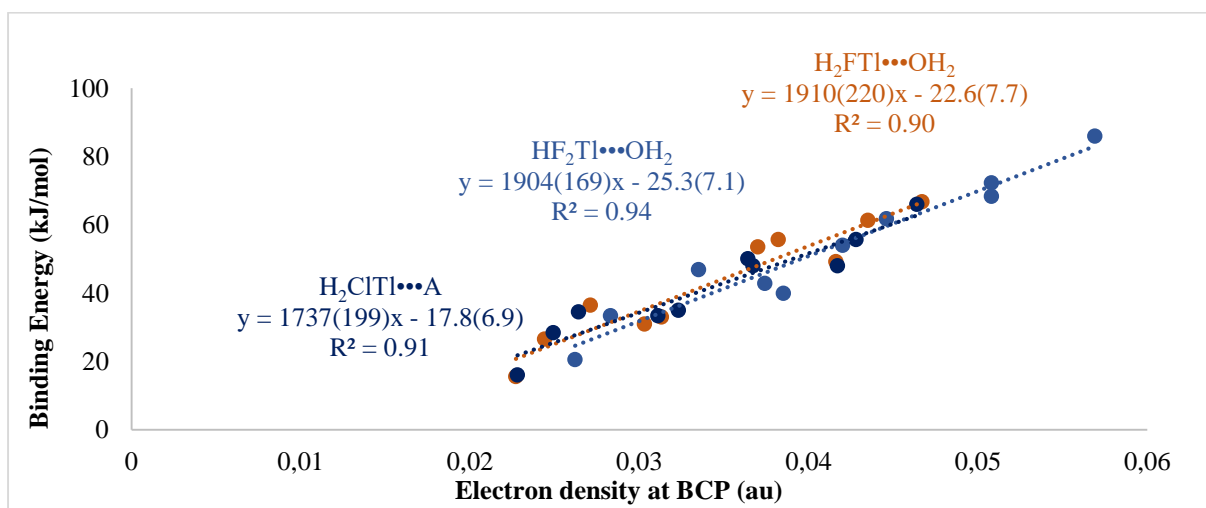
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
HF <sub>2</sub> In...OH <sub>2</sub>	0.0495	81.0
HF <sub>2</sub> In...SH <sub>2</sub>	0.0334	55.6
HF <sub>2</sub> In...NH <sub>3</sub>	0.0554	109.0
HF <sub>2</sub> In...NCH	0.0408	60.2
HF <sub>2</sub> In...CO	0.0288	29.8
HF <sub>2</sub> In...OCH <sub>2</sub>	0.0469	76.0
HF <sub>2</sub> In...C <sub>2</sub> H <sub>4</sub>	0.0278	43.4
HF <sub>2</sub> In...OHCH <sub>3</sub>	0.0527	90.3
HF <sub>2</sub> In...PH <sub>3</sub>	0.0371	52.3
HF <sub>2</sub> In...O(CH <sub>3</sub> ) <sub>2</sub>	0.0536	90.0
H <sub>2</sub> FIn...OH <sub>2</sub>	0.0422	65.3
H <sub>2</sub> FIn...SH <sub>2</sub>	0.0278	41.1
H <sub>2</sub> FIn...NH <sub>3</sub>	0.0496	88.3
H <sub>2</sub> FIn...NCH	0.0358	47.0
H <sub>2</sub> FIn...CO	0.0251	22.7
H <sub>2</sub> FIn...OCH <sub>2</sub>	0.0411	66.0
H <sub>2</sub> FIn...C <sub>2</sub> H <sub>4</sub>	0.0249	31.2
H <sub>2</sub> FIn...OHCH <sub>3</sub>	0.0469	73.4
H <sub>2</sub> FIn...PH <sub>3</sub>	0.0323	40.1
H <sub>2</sub> FIn...O(CH <sub>3</sub> ) <sub>2</sub>	0.0467	69.2
H <sub>2</sub> ClIn...OH <sub>2</sub>	0.0417	60.5
H <sub>2</sub> ClIn...SH <sub>2</sub>	0.0288	42.1
H <sub>2</sub> ClIn...NH <sub>3</sub>	0.0499	88.4
H <sub>2</sub> ClIn...NCH	0.0369	48.4
H <sub>2</sub> ClIn...CO	0.0258	22.9
H <sub>2</sub> ClIn...OCH <sub>2</sub>	0.0409	62.6
H <sub>2</sub> ClIn...C <sub>2</sub> H <sub>4</sub>	0.0255	36.4
H <sub>2</sub> ClIn...OHCH <sub>3</sub>	0.0472	70.7
H <sub>2</sub> ClIn...PH <sub>3</sub>	0.0337	43.0
H <sub>2</sub> ClIn...O(CH <sub>3</sub> ) <sub>2</sub>	0.0473	68.0



**Figure D10.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for In-bonded complexes.

**Table D11.** Electron density at BCP (au) and binding energy (kJ/mol) data for Tl-bonded complexes.

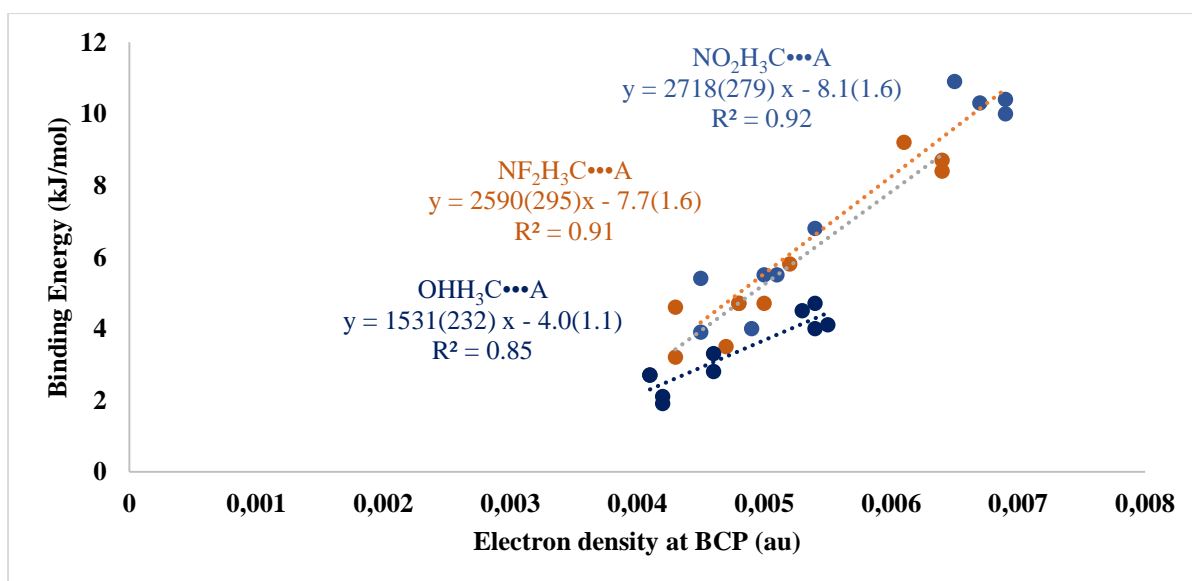
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
HF <sub>2</sub> Tl•••OH <sub>2</sub>	0.0420	54.0
HF <sub>2</sub> Tl•••SH <sub>2</sub>	0.0335	46.9
HF <sub>2</sub> Tl•••NH <sub>3</sub>	0.0569	86.0
HF <sub>2</sub> Tl•••NCH	0.0374	42.8
HF <sub>2</sub> Tl•••CO	0.0262	20.6
HF <sub>2</sub> Tl•••OCH <sub>2</sub>	0.0446	61.8
HF <sub>2</sub> Tl•••C <sub>2</sub> H <sub>4</sub>	0.0283	33.3
HF <sub>2</sub> Tl•••OHCH <sub>3</sub>	0.0508	72.2
HF <sub>2</sub> Tl•••PH <sub>3</sub>	0.0385	39.9
HF <sub>2</sub> Tl•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0508	68.4
H <sub>2</sub> FTl•••OH <sub>2</sub>	0.0382	55.7
H <sub>2</sub> FTl•••SH <sub>2</sub>	0.0271	36.5
H <sub>2</sub> FTl•••NH <sub>3</sub>	0.0467	66.7
H <sub>2</sub> FTl•••NCH	0.0313	33.0
H <sub>2</sub> FTl•••CO	0.0227	15.6
H <sub>2</sub> FTl•••OCH <sub>2</sub>	0.0370	53.5
H <sub>2</sub> FTl•••C <sub>2</sub> H <sub>4</sub>	0.0244	26.6
H <sub>2</sub> FTl•••OHCH <sub>3</sub>	0.0435	61.3
H <sub>2</sub> FTl•••PH <sub>3</sub>	0.0303	30.9
H <sub>2</sub> FTl•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0416	49.2
H <sub>2</sub> CITl•••OH <sub>2</sub>	0.0367	48.0
H <sub>2</sub> CITl•••SH <sub>2</sub>	0.0264	34.5
H <sub>2</sub> CITl•••NH <sub>3</sub>	0.0464	66.0
H <sub>2</sub> CITl•••NCH	0.0323	35.0
H <sub>2</sub> CITl•••CO	0.0228	16.1
H <sub>2</sub> CITl•••OCH <sub>2</sub>	0.0364	50.1
H <sub>2</sub> CITl•••C <sub>2</sub> H <sub>4</sub>	0.0249	28.4
H <sub>2</sub> CITl•••OHCH <sub>3</sub>	0.0428	55.7
H <sub>2</sub> CITl•••PH <sub>3</sub>	0.0311	33.3
H <sub>2</sub> CITl•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0417	48.0



**Figure D11.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Tl bonded complexes

**Table D12.** Electron density at BCP (au) and binding energy (kJ/mol) data for C-bonded complexes.

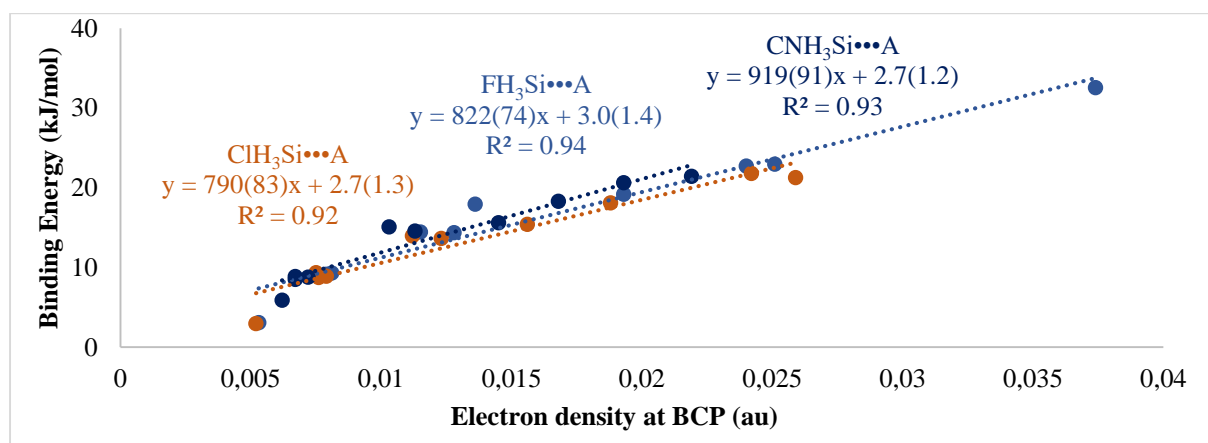
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
NO <sub>2</sub> H <sub>3</sub> C•••OH <sub>2</sub>	0.0069	10.0
NO <sub>2</sub> H <sub>3</sub> C•••SH <sub>2</sub>	0.0051	5.5
NO <sub>2</sub> H <sub>3</sub> C•••NH <sub>3</sub>	0.0069	10.4
NO <sub>2</sub> H <sub>3</sub> C•••NCH	0.0065	10.9
NO <sub>2</sub> H <sub>3</sub> C•••CO	0.0045	3.9
NO <sub>2</sub> H <sub>3</sub> C•••OCH <sub>2</sub>	0.0067	10.3
NO <sub>2</sub> H <sub>3</sub> C•••PH <sub>3</sub>	0.0045	5.4
NO <sub>2</sub> H <sub>3</sub> C•••HF	0.0054	6.8
NO <sub>2</sub> H <sub>3</sub> C•••C <sub>2</sub> H <sub>2</sub>	0.0050	5.5
NO <sub>2</sub> H <sub>3</sub> C•••HCl	0.0049	4.0
NF <sub>2</sub> H <sub>3</sub> C•••OH <sub>2</sub>	0.0064	8.4
NF <sub>2</sub> H <sub>3</sub> C•••SH <sub>2</sub>	0.0048	4.7
NF <sub>2</sub> H <sub>3</sub> C•••NH <sub>3</sub>	0.0064	8.7
NF <sub>2</sub> H <sub>3</sub> C•••NCH	0.0061	9.2
NF <sub>2</sub> H <sub>3</sub> C•••CO	0.0043	3.2
NF <sub>2</sub> H <sub>3</sub> C•••C <sub>2</sub> H <sub>4</sub>	0.0050	4.7
NF <sub>2</sub> H <sub>3</sub> C•••PH <sub>3</sub>	0.0043	4.6
NF <sub>2</sub> H <sub>3</sub> C•••HF	0.0052	5.8
NF <sub>2</sub> H <sub>3</sub> C•••C <sub>2</sub> H <sub>2</sub>	0.0048	4.7
NF <sub>2</sub> H <sub>3</sub> C•••HCl	0.0047	3.5
HOH <sub>3</sub> C•••H <sub>2</sub> O	0.0054	4.0
HOH <sub>3</sub> C•••H <sub>2</sub> S	0.0046	2.8
HOH <sub>3</sub> C•••NH <sub>3</sub>	0.0055	4.1
HOH <sub>3</sub> C•••NCH	0.0054	4.7
HOH <sub>3</sub> C•••CO	0.0042	1.9
HOH <sub>3</sub> C•••OCH <sub>2</sub>	0.0053	4.5
HOH <sub>3</sub> C•••HCl	0.0042	2.1
HOH <sub>3</sub> C•••PH <sub>3</sub>	0.0041	2.7
HOH <sub>3</sub> C•••HF	0.0041	2.7
HOH <sub>3</sub> C•••C <sub>2</sub> H <sub>2</sub>	0.0046	3.3



**Figure D12.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for C-bonded complexes.

**Table D13.** Electron density at BCP (au) and binding energy (kJ/mol) data for Si-bonded complexes.

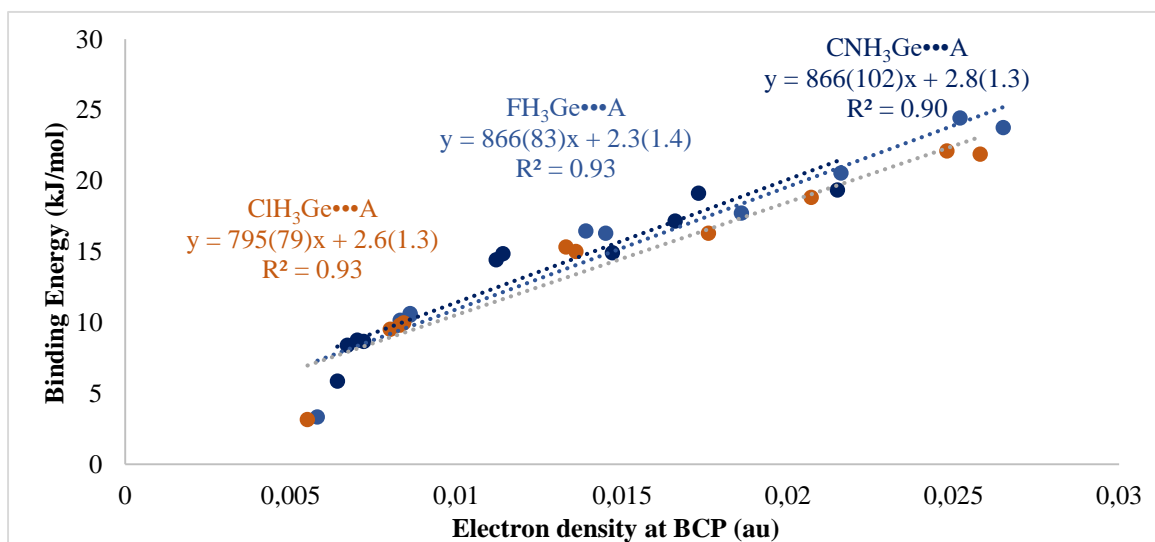
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
FH <sub>3</sub> Si•••OH <sub>2</sub>	0.0128	14.4
FH <sub>3</sub> Si•••SH <sub>2</sub>	0.0081	9.3
FH <sub>3</sub> Si•••NH <sub>3</sub>	0.0251	23.0
FH <sub>3</sub> Si•••PH <sub>3</sub>	0.0079	9.2
FH <sub>3</sub> Si•••CO	0.0053	3.1
FH <sub>3</sub> Si•••NCH	0.0115	14.5
FH <sub>3</sub> Si•••OHCH <sub>3</sub>	0.0193	19.2
FH <sub>3</sub> Si•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0240	22.7
FH <sub>3</sub> Si•••NCCH <sub>3</sub>	0.0136	17.9
FH <sub>3</sub> Si•••NH <sub>2</sub> CH <sub>3</sub>	0.0374	32.6
ClH <sub>3</sub> Si•••OH <sub>2</sub>	0.0123	13.6
ClH <sub>3</sub> Si•••SH <sub>2</sub>	0.0079	8.9
ClH <sub>3</sub> Si•••NH <sub>3</sub>	0.0259	21.3
ClH <sub>3</sub> Si•••PH <sub>3</sub>	0.0076	8.8
ClH <sub>3</sub> Si•••CO	0.0052	3.0
ClH <sub>3</sub> Si•••NCH	0.0112	14.0
ClH <sub>3</sub> Si•••OHCH <sub>3</sub>	0.0188	18.1
ClH <sub>3</sub> Si•••OCH <sub>2</sub>	0.0156	15.4
ClH <sub>3</sub> Si•••C <sub>2</sub> H <sub>4</sub>	0.0075	9.4
ClH <sub>3</sub> Si•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0242	21.8
CNH <sub>3</sub> Si•••OH <sub>2</sub>	0.0113	14.6
CNH <sub>3</sub> Si•••SH <sub>2</sub>	0.0072	8.8
CNH <sub>3</sub> Si•••NH <sub>3</sub>	0.0193	20.7
CNH <sub>3</sub> Si•••PH <sub>3</sub>	0.0067	8.5
CNH <sub>3</sub> Si•••CO	0.0062	5.9
CNH <sub>3</sub> Si•••NCH	0.0103	15.1
CNH <sub>3</sub> Si•••OHCH <sub>3</sub>	0.0168	18.3
CNH <sub>3</sub> Si•••OCH <sub>2</sub>	0.0145	15.6
CNH <sub>3</sub> Si•••C <sub>2</sub> H <sub>4</sub>	0.0067	8.9
CNH <sub>3</sub> Si•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0219	21.4



**Figure D13.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Si-bonded complexes.

**Table D14.** Electron density at BCP (au) and binding energy (kJ/mol) data for Ge-bonded complexes.

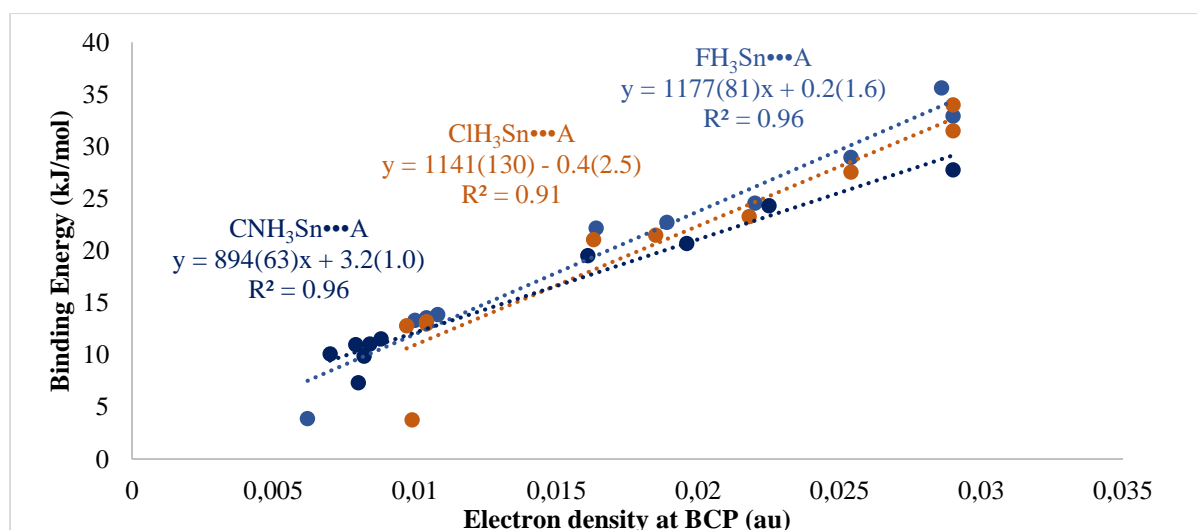
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
FH <sub>3</sub> Ge•••OH <sub>2</sub>	0.0145	16.3
FH <sub>3</sub> Ge•••SH <sub>2</sub>	0.0086	10.5
FH <sub>3</sub> Ge•••NH <sub>3</sub>	0.0252	24.4
FH <sub>3</sub> Ge•••PH <sub>3</sub>	0.0083	10.2
FH <sub>3</sub> Ge•••CO	0.0058	3.3
FH <sub>3</sub> Ge•••NCH	0.0139	16.5
FH <sub>3</sub> Ge•••OHCH <sub>3</sub>	0.0216	20.6
FH <sub>3</sub> Ge•••OCH <sub>2</sub>	0.0186	17.7
FH <sub>3</sub> Ge•••C <sub>2</sub> H <sub>4</sub>	0.0086	10.6
FH <sub>3</sub> Ge•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0265	23.8
ClH <sub>3</sub> Ge•••OH <sub>2</sub>	0.0136	15.0
ClH <sub>3</sub> Ge•••SH <sub>2</sub>	0.0083	9.8
ClH <sub>3</sub> Ge•••NH <sub>3</sub>	0.0248	22.1
ClH <sub>3</sub> Ge•••PH <sub>3</sub>	0.008	9.5
ClH <sub>3</sub> Ge•••CO	0.0055	3.2
ClH <sub>3</sub> Ge•••NCH	0.0133	15.3
ClH <sub>3</sub> Ge•••OHCH <sub>3</sub>	0.0207	18.8
ClH <sub>3</sub> Ge•••OCH <sub>2</sub>	0.0176	16.30
ClH <sub>3</sub> Ge•••C <sub>2</sub> H <sub>4</sub>	0.0084	10.0
ClH <sub>3</sub> Ge•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0258	21.9
CNH <sub>3</sub> Ge•••OH <sub>2</sub>	0.0112	14.4
CNH <sub>3</sub> Ge•••SH <sub>2</sub>	0.0070	8.8
CNH <sub>3</sub> Ge•••NH <sub>3</sub>	0.0173	19.1
CNH <sub>3</sub> Ge•••PH <sub>3</sub>	0.0067	8.4
CNH <sub>3</sub> Ge•••CO	0.0064	5.9
CNH <sub>3</sub> Ge•••NCH	0.0114	14.9
CNH <sub>3</sub> Ge•••OHCH <sub>3</sub>	0.0166	17.2
CNH <sub>3</sub> Ge•••OCH <sub>2</sub>	0.0147	14.9
CNH <sub>3</sub> Ge•••C <sub>2</sub> H <sub>4</sub>	0.0072	8.7
CNH <sub>3</sub> Ge•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0215	19.4



**Figure D14.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Ge-bonded complexes.

**Table D15.** Electron density at BCP (au) and binding energy (kJ/mol) data for Sn-bonded complexes.

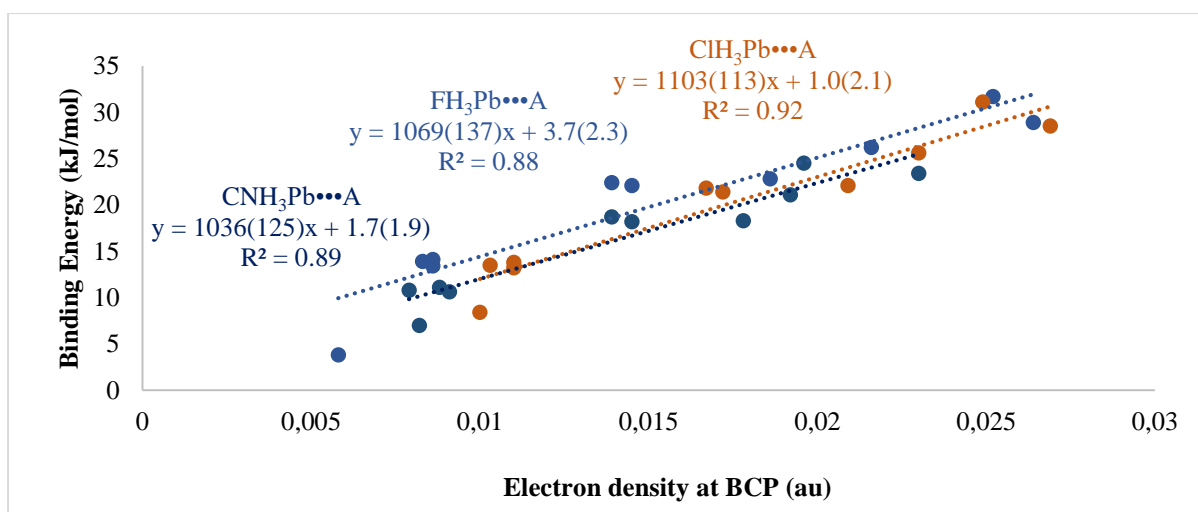
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
FH <sub>3</sub> Sn•••OH <sub>2</sub>	0.0189	22.7
FH <sub>3</sub> Sn•••SH <sub>2</sub>	0.0108	13.9
FH <sub>3</sub> Sn•••NH <sub>3</sub>	0.0286	35.6
FH <sub>3</sub> Sn•••PH <sub>3</sub>	0.0104	13.6
FH <sub>3</sub> Sn•••CO	0.0062	3.9
FH <sub>3</sub> Sn•••NCH	0.0164	22.1
FH <sub>3</sub> Sn•••OHCH <sub>3</sub>	0.0254	28.9
FH <sub>3</sub> Sn•••OCH <sub>2</sub>	0.0220	24.6
FH <sub>3</sub> Sn•••C <sub>2</sub> H <sub>4</sub>	0.0100	13.3
FH <sub>3</sub> Sn•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0290	32.9
ClH <sub>3</sub> Sn•••OH <sub>2</sub>	0.0185	21.5
ClH <sub>3</sub> Sn•••SH <sub>2</sub>	0.0104	13.2
ClH <sub>3</sub> Sn•••NH <sub>3</sub>	0.0290	34.0
ClH <sub>3</sub> Sn•••PH <sub>3</sub>	0.0104	13.0
ClH <sub>3</sub> Sn•••CO	0.0099	3.7
ClH <sub>3</sub> Sn•••NCH	0.0163	21.1
ClH <sub>3</sub> Sn•••OHCH <sub>3</sub>	0.0254	27.5
ClH <sub>3</sub> Sn•••OCH <sub>2</sub>	0.0218	23.3
ClH <sub>3</sub> Sn•••C <sub>2</sub> H <sub>4</sub>	0.0097	12.8
ClH <sub>3</sub> Sn•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0290	31.5
CNH <sub>3</sub> Sn•••OH <sub>2</sub>	0.0161	19.5
CNH <sub>3</sub> Sn•••SH <sub>2</sub>	0.0088	11.5
CNH <sub>3</sub> Sn•••FH	0.0082	9.9
CNH <sub>3</sub> Sn•••PH <sub>3</sub>	0.0079	11.0
CNH <sub>3</sub> Sn•••CO	0.0080	7.3
CNH <sub>3</sub> Sn•••C <sub>2</sub> H <sub>2</sub>	0.0070	10.1
CNH <sub>3</sub> Sn•••OHCH <sub>3</sub>	0.0225	24.3
CNH <sub>3</sub> Sn•••OCH <sub>2</sub>	0.0196	20.7
CNH <sub>3</sub> Sn•••C <sub>2</sub> H <sub>4</sub>	0.0084	11.0
CNH <sub>3</sub> Sn•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0290	27.7



**Figure D15.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Sn-bonded complexes.

**Table D16.** Electron density at BCP (au) and binding energy (kJ/mol) data for Pb-bonded complexes.

Complexes	Electron Density (au)	Binding Energy (kJ/mol)
FH <sub>3</sub> Pb•••OH <sub>2</sub>	0.01450	22.1
FH <sub>3</sub> Pb•••SH <sub>2</sub>	0.0086	14.1
FH <sub>3</sub> Pb•••NH <sub>3</sub>	0.0252	31.7
FH <sub>3</sub> Pb•••PH <sub>3</sub>	0.0083	13.9
FH <sub>3</sub> Pb•••CO	0.0058	3.8
FH <sub>3</sub> Pb•••NCH	0.0139	22.4
FH <sub>3</sub> Pb•••OHCH <sub>3</sub>	0.0216	26.2
FH <sub>3</sub> Pb•••OCH <sub>2</sub>	0.0186	22.8
FH <sub>3</sub> Pb•••C <sub>2</sub> H <sub>4</sub>	0.0086	13.4
FH <sub>3</sub> SPb•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0264	28.9
ClH <sub>3</sub> Pb•••OH <sub>2</sub>	0.0172	21.4
ClH <sub>3</sub> Pb•••SH <sub>2</sub>	0.0110	13.8
ClH <sub>3</sub> Pb•••NH <sub>3</sub>	0.0249	31.1
ClH <sub>3</sub> Pb•••PH <sub>3</sub>	0.0103	13.5
ClH <sub>3</sub> Pb•••CO	0.0100	8.4
ClH <sub>3</sub> Pb•••NCH	0.0167	21.8
ClH <sub>3</sub> Pb•••OHCH <sub>3</sub>	0.0230	25.6
ClH <sub>3</sub> Pb•••OCH <sub>2</sub>	0.0209	22.1
ClH <sub>3</sub> Pb•••C <sub>2</sub> H <sub>4</sub>	0.0110	13.2
ClH <sub>3</sub> Pb•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0269	28.5
CNH <sub>3</sub> Pb•••OH <sub>2</sub>	0.0145	18.2
CNH <sub>3</sub> Pb•••SH <sub>2</sub>	0.0088	11.1
CNH <sub>3</sub> Pb•••NH <sub>3</sub>	0.0196	24.5
CNH <sub>3</sub> Pb•••PH <sub>3</sub>	0.0079	10.8
CNH <sub>3</sub> Pb•••CO	0.0082	7.0
CNH <sub>3</sub> Pb•••NCH	0.0139	18.7
CNH <sub>3</sub> Pb•••OHCH <sub>3</sub>	0.0192	21.1
CNH <sub>3</sub> Pb•••OCH <sub>2</sub>	0.0178	18.3
CNH <sub>3</sub> Pb•••C <sub>2</sub> H <sub>4</sub>	0.0091	10.6
CNH <sub>3</sub> Pb•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0230	23.4

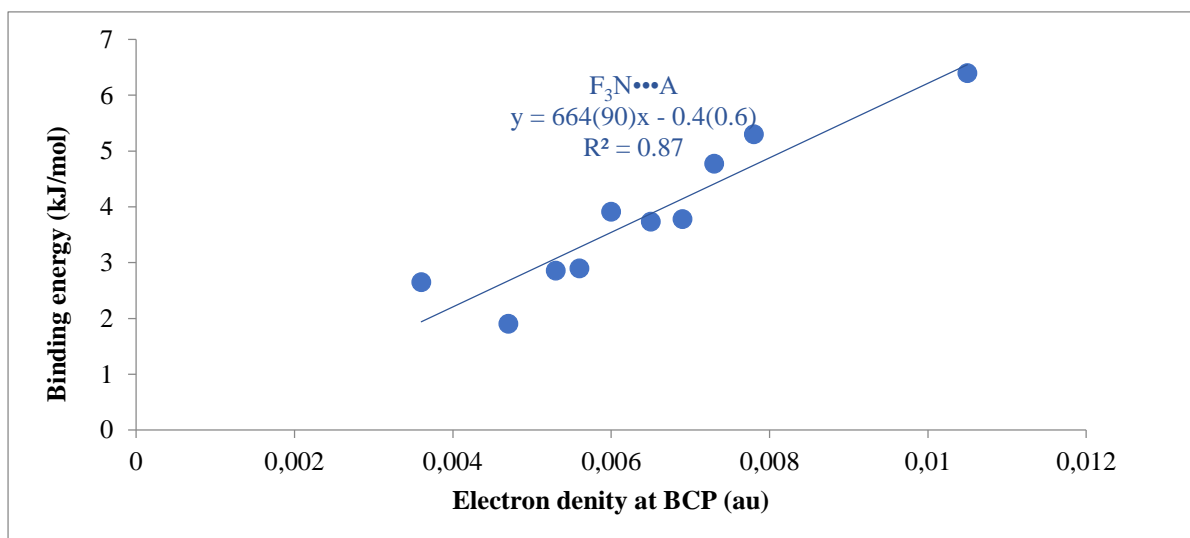


**Figure D16.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Pb-bonded complexes.



**Table D17.** Electron density at BCP (au) and binding energy (kJ/mol) data for N-bonded complexes.

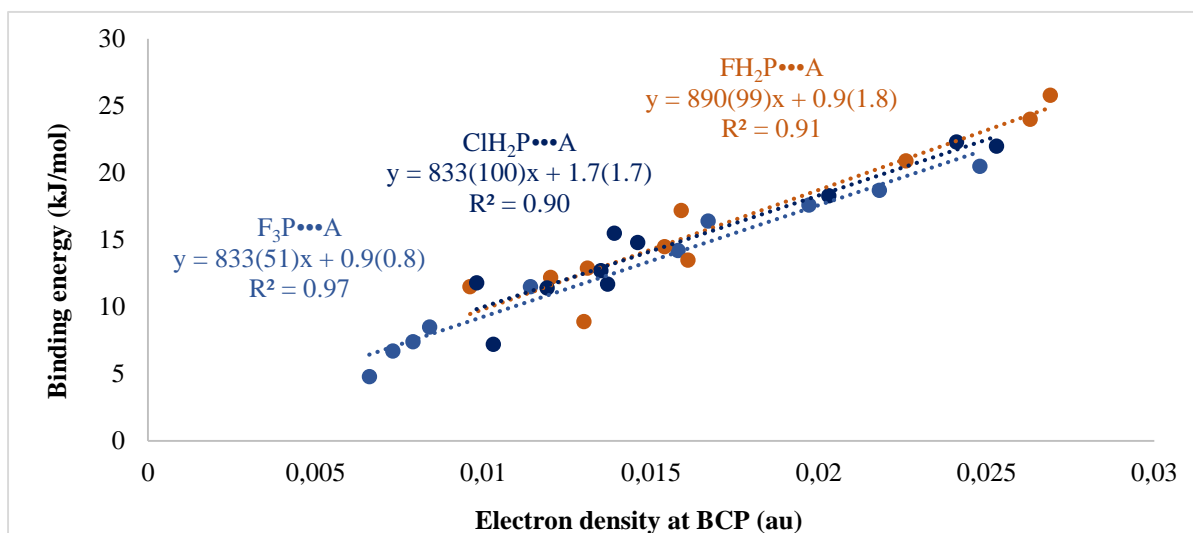
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
$F_3N \cdots OH_2$	0.0065	3.7
$F_3N \cdots SH_2$	0.0036	2.7
$F_3N \cdots NH_3$	0.0060	3.9
$F_3N \cdots NCH$	0.0069	3.8
$F_3N \cdots CO$	0.0047	1.9
$F_3N \cdots OCH_2$	0.0073	4.8
$F_3N \cdots C_2H_4$	0.0053	2.9
$F_3N \cdots OHCH_3$	0.0078	5.3
$F_3N \cdots O(CH_3)_2$	0.0105	6.4
$F_3N \cdots FH$	0.0056	2.9



**Figure D17.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for N-bonded complexes.

**Table D18.** Electron density at BCP (au) and binding energy (kJ/mol) data for P-bonded complexes.

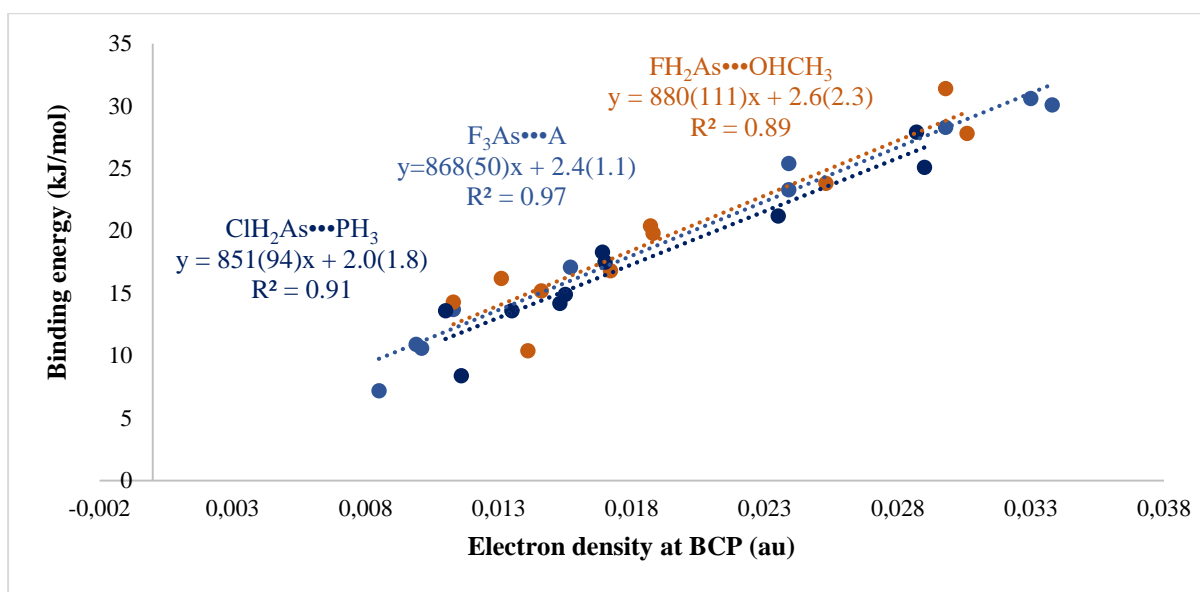
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
F <sub>3</sub> P...OH <sub>2</sub>	0.0158	14.2
F <sub>3</sub> P...SH <sub>2</sub>	0.0084	8.5
F <sub>3</sub> P...NH <sub>3</sub>	0.0218	18.7
F <sub>3</sub> P...NCH	0.0114	11.5
F <sub>3</sub> P...CO	0.0066	4.8
F <sub>3</sub> P...OCH <sub>2</sub>	0.0167	16.4
F <sub>3</sub> P...C <sub>2</sub> H <sub>4</sub>	0.0079	7.4
F <sub>3</sub> P...OHCH <sub>3</sub>	0.0197	17.6
F <sub>3</sub> P...PH <sub>3</sub>	0.0073	6.7
F <sub>3</sub> P...O(CH <sub>3</sub> ) <sub>2</sub>	0.0248	20.5
FH <sub>2</sub> P...SH <sub>2</sub>	0.0131	12.9
FH <sub>2</sub> P...NH <sub>3</sub>	0.0269	25.8
FH <sub>2</sub> P...NCH	0.0159	17.2
FH <sub>2</sub> P...CO	0.0130	8.9
FH <sub>2</sub> P...OCH <sub>2</sub>	0.0096	11.5
FH <sub>2</sub> P...C <sub>2</sub> H <sub>4</sub>	0.0154	14.5
FH <sub>2</sub> P...OHCH <sub>3</sub>	0.0226	20.9
FH <sub>2</sub> P...PH <sub>3</sub>	0.0161	13.5
FH <sub>2</sub> P...C <sub>2</sub> H <sub>2</sub>	0.0120	12.2
FH <sub>2</sub> P...O(CH <sub>3</sub> ) <sub>2</sub>	0.0263	24
ClH <sub>2</sub> P...OH <sub>2</sub>	0.0146	14.8
ClH <sub>2</sub> P...SH <sub>2</sub>	0.0119	11.4
ClH <sub>2</sub> P...NH <sub>3</sub>	0.0241	22.3
ClH <sub>2</sub> P...NCH	0.0139	15.5
ClH <sub>2</sub> P...CO	0.0103	7.2
ClH <sub>2</sub> P...OCH <sub>2</sub>	0.0098	11.8
ClH <sub>2</sub> P...C <sub>2</sub> H <sub>4</sub>	0.0135	12.7
ClH <sub>2</sub> P...OHCH <sub>3</sub>	0.0203	18.3
ClH <sub>2</sub> P...PH <sub>3</sub>	0.0137	11.7
ClH <sub>2</sub> P...O(CH <sub>3</sub> ) <sub>2</sub>	0.0253	22



**Figure D18.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for P-bonded complexes.

**Table D19.** Electron density at BCP (au) and binding energy (kJ/mol) data for As-bonded complexes.

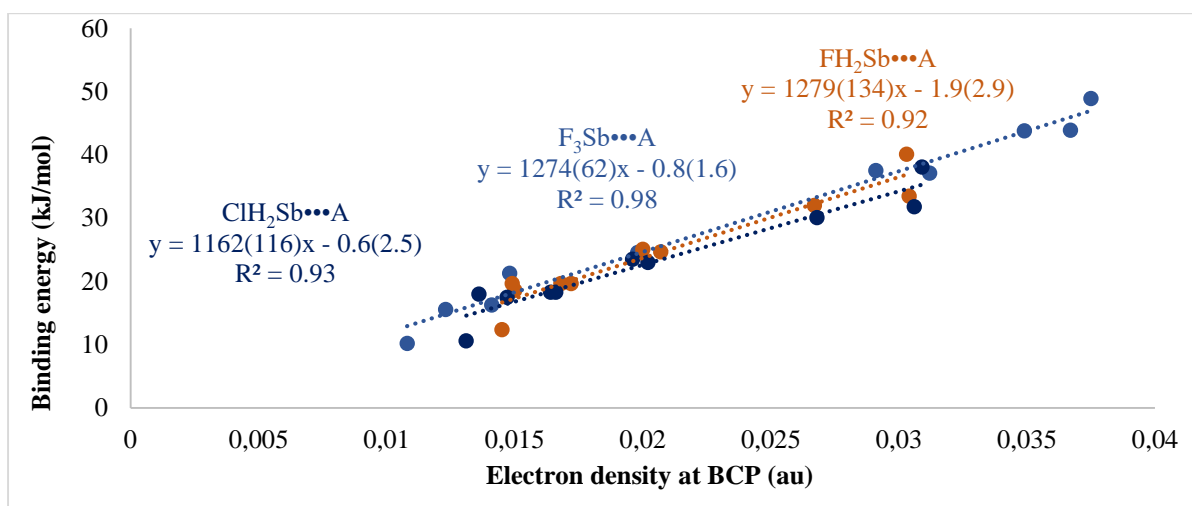
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
F <sub>3</sub> As•••OH <sub>2</sub>	0.0239	23.3
F <sub>3</sub> As•••SH <sub>2</sub>	0.0113	13.7
F <sub>3</sub> As•••NH <sub>3</sub>	0.0330	30.6
F <sub>3</sub> As•••NCH	0.0157	17.1
F <sub>3</sub> As•••CO	0.0085	7.2
F <sub>3</sub> As•••OCH <sub>2</sub>	0.0239	25.4
F <sub>3</sub> As•••C <sub>2</sub> H <sub>4</sub>	0.0099	10.9
F <sub>3</sub> As•••OHCH <sub>3</sub>	0.0298	28.3
F <sub>3</sub> As•••PH <sub>3</sub>	0.0101	10.6
F <sub>3</sub> As•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0338	30.1
FH <sub>2</sub> As•••OH <sub>2</sub>	0.0188	19.8
FH <sub>2</sub> As•••SH <sub>2</sub>	0.0146	15.2
FH <sub>2</sub> As•••NH <sub>3</sub>	0.0298	31.4
FH <sub>2</sub> As•••NCH	0.0187	20.4
FH <sub>2</sub> As•••CO	0.0141	10.4
FH <sub>2</sub> As•••OCH <sub>2</sub>	0.0113	14.3
FH <sub>2</sub> As•••C <sub>2</sub> H <sub>4</sub>	0.0172	16.8
FH <sub>2</sub> As•••OHCH <sub>3</sub>	0.0253	23.8
FH <sub>2</sub> As•••PH <sub>3</sub>	0.0131	16.2
FH <sub>2</sub> As•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0306	27.8
ClH <sub>2</sub> As•••OH <sub>2</sub>	0.0170	17.5
ClH <sub>2</sub> As•••SH <sub>2</sub>	0.0135	13.6
ClH <sub>2</sub> As•••NH <sub>3</sub>	0.0287	27.9
ClH <sub>2</sub> As•••NCH	0.0169	18.3
ClH <sub>2</sub> As•••CO	0.0116	8.4
ClH <sub>2</sub> As•••OCH <sub>2</sub>	0.0110	13.6
ClH <sub>2</sub> As•••C <sub>2</sub> H <sub>4</sub>	0.0155	14.9
ClH <sub>2</sub> As•••OHCH <sub>3</sub>	0.0235	21.2
ClH <sub>2</sub> As•••PH <sub>3</sub>	0.0153	14.2
ClH <sub>2</sub> As•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0290	25.1



**Figure D19.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for As-bonded complexes.

**Table D20.** Electron density at BCP (au) and binding energy (kJ/mol) data for Sb-bonded complexes.

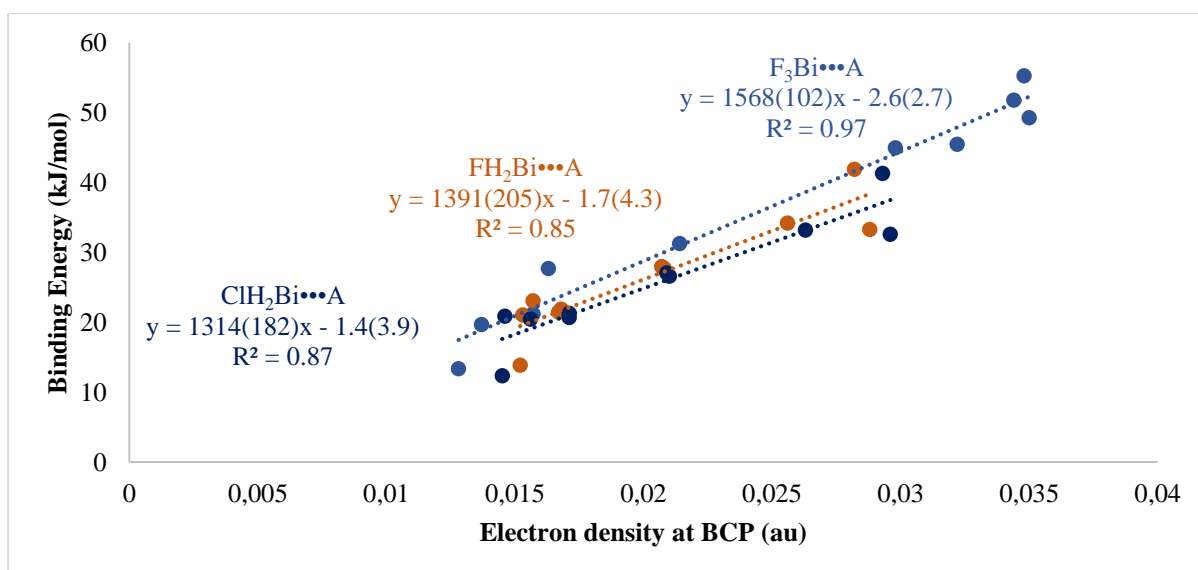
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
F <sub>3</sub> Sb•••OH <sub>2</sub>	0.0312	37.1
F <sub>3</sub> Sb•••SH <sub>2</sub>	0.0148	21.3
F <sub>3</sub> Sb•••NH <sub>3</sub>	0.0375	48.9
F <sub>3</sub> Sb•••NCH	0.0198	24.6
F <sub>3</sub> Sb•••CO	0.0108	10.2
F <sub>3</sub> Sb•••OCH <sub>2</sub>	0.0291	37.5
F <sub>3</sub> Sb•••C <sub>2</sub> H <sub>4</sub>	0.0123	15.6
F <sub>3</sub> Sb•••OHCH <sub>3</sub>	0.0349	43.8
F <sub>3</sub> Sb•••PH <sub>3</sub>	0.0141	16.3
F <sub>3</sub> Sb•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0367	43.9
FH <sub>2</sub> Sb•••OH <sub>2</sub>	0.0207	24.7
FH <sub>2</sub> Sb•••SH <sub>2</sub>	0.0150	18.6
FH <sub>2</sub> Sb•••NH <sub>3</sub>	0.0303	40.1
FH <sub>2</sub> Sb•••NCH	0.0200	25.1
FH <sub>2</sub> Sb•••CO	0.0145	12.4
FH <sub>2</sub> Sb•••OCH <sub>2</sub>	0.0149	19.7
FH <sub>2</sub> Sb•••C <sub>2</sub> H <sub>4</sub>	0.0168	19.7
FH <sub>2</sub> Sb•••OHCH <sub>3</sub>	0.0267	32
FH <sub>2</sub> Sb•••PH <sub>3</sub>	0.0172	19.7
FH <sub>2</sub> Sb•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0304	33.5
ClH <sub>2</sub> Sb•••OH <sub>2</sub>	0.0202	23
ClH <sub>2</sub> Sb•••SH <sub>2</sub>	0.0147	17.5
ClH <sub>2</sub> Sb•••NH <sub>3</sub>	0.0309	38.1
ClH <sub>2</sub> Sb•••NCH	0.0196	23.5
ClH <sub>2</sub> Sb•••CO	0.0131	10.6
ClH <sub>2</sub> Sb•••OCH <sub>2</sub>	0.0136	18
ClH <sub>2</sub> Sb•••C <sub>2</sub> H <sub>4</sub>	0.0164	18.3
ClH <sub>2</sub> Sb•••OHCH <sub>3</sub>	0.0268	30.1
ClH <sub>2</sub> Sb•••PH <sub>3</sub>	0.0166	18.3
ClH <sub>2</sub> Sb•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0306	31.8



**Figure D20.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Sb-bonded complexes.

**Table D21.** Electron density at BCP (au) and binding energy (kJ/mol) data for Bi-bonded complexes.

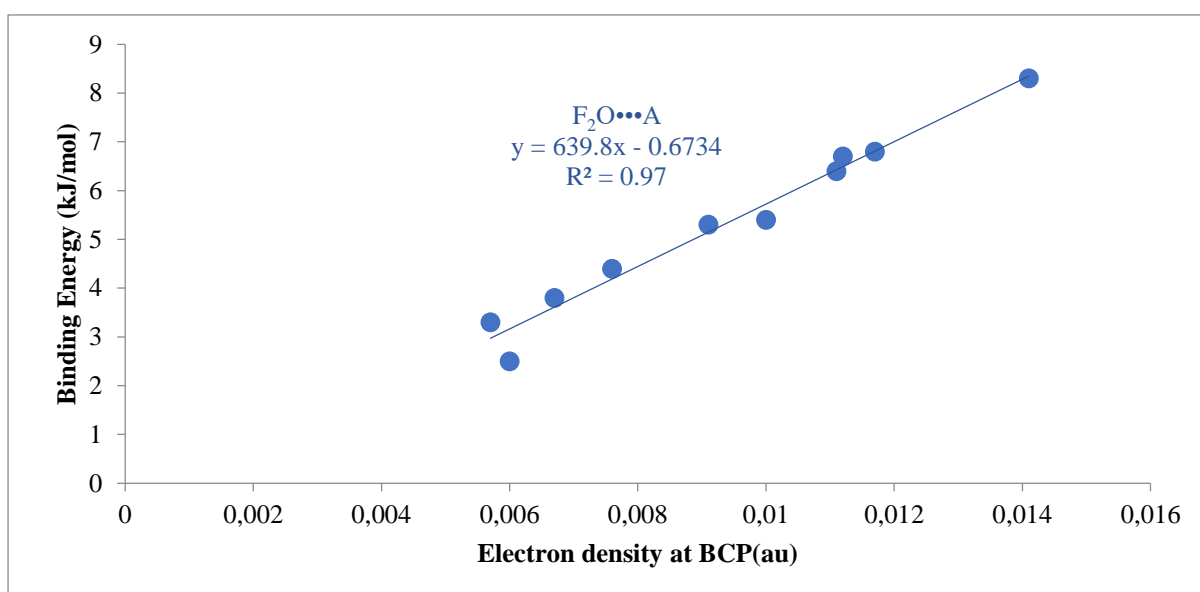
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
F <sub>3</sub> Bi•••OH <sub>2</sub>	0.0322	45.5
F <sub>3</sub> Bi•••SH <sub>2</sub>	0.0163	27.7
F <sub>3</sub> Bi•••NH <sub>3</sub>	0.0348	55.3
F <sub>3</sub> Bi•••NCH	0.0214	31.3
F <sub>3</sub> Bi•••CO	0.0128	13.4
F <sub>3</sub> Bi•••OCH <sub>2</sub>	0.0298	45
F <sub>3</sub> Bi•••C <sub>2</sub> H <sub>4</sub>	0.0137	19.7
F <sub>3</sub> Bi•••OHCH <sub>3</sub>	0.0344	51.8
F <sub>3</sub> Bi•••PH <sub>3</sub>	0.0157	21.2
F <sub>3</sub> Bi•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0350	49.3
FH <sub>2</sub> Bi•••OH <sub>2</sub>	0.0208	27.7
FH <sub>2</sub> Bi•••SH <sub>2</sub>	0.0153	21.1
FH <sub>2</sub> Bi•••NH <sub>3</sub>	0.0282	41.9
FH <sub>2</sub> Bi•••NCH	0.0207	28
FH <sub>2</sub> Bi•••CO	0.0152	13.9
FH <sub>2</sub> Bi•••OCH <sub>2</sub>	0.0157	23.1
FH <sub>2</sub> Bi•••C <sub>2</sub> H <sub>4</sub>	0.0167	21.5
FH <sub>2</sub> Bi•••OHCH <sub>3</sub>	0.0256	34.2
FH <sub>2</sub> Bi•••PH <sub>3</sub>	0.0168	21.9
FH <sub>2</sub> Bi•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0288	33.3
ClH <sub>2</sub> Bi•••OH <sub>2</sub>	0.0210	26.6
ClH <sub>2</sub> Bi•••SH <sub>2</sub>	0.0156	20.5
ClH <sub>2</sub> Bi•••NH <sub>3</sub>	0.0293	41.3
ClH <sub>2</sub> Bi•••NCH	0.0209	27.1
ClH <sub>2</sub> Bi•••CO	0.0145	12.4
ClH <sub>2</sub> Bi•••OCH <sub>2</sub>	0.0146	20.9
ClH <sub>2</sub> Bi•••C <sub>2</sub> H <sub>4</sub>	0.0171	20.7
ClH <sub>2</sub> Bi•••OHCH <sub>3</sub>	0.0263	33.2
ClH <sub>2</sub> Bi•••PH <sub>3</sub>	0.0171	21.3
ClH <sub>2</sub> Bi•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0296	32.6



**Figure D21.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Bi-bonded complexes.

**Table D22.** Electron density at BCP (au) and binding energy (kJ/mol) data for O-bonded complexes.

Complexes	Electron Density (au)	Binding Energy (kJ/mol)
$F_2O \cdots OH_2$	0.0100	5.4
$F_2O \cdots SH_2$	0.0067	3.8
$F_2O \cdots NH_3$	0.0111	6.4
$F_2O \cdots NCH$	0.0091	5.3
$F_2O \cdots CO$	0.0060	2.5
$F_2O \cdots OCH_2$	0.0112	6.7
$F_2O \cdots C_2H_4$	0.0076	4.4
$F_3N \cdots OHCH_3$	0.0117	6.8
$F_2O \cdots PH_3$	0.0057	3.3
$F_2O \cdots O(CH_3)_2$	0.0141	8.3

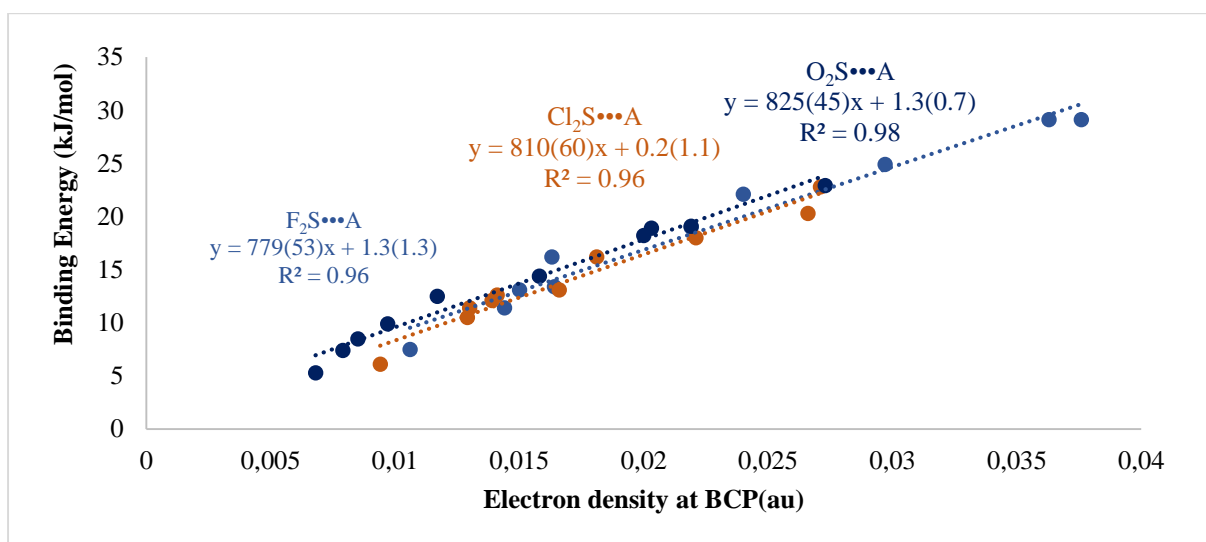


**Figure D22.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for O-bonded complexes.

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**Table D23.** Electron density at BCP (au) and binding energy (kJ/mol) data for S-bonded complexes.

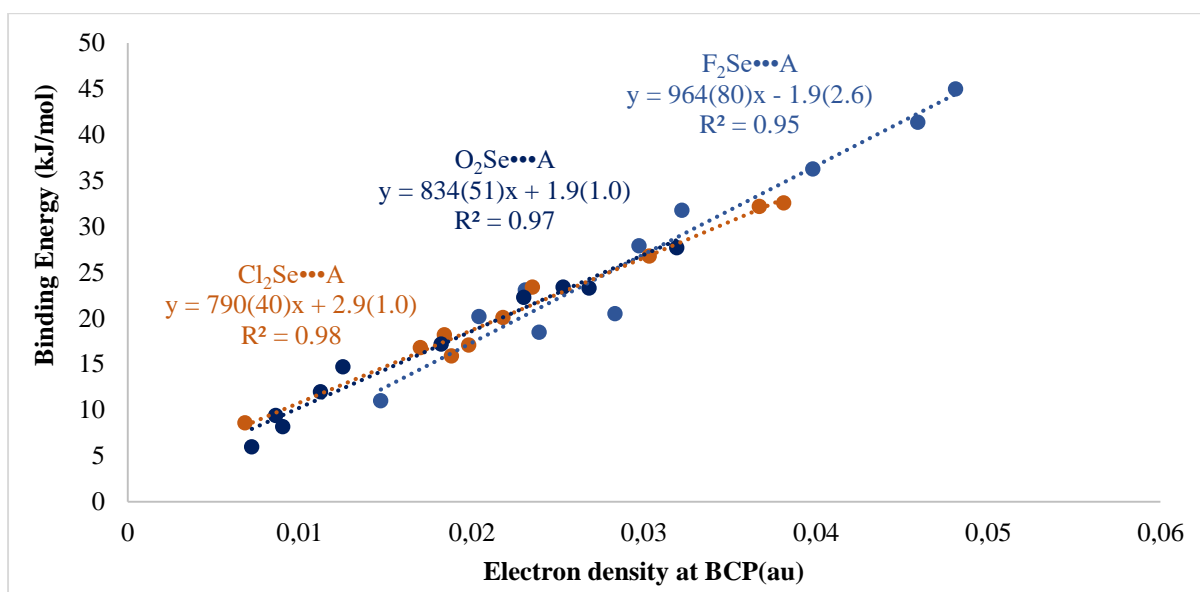
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
F <sub>2</sub> S•••OH <sub>2</sub>	0.0219	19
F <sub>2</sub> S•••SH <sub>2</sub>	0.0150	13.1
F <sub>2</sub> S•••NH <sub>3</sub>	0.0376	29.1
F <sub>2</sub> S•••NCH	0.0163	16.2
F <sub>2</sub> S•••CO	0.0106	7.5
F <sub>2</sub> S•••OCH <sub>2</sub>	0.0240	22.1
F <sub>2</sub> S•••C <sub>2</sub> H <sub>4</sub>	0.0164	13.4
F <sub>2</sub> S•••OHCH <sub>3</sub>	0.0297	24.9
F <sub>2</sub> S•••PH <sub>3</sub>	0.0144	11.4
F <sub>2</sub> S•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0363	29.1
Cl <sub>2</sub> S•••OH <sub>2</sub>	0.0166	13.1
Cl <sub>2</sub> S•••SH <sub>2</sub>	0.0130	11.4
Cl <sub>2</sub> S•••NH <sub>3</sub>	0.0266	20.3
Cl <sub>2</sub> S•••NCH	0.0141	12.6
Cl <sub>2</sub> S•••CO	0.0094	6.1
Cl <sub>2</sub> S•••OCH <sub>2</sub>	0.0181	16.2
Cl <sub>2</sub> S•••C <sub>2</sub> H <sub>4</sub>	0.0139	12.1
Cl <sub>2</sub> S•••OHCH <sub>3</sub>	0.0221	18
Cl <sub>2</sub> S•••PH <sub>3</sub>	0.0129	10.5
Cl <sub>2</sub> S•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0271	22.8
O <sub>2</sub> S•••OH <sub>2</sub>	0.0158	14.4
O <sub>2</sub> S•••SH <sub>2</sub>	0.0097	9.9
O <sub>2</sub> S•••NH <sub>3</sub>	0.0203	18.9
O <sub>2</sub> S•••NCH	0.0117	12.5
O <sub>2</sub> S•••CO	0.0068	5.3
O <sub>2</sub> S•••OCH <sub>2</sub>	0.0200	18.2
O <sub>2</sub> S•••C <sub>2</sub> H <sub>4</sub>	0.0085	8.5
O <sub>2</sub> S•••OHCH <sub>3</sub>	0.0219	19.1
O <sub>2</sub> S•••PH <sub>3</sub>	0.0079	7.4
O <sub>2</sub> S•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0273	22.9



**Figure D23.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for S-bonded complexes.

**Table D24.** Electron density at BCP (au) and binding energy (kJ/mol) data for Se-bonded complexes.

Complexes	Electron Density (au)	Binding Energy (kJ/mol)
F <sub>2</sub> Se•••OH <sub>2</sub>	0.0297	27.9
F <sub>2</sub> Se•••SH <sub>2</sub>	0.0204	20.2
F <sub>2</sub> Se•••NH <sub>3</sub>	0.0481	45
F <sub>2</sub> Se•••NCH	0.0231	23.1
F <sub>2</sub> Se•••CO	0.0147	11
F <sub>2</sub> Se•••OCH <sub>2</sub>	0.0322	31.8
F <sub>2</sub> Se•••C <sub>2</sub> H <sub>4</sub>	0.0283	20.5
F <sub>2</sub> Se•••OHCH <sub>3</sub>	0.0398	36.3
F <sub>2</sub> Se•••PH <sub>3</sub>	0.0239	18.5
F <sub>2</sub> Se•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0459	41.4
Cl <sub>2</sub> Se•••OH <sub>2</sub>	0.0218	20.1
Cl <sub>2</sub> Se•••SH <sub>2</sub>	0.0170	16.8
Cl <sub>2</sub> Se•••NH <sub>3</sub>	0.0381	32.6
Cl <sub>2</sub> Se•••NCH	0.0184	18.2
Cl <sub>2</sub> Se•••CO	0.0068	8.6
Cl <sub>2</sub> Se•••OCH <sub>2</sub>	0.0235	23.4
Cl <sub>2</sub> Se•••C <sub>2</sub> H <sub>4</sub>	0.0198	17.1
Cl <sub>2</sub> Se•••OHCH <sub>3</sub>	0.0303	26.8
Cl <sub>2</sub> Se•••PH <sub>3</sub>	0.0188	15.9
Cl <sub>2</sub> Se•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0367	32.2
O <sub>2</sub> Se•••OH <sub>2</sub>	0.0182	17.2
O <sub>2</sub> Se•••SH <sub>2</sub>	0.0112	12
O <sub>2</sub> Se•••NH <sub>3</sub>	0.0253	23.4
O <sub>2</sub> Se•••NCH	0.0125	14.7
O <sub>2</sub> Se•••CO	0.0072	6
O <sub>2</sub> Se•••OCH <sub>2</sub>	0.0230	22.3
O <sub>2</sub> Se•••C <sub>2</sub> H <sub>4</sub>	0.0086	9.4
O <sub>2</sub> Se•••OHCH <sub>3</sub>	0.0268	23.3
O <sub>2</sub> Se•••PH <sub>3</sub>	0.0090	8.2
O <sub>2</sub> Se•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0319	27.7

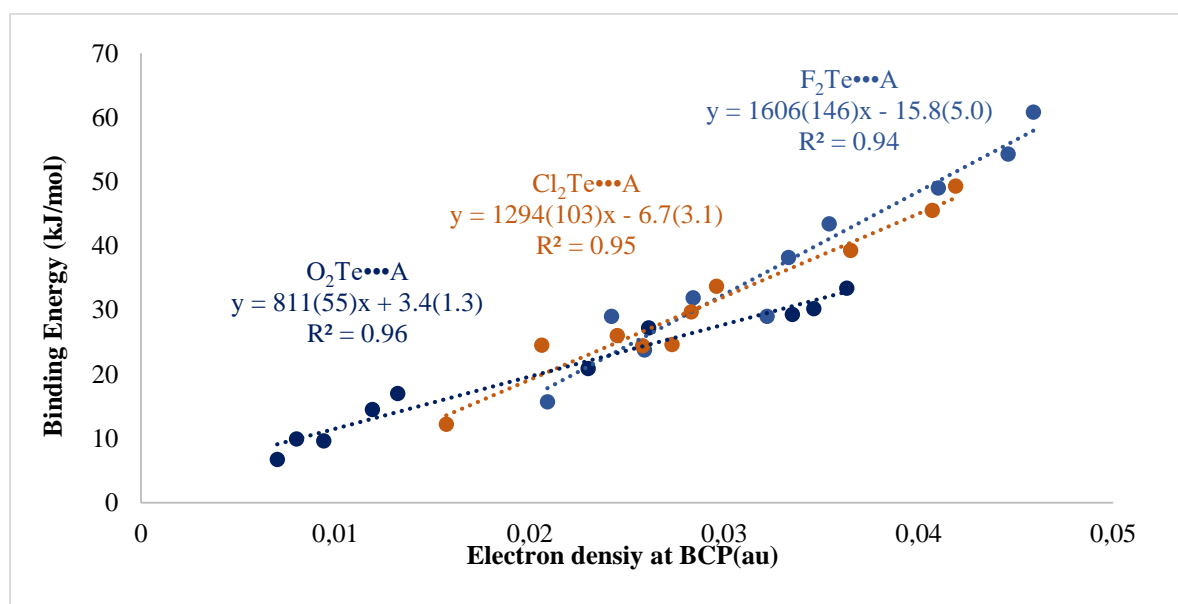


**Figure D24.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Se-bonded complexes.



**Table D25.** Electron density at BCP (au) and binding energy (kJ/mol) data for Te-bonded complexes.

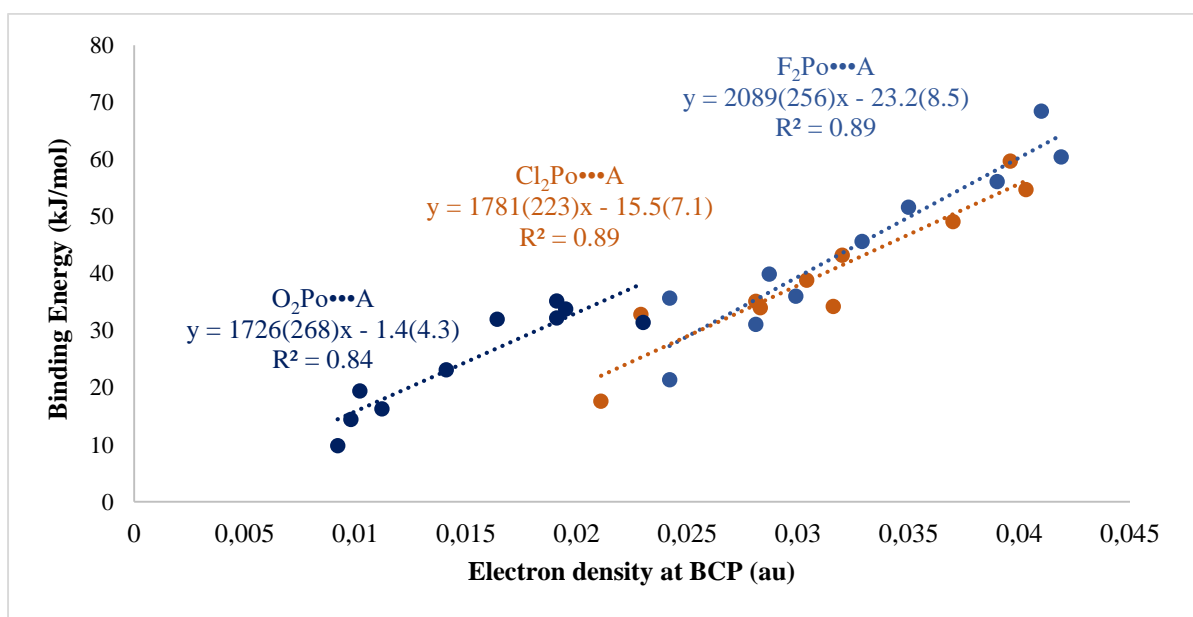
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
F <sub>2</sub> Te•••OH <sub>2</sub>	0.0333	38.2
F <sub>2</sub> Te•••SH <sub>2</sub>	0.0242	29.0
F <sub>2</sub> Te•••C <sub>2</sub> H <sub>2</sub>	0.0259	23.8
F <sub>2</sub> Te•••NH <sub>3</sub>	0.0459	60.8
F <sub>2</sub> Te•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0446	54.3
F <sub>2</sub> Te•••CO	0.0209	15.7
F <sub>2</sub> Te•••OCH <sub>2</sub>	0.0354	43.4
F <sub>2</sub> Te•••OHCH <sub>3</sub>	0.0410	49.0
F <sub>2</sub> Te•••PH <sub>3</sub>	0.0322	29.0
F <sub>2</sub> Te•••NCH	0.0284	31.9
Cl <sub>2</sub> Te•••OH <sub>2</sub>	0.0283	29.7
Cl <sub>2</sub> Te•••SH <sub>2</sub>	0.0206	24.5
Cl <sub>2</sub> Te•••NH <sub>3</sub>	0.0419	49.3
Cl <sub>2</sub> Te•••NCH	0.0245	26.0
Cl <sub>2</sub> Te•••CO	0.0157	12.2
Cl <sub>2</sub> Te•••OCH <sub>2</sub>	0.0296	33.7
Cl <sub>2</sub> Te•••C <sub>2</sub> H <sub>4</sub>	0.0273	24.6
Cl <sub>2</sub> Te•••OHCH <sub>3</sub>	0.0365	39.3
Cl <sub>2</sub> Te•••PH <sub>3</sub>	0.0258	24.4
Cl <sub>2</sub> Te•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0407	45.5
O <sub>2</sub> Te•••OH <sub>2</sub>	0.0230	20.9
O <sub>2</sub> Te•••SH <sub>2</sub>	0.0119	14.5
O <sub>2</sub> Te•••NH <sub>3</sub>	0.0346	30.2
O <sub>2</sub> Te•••NCH	0.0132	17.0
O <sub>2</sub> Te•••CO	0.0070	6.7
O <sub>2</sub> Te•••OCH <sub>2</sub>	0.0261	27.2
O <sub>2</sub> Te•••C <sub>2</sub> H <sub>4</sub>	0.0080	9.9
O <sub>2</sub> Te•••OHCH <sub>3</sub>	0.0335	29.3
O <sub>2</sub> Te•••PH <sub>3</sub>	0.0094	9.6
O <sub>2</sub> Te•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0363	33.4



**Figure D25.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Te-bonded complexes.

**Table D26.** Electron density at BCP (au) and binding energy (kJ/mol) data for Po-bonded complexes.

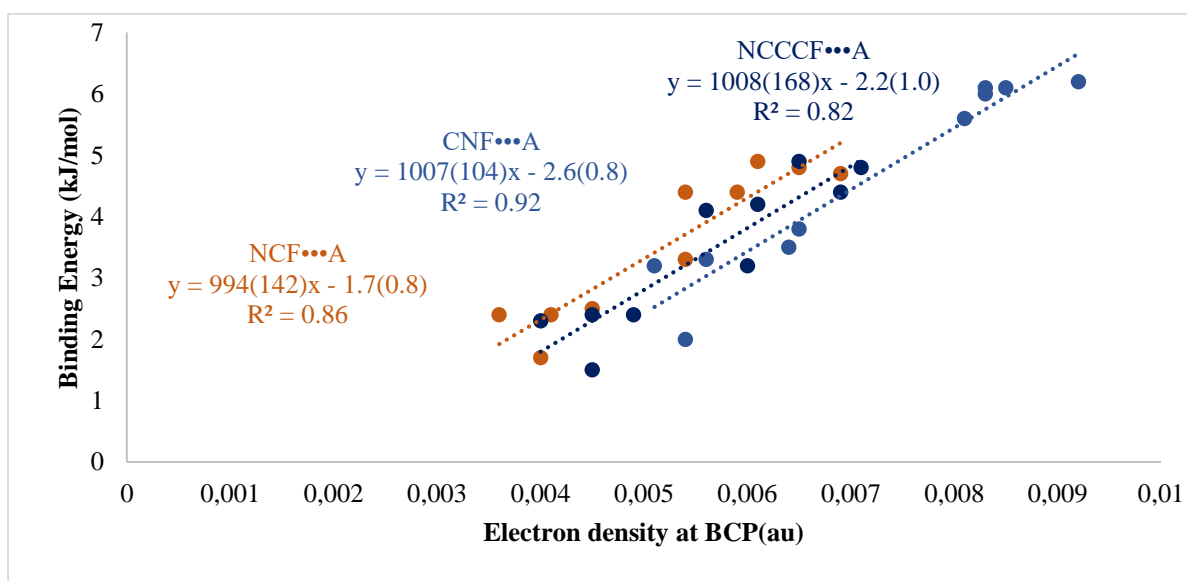
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
F <sub>2</sub> Po•••OH <sub>2</sub>	0.0329	45.6
F <sub>2</sub> Po•••SH <sub>2</sub>	0.0242	35.7
F <sub>2</sub> Po•••NH <sub>3</sub>	0.0410	68.4
F <sub>2</sub> Po•••NCH	0.0287	39.9
F <sub>2</sub> Po•••OCH <sub>2</sub>	0.0350	51.6
F <sub>2</sub> Po•••C <sub>2</sub> H <sub>2</sub>	0.0281	31.1
F <sub>2</sub> Po••• OHCH <sub>3</sub>	0.0390	56.1
F <sub>2</sub> Po•••PH <sub>3</sub>	0.0299	36.0
F <sub>2</sub> Po•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0419	60.4
F <sub>2</sub> Po•••CO	0.0242	21.4
Cl <sub>2</sub> Po•••OH <sub>2</sub>	0.0304	38.8
Cl <sub>2</sub> Po•••SH <sub>2</sub>	0.0229	32.8
Cl <sub>2</sub> Po•••NH <sub>3</sub>	0.0396	59.7
Cl <sub>2</sub> Po•••NCH	0.0281	35.1
Cl <sub>2</sub> Po•••OCH <sub>2</sub>	0.0320	43.2
Cl <sub>2</sub> Po•••C <sub>2</sub> H <sub>4</sub>	0.0316	34.2
Cl <sub>2</sub> Po••• OHCH <sub>3</sub>	0.0370	49.1
Cl <sub>2</sub> Po•••PH <sub>3</sub>	0.0283	34.0
Cl <sub>2</sub> Po•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0403	54.7
F <sub>2</sub> Po•••CO	0.0211	17.6
O <sub>2</sub> Po•••OH <sub>2</sub>	0.0164	32.0
O <sub>2</sub> Po•••SH <sub>2</sub>	0.0102	19.4
O <sub>2</sub> o•••NH <sub>3</sub>	0.0195	33.8
O <sub>2</sub> Po•••NCH	0.0141	23.1
O <sub>2</sub> Po•••OCH <sub>2</sub>	0.0191	32.2
O <sub>2</sub> Po•••C <sub>2</sub> H <sub>4</sub>	0.0098	14.4
O <sub>2</sub> Po••• OHCH <sub>3</sub>	0.0191	35.2
O <sub>2</sub> Po•••PH <sub>3</sub>	0.0112	16.3
O <sub>2</sub> Po•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0230	31.4
O <sub>2</sub> Po•••CO	0.0092	9.8



**Figure D26.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Po-bonded complexes

**Table D27.** Electron density at BCP (au) and binding energy (kJ/mol) data for F-bonded complexes.

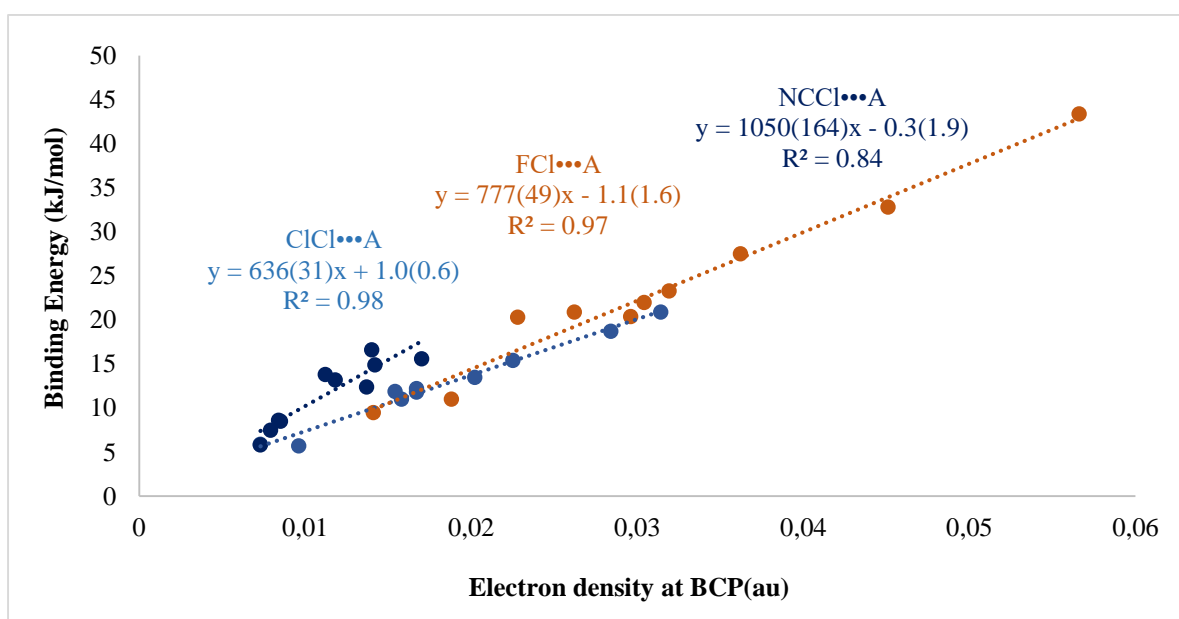
Complexes	Electron Density (au)	Binding Energy(kJ/mol)
CNF•••OH <sub>2</sub>	0.0081	5.6
CNF•••SH <sub>2</sub>	0.0056	3.3
CNF•••NH <sub>3</sub>	0.0083	6.1
CNF•••NCH	0.0083	6.0
CNF•••OCH <sub>2</sub>	0.0065	3.8
CNF•••C <sub>2</sub> H <sub>4</sub>	0.0085	6.1
CNF•••OHCH <sub>3</sub>	0.0064	3.5
CNF•••PH <sub>3</sub>	0.0092	6.2
CNF•••CO	0.0051	3.2
CNF•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0054	2.0
NCF•••OH <sub>2</sub>	0.0059	4.4
NCF•••SH <sub>2</sub>	0.0041	2.4
NCF•••NH <sub>3</sub>	0.0054	4.4
NCF•••NCH	0.0061	4.9
NCF•••FH	0.0054	3.3
NCF•••OCH <sub>2</sub>	0.0065	4.8
NCF•••C <sub>2</sub> H <sub>4</sub>	0.0045	2.5
NCF•••OHCH <sub>3</sub>	0.0069	4.7
NCF•••PH <sub>3</sub>	0.0036	2.4
NCF•••CO	0.0040	1.7
NCCCF•••OH <sub>2</sub>	0.0061	4.2
NCCCF•••SH <sub>2</sub>	0.0045	2.4
NCCCF•••NH <sub>3</sub>	0.0056	4.1
NCCCF•••NCH	0.0065	4.9
NCCCF•••OCH <sub>2</sub>	0.0071	4.8
NCCCF•••C <sub>2</sub> H <sub>4</sub>	0.0049	2.4
NCCCF•••OHCH <sub>3</sub>	0.0069	4.4
NCCCF•••PH <sub>3</sub>	0.0040	2.3
NCCCF•••CO	0.0045	1.5
NCCCF•••FH	0.0060	3.2



**Figure D27.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for F-bonded complexes.

**Table D28.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Cl-bonded complexes.

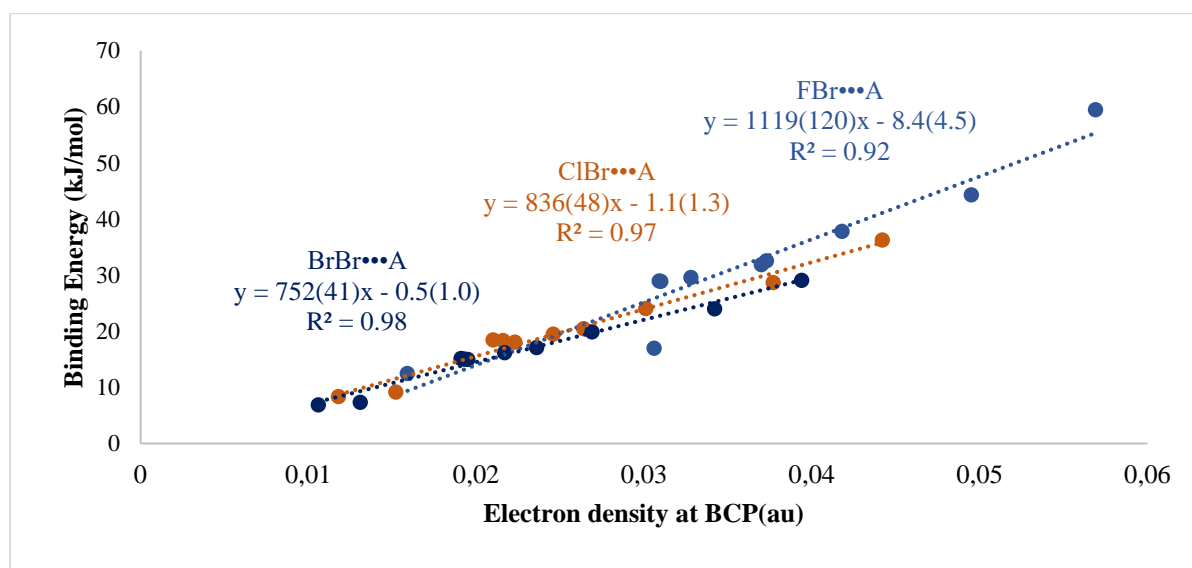
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
ClCl...OH <sub>2</sub>	0.0167	11.8
ClCl...SH <sub>2</sub>	0.0158	11.0
ClCl...NH <sub>3</sub>	0.0314	20.9
ClCl...NCH	0.0154	11.9
ClCl...CO	0.0073	5.9
ClCl...OCH <sub>2</sub>	0.0202	13.5
ClCl...C <sub>2</sub> H <sub>4</sub>	0.0167	12.2
ClCl...OHCH <sub>3</sub>	0.0225	15.4
ClCl...FH	0.0096	5.7
ClCl...O(CH <sub>3</sub> ) <sub>2</sub>	0.0284	18.7
FCl...OH <sub>2</sub>	0.0262	20.9
FCl...SH <sub>2</sub>	0.0296	20.4
FCl...NH <sub>3</sub>	0.0566	43.4
FCl...NCH	0.0228	20.3
FCl...CO	0.0188	11.0
FCl...OCH <sub>2</sub>	0.0319	23.3
FCl...C <sub>2</sub> H <sub>4</sub>	0.0304	22.0
FCl...OHCH <sub>3</sub>	0.0362	27.5
FCl...FH	0.0141	9.5
FCl...O(CH <sub>3</sub> ) <sub>2</sub>	0.0451	32.8
NCCl...OH <sub>2</sub>	0.0118	13.2
NCCl...SH <sub>2</sub>	0.0085	8.5
NCCl...NH <sub>3</sub>	0.0140	16.6
NCCl...NCH	0.0112	13.8
NCCl...CO	0.0073	5.8
NCCl...OCH <sub>2</sub>	0.0137	12.4
NCCl...C <sub>2</sub> H <sub>4</sub>	0.0084	8.6
NCCl...OHCH <sub>3</sub>	0.0142	14.9
NCCl...FH	0.0079	7.5
NCCl...O(CH <sub>3</sub> ) <sub>2</sub>	0.0170	15.6



**Figure D28.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Cl-bonded complexes.

**Table D29.** Electron density at BCP (au) and binding energy (kJ/mol) data for Br-bonded complexes.

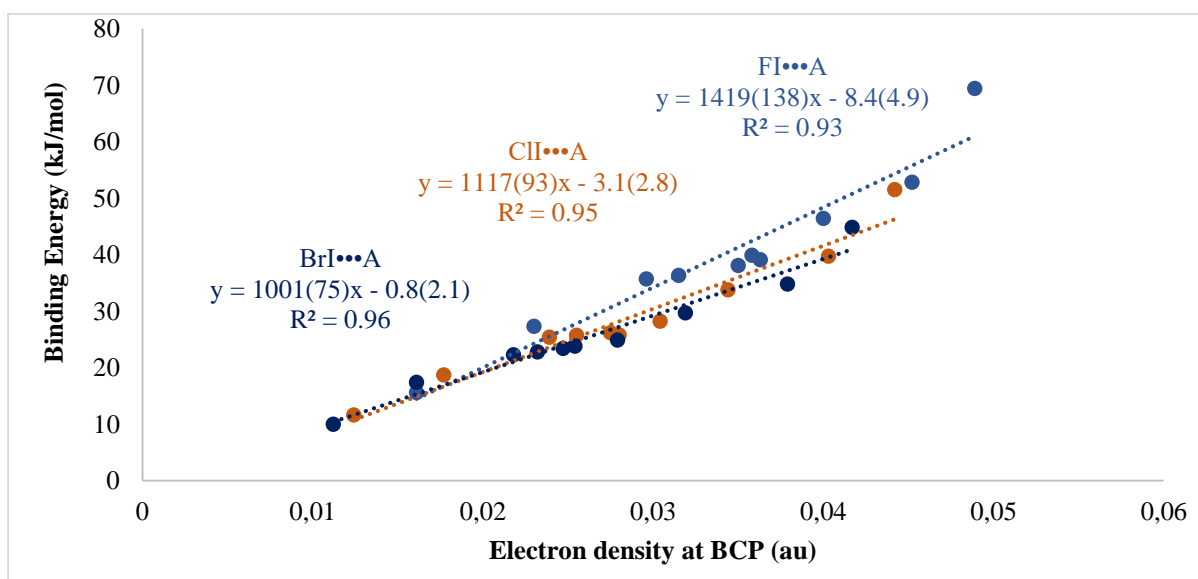
Complexes	Electron Density (au)	Binding Energy(kJ/mol)
FBr•••OH <sub>2</sub>	0.0309	29.0
FBr•••SH <sub>2</sub>	0.0328	29.6
FBr•••NH <sub>3</sub>	0.0569	59.5
FBr•••NCH	0.0310	28.9
FBr•••OCH <sub>2</sub>	0.0370	31.9
FBr•••C <sub>2</sub> H <sub>4</sub>	0.0373	32.6
FBr•••OHCH <sub>3</sub>	0.0418	37.8
FBr•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0495	44.3
FBr•••FH	0.0159	12.5
FBr•••CO	0.0306	17.0
ClBr•••OH <sub>2</sub>	0.0216	18.4
ClBr•••SH <sub>2</sub>	0.0223	18.1
ClBr•••NH <sub>3</sub>	0.0442	36.3
ClBr•••NCH	0.0210	18.5
ClBr•••OCH <sub>2</sub>	0.0264	20.5
ClBr•••C <sub>2</sub> H <sub>4</sub>	0.0246	19.5
ClBr•••OHCH <sub>3</sub>	0.0301	24.1
ClBr•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0377	28.7
ClBr•••FH	0.0118	8.4
ClBr•••CO	0.0152	9.2
BrBr•••OH <sub>2</sub>	0.0193	15.1
BrBr•••SH <sub>2</sub>	0.0195	15.0
BrBr•••NH <sub>3</sub>	0.0394	29.1
BrBr•••NCH	0.0191	15.2
BrBr•••OCH <sub>2</sub>	0.0236	17.1
BrBr•••C <sub>2</sub> H <sub>4</sub>	0.0217	16.2
BrBr•••OHCH <sub>3</sub>	0.0269	19.9
BrBr•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0342	24.0
BrBr•••FH	0.0106	6.9
BrBr•••CO	0.0131	7.4



**Figure D29.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for Br-bonded complexes.

**Table D30.** Electron density at BCP (au) and binding energy (kJ/mol) data for I-bonded complexes.

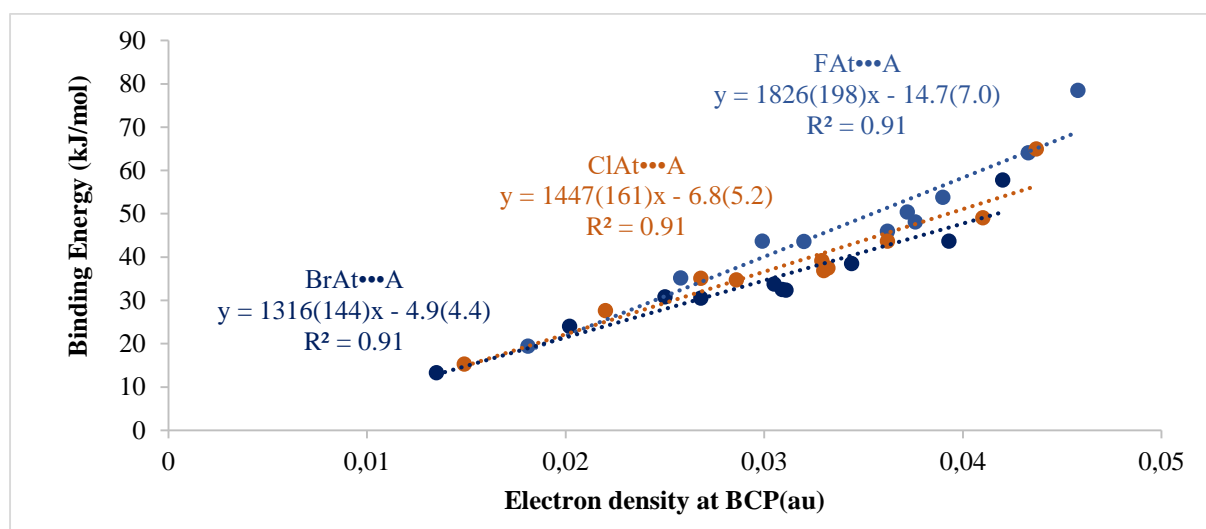
Complexes	Electron Density (au)	Binding Energy (kJ/mol)
FI•••OH <sub>2</sub>	0.0315	36.3
FI•••SH <sub>2</sub>	0.0296	35.7
FI•••NH <sub>3</sub>	0.0489	69.4
FI•••NCH	0.0350	38.1
FI•••OCH <sub>2</sub>	0.0363	39.1
FI•••C <sub>2</sub> H <sub>4</sub>	0.0358	39.9
FI•••OHCH <sub>3</sub>	0.0400	46.4
FI•••C <sub>2</sub> H <sub>2</sub>	0.0230	27.3
FI•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0452	52.8
FI•••FH	0.0161	15.6
ClI•••OH <sub>2</sub>	0.0255	25.7
ClI•••SH <sub>2</sub>	0.0239	25.4
ClI•••NH <sub>3</sub>	0.0442	51.5
ClI•••NCH	0.0275	26.2
ClI•••OCH <sub>2</sub>	0.0304	28.2
ClI•••C <sub>2</sub> H <sub>4</sub>	0.0280	25.8
ClI•••OHCH <sub>3</sub>	0.0344	33.8
ClI•••FH	0.0124	11.6
ClI•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0403	39.7
ClI•••C <sub>2</sub> H <sub>2</sub>	0.0177	18.7
BrI•••OH <sub>2</sub>	0.0232	22.8
BrI•••SH <sub>2</sub>	0.0218	22.3
BrI•••NH <sub>3</sub>	0.0417	44.8
BrI•••NCH	0.0247	23.4
BrI•••OCH <sub>2</sub>	0.0279	24.9
BrI•••C <sub>2</sub> H <sub>4</sub>	0.0254	23.8
BrI•••OHCH <sub>3</sub>	0.0319	29.7
BrI•••FH	0.0112	10.0
BrI•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0379	34.8
BrI•••C <sub>2</sub> H <sub>2</sub>	0.0161	17.4



**Figure D30.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for I-bonded complexes.

**Table D31.** Electron density at BCP (au) and binding energy (kJ/mol) data for At-bonded complexes.

Complexes	Electron Density (au)	Binding Energy (kJ/mol)
FAt•••OH <sub>2</sub>	0.0320	43.6
FAt•••SH <sub>2</sub>	0.0299	43.7
FAt•••NH <sub>3</sub>	0.0458	78.5
FAt•••NCH	0.0376	48.1
FAt•••OCH <sub>2</sub>	0.0362	46.0
FAt•••C <sub>2</sub> H <sub>4</sub>	0.0372	50.4
FAt•••OHCH <sub>3</sub>	0.0390	53.8
FAt•••C <sub>2</sub> H <sub>2</sub>	0.0258	35.2
FAt•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0433	64.1
FAt•••FH	0.0181	19.4
ClAt•••OH <sub>2</sub>	0.0286	34.7
ClAt•••SH <sub>2</sub>	0.0268	35.1
ClAt•••NH <sub>3</sub>	0.0437	65.0
ClAt•••NCH	0.0332	37.5
ClAt•••OCH <sub>2</sub>	0.0330	36.9
ClAt•••C <sub>2</sub> H <sub>4</sub>	0.0329	39.2
ClAt•••OHCH <sub>3</sub>	0.0362	43.7
ClAt•••C <sub>2</sub> H <sub>2</sub>	0.0220	27.6
ClAt•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0410	49.1
ClAt•••FH	0.0149	15.3
BrAt•••OH <sub>2</sub>	0.0268	30.5
BrAt•••SH <sub>2</sub>	0.0250	30.8
BrAt•••NH <sub>3</sub>	0.0420	57.8
BrAt•••NCH	0.0309	32.5
BrAt•••OCH <sub>2</sub>	0.0311	32.4
BrAt•••C <sub>2</sub> H <sub>4</sub>	0.0305	33.8
BrAt•••OHCH <sub>3</sub>	0.0344	38.5
BrAt•••C <sub>2</sub> H <sub>2</sub>	0.0202	24.0
BrAt•••O(CH <sub>3</sub> ) <sub>2</sub>	0.0393	43.7
BrAt•••FH	0.0135	13.3



**Figure D31.** Binding energy (kJ/mol) versus electron density at BCP (au) plot for At-bonded complexes.

## Optimised Geometries

### 1. Hydrogen Bonded Complexes:

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<b>FH...OH<sub>2</sub></b>			
O	1.24121100	-0.00019300	-0.09632800
H	1.63862400	-0.76392500	0.34342900
H	1.63405100	0.76681700	0.34186100
H	-0.47360300	-0.00130900	-0.04695900
F	-1.41430700	-0.00000500	0.01469900

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<b>FH...SH<sub>2</sub></b>			
H	1.23739700	-0.97665300	0.81875300
H	1.23862400	0.97622500	0.81911000
H	-1.17997800	-0.00015900	-0.05574000
F	-2.11419300	0.00005200	0.01172700
S	1.10823100	0.00000800	-0.10547900

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<b>FH...NH<sub>3</sub></b>			
H	0.47023900	-0.00045000	0.00088000
F	1.43031000	-0.00000800	0.00008300
N	-1.21945100	-0.00006700	0.00025400
H	-1.60395600	-0.92126200	0.20904100
H	-1.59878900	0.27910300	-0.90432200
H	-1.60412100	0.64315300	0.69187400

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<b>FH...NCH</b>			
H	0.00254500	0.05423300	-1.11594700
N	-0.00161500	-0.03549100	0.73336500
C	-0.00422800	-0.09356300	1.91038400
H	-0.00659400	-0.14630500	2.98700900
F	0.00452400	0.10021000	-2.05188000

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<b>FH...CO</b>			
H	1.23864200	0.00315500	0.00082000
C	-0.82821300	0.00836900	-0.00006300
O	-1.97528200	-0.00462900	0.00001100
F	2.17032100	-0.00181600	-0.00005900

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<b>FH...OCH<sub>2</sub></b>			
H	-0.96079200	-0.27682500	0.00005900
C	1.36398800	0.40869700	0.00001200

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O	0.72105200	-0.63931100	-0.00000500
H	2.47035800	0.39291000	-0.00003200
H	0.85782400	1.39399800	-0.00001300
F	-1.81330400	0.12802500	-0.00000500

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**FH...C<sub>2</sub>H<sub>4</sub>**

---

H	-0.99544500	0.00018100	0.00025700
C	1.14662300	-0.67632200	-0.00003200
H	1.15193900	-1.24386200	0.93433200
C	1.14676300	0.67626600	-0.00003200
H	1.15122100	1.24368900	-0.93447600
H	1.15222000	1.24381000	0.93432800
H	1.15097800	-1.24375200	-0.93447100
F	-1.93013700	0.00003000	0.00004600

---

**FH...CH<sub>3</sub>OH**

---

O	0.53553500	0.67264500	-0.11493400
H	0.76213800	1.31354500	0.57265400
H	-1.05031800	0.18093200	-0.04631300
C	1.40674400	-0.47453900	0.02148200
H	1.28284000	-0.95608500	1.00330400
H	1.10832700	-1.17552800	-0.76669200
H	2.45668200	-0.18297800	-0.12754200
F	-1.92049000	-0.19042300	0.01724100

---

**FH...PH<sub>3</sub>**

---

H	-1.29504900	-0.00225300	-0.00352800
F	-2.23157600	0.00000600	0.00003700
H	1.79002100	-0.15123400	1.21299600
H	1.79686600	1.12727200	-0.46349900
H	1.81250800	-0.96388500	-0.73236800
P	1.06532200	-0.00066300	-0.00092900

---

**FH...O(CH<sub>3</sub>)<sub>2</sub>**

---

O	-0.35714700	-0.00116900	-0.43809000
C	-0.95728900	-1.17956000	0.12112900
H	-0.46030200	-2.04087500	-0.34227200
H	-0.81259100	-1.20803400	1.21514200
H	-2.03557500	-1.20076300	-0.10939200
C	-0.93367800	1.18967000	0.12004600
H	-0.79929700	1.21085500	1.21553200
H	-0.41086700	2.04006500	-0.33480200
H	-2.00870300	1.23801300	-0.12132900
H	1.24493900	-0.01067000	-0.16918700
F	2.16504100	-0.00887800	0.07821900

---

---

**HOH...OH<sub>2</sub>**

---

O	-1.39008500	-0.00005900	-0.11242400
H	-1.74768600	0.76286600	0.36129800
H	-1.74768000	-0.76250500	0.36207200
O	1.51701100	0.00006900	0.12285200
H	1.91977200	-0.00045100	-0.75390400
H	0.56019000	0.00001000	-0.05289200

---

---

**HOH...SH<sub>2</sub>**

---

H	-1.14389400	0.91010700	-0.89712800
H	-1.18459900	0.73613900	1.04575200
O	2.24538800	0.11265800	0.00600200
H	2.72329200	-0.72538700	-0.03314600
H	1.31061400	-0.14766800	-0.00234400
S	-1.22928200	-0.10465400	-0.01007200

---

---

**HOH...NH<sub>3</sub>**

---

O	1.55390500	-0.10683000	0.00051000
H	1.93931700	0.77753900	-0.00258900
H	0.58735400	0.04786000	-0.00767000
N	-1.38082300	0.02216900	-0.00093800
H	-1.73155800	-0.30739600	-0.90028900
H	-1.91168500	0.86295000	0.22561000
H	-1.64890300	-0.68149300	0.68742200

---

---

**HOH...NCH**

---

O	-2.19711500	-0.13708400	0.00007500
H	-2.56290100	0.75586400	0.00101100
H	-1.23722100	0.00434400	-0.00052300
N	0.86593900	0.11539500	-0.00052700
C	2.03540300	-0.04621700	0.00027700
H	3.10305400	-0.19400000	0.00094100

---

---

**HOH...CO**

---

O	2.35272200	-0.10935800	0.00429800
H	2.70047600	0.79119000	0.00609000
H	1.39222500	0.00969400	-0.01421500
C	-0.98056500	0.00954000	-0.01937000
O	-2.12888600	0.00209300	0.01124500

---

---

**HOH...OCH<sub>2</sub>**

---

O	1.80164500	0.17766000	0.00008900
H	2.58164700	-0.38989600	-0.00029300
H	1.04836800	-0.43806000	-0.00010300
C	-1.28893200	0.48083100	0.00007900

---

O	-0.92352300	-0.69161100	-0.00004000
H	-2.36638300	0.74292200	0.00020600
H	-0.55501400	1.31165200	-0.00067800

---

**HOH...C<sub>2</sub>H<sub>4</sub>**

---

O	2.06498700	-0.00014100	0.08760600
H	2.51976000	0.00209400	-0.76420800
H	1.12415700	0.00026400	-0.14578500
C	-1.25995200	0.67555500	0.01302500
H	-1.01071600	1.24326500	0.91343900
C	-1.25940800	-0.67570800	0.01280700
H	-1.51310300	-1.24346200	-0.88636300
H	-1.00969800	-1.24351300	0.91302200
H	-1.51413700	1.24339800	-0.88594900

---

**HOH...OHCH<sub>3</sub>**

---

O	0.73276000	0.74930100	-0.10287600
H	0.95243400	1.23816800	0.70174500
O	-1.93776100	-0.21317800	0.07964100
H	-2.60825300	0.26341200	-0.42430000
H	-1.11228300	0.27950800	-0.08292800
C	1.33097000	-0.56137700	-0.00203600
H	0.91553700	-1.12763000	0.84624500
H	1.08096500	-1.08235200	-0.93394900
H	2.42579100	-0.49182800	0.09128800

---

**HOH...PH<sub>3</sub>**

---

O	2.40761200	0.10926200	0.00010400
H	2.82283400	-0.76245300	-0.00064300
H	1.45704800	-0.08333000	-0.00060300
H	-2.01196100	-0.41408200	1.09075600
H	-2.04171200	-0.56812900	-0.99807700
H	-1.72119000	1.29301000	-0.08976000
P	-1.18439400	-0.02260800	-0.00016700

---

**HOH...O(CH<sub>3</sub>)<sub>2</sub>**

---

O	-0.52797600	0.00002000	-0.54983800
C	-0.93552500	-1.17746400	0.15712600
H	-0.59312000	-2.03929700	-0.42982800
H	-0.47618400	-1.20837400	1.16114100
H	-2.03502900	-1.20870500	0.25497200
C	-0.93605700	1.17726800	0.15720800
H	-0.47754800	1.20781200	1.16161600
H	-0.59309800	2.03929800	-0.42913500
H	-2.03563800	1.20852200	0.25413800
O	2.18714500	0.00005700	0.17079400

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H	1.32538200	0.00017200	-0.28827500
H	2.84137600	0.00113000	-0.53827400

---

---

**HSH•••OH<sub>2</sub>**

---

H	-2.70704500	-0.23318600	0.76137500
H	-2.70318800	-0.23337300	-0.76356600
H	1.52304500	1.24962700	-0.00058800
H	-0.00683900	0.02860800	0.00108100
S	1.34186300	-0.08739400	0.00002900
O	-2.19697300	0.07332900	0.00015400

---

---

**HSH•••NH<sub>3</sub>**

---

H	-1.53159000	1.25487200	-0.00022400
H	0.00542300	0.02901100	-0.00385000
N	2.19760500	0.01090200	-0.00050600
H	2.55772400	-0.35483300	0.88129800
H	2.64938700	0.91479400	-0.14111700
H	2.55421900	-0.60338200	-0.73299100
S	-1.35115000	-0.08229900	0.00002600

---

---

**HSH•••NCH**

---

H	-2.13248100	1.24595800	0.00202700
H	-0.59624100	0.03609900	-0.00179300
N	1.74884000	0.05704000	-0.00297200
C	2.92787800	-0.02403700	0.00157300
H	4.00320600	-0.09816900	0.00565500
S	-1.94272700	-0.08993400	0.00034200

---

---

**HSH•••CO**

---

H	-2.28248400	1.24397400	-0.00950200
H	-0.72495900	0.06816600	0.02072800
C	1.92028000	0.04587700	0.01969700
O	3.06731900	-0.02238100	-0.01219900
S	-2.06580000	-0.08802200	-0.00198900

---

---

**HSH•••OCH<sub>2</sub>**

---

H	-1.95603000	-0.16797200	1.22523800
H	-0.50894500	-0.57928800	-0.02793000
C	1.98815500	0.51034000	0.02364500
O	1.69013600	-0.67873200	-0.01749700
H	3.04814700	0.83892200	0.02430400
H	1.20837700	1.29998400	0.06172400
S	-1.70259800	0.06101100	-0.08032700

---

---

**HSH•••C<sub>2</sub>H<sub>4</sub>**

---

H	2.13993500	0.00018400	1.24244800
H	0.54604700	0.00031900	0.11087100
C	-2.05141300	-0.67548700	-0.00185400
H	-1.97604400	-1.24418600	-0.93246300
C	-2.05219900	0.67526000	-0.00185300
H	-2.13137100	1.24363200	0.92868600
H	-1.97749900	1.24403900	-0.93246600
H	-2.12991900	-1.24394400	0.92868900
S	1.88440800	0.00008200	-0.08272000

---

**HSH•••OHCH<sub>3</sub>**

---

O	-1.47336800	0.72708300	0.03893300
H	-2.08559500	1.31264900	-0.42552500
H	2.13418600	0.34596300	1.16788400
H	0.61416300	0.45176000	-0.06283900
C	-2.02405500	-0.60321300	0.02670600
H	-2.17222800	-0.97212600	-1.00120800
H	-1.28855100	-1.24281900	0.53068800
H	-2.97799600	-0.64925300	0.57610700
S	1.85670600	-0.09022300	-0.07855000

---

**HSH•••PH<sub>3</sub>**

---

H	2.38031000	1.25616000	0.00092100
H	0.85929300	0.03121000	0.03142100
H	-2.66161100	-1.14967100	-0.51070600
H	-2.79781600	0.92006500	-0.76366800
H	-2.85308300	0.09618800	1.15666400
S	2.20679800	-0.08221200	-0.00078400
P	-2.01572400	0.01076300	0.00652700

---

**HSH•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	-1.19776600	-0.01818700	-0.57738000
C	-1.55648800	-1.15529100	0.21164700
H	-1.33930000	-2.04671300	-0.39105400
H	-0.96497400	-1.18892800	1.14503900
H	-2.63193800	-1.13291900	0.46401000
C	-1.45187400	1.19178100	0.13907200
H	-0.86897300	1.22406800	1.07890600
H	-1.14607100	2.02195800	-0.51081600
H	-2.52565300	1.28653800	0.38120400
H	0.84483500	-0.03317000	-0.40803200
H	2.62317900	-0.69896700	-0.90447200
S	2.10257500	0.03091800	0.10374700

## 2. Lithium Bonded Complexes

<b>FLi•••OH<sub>2</sub></b>				
F	-1.91189700	0.00381200	0.00027100	
O	1.68767500	0.00074800	-0.00005900	
H	2.25556300	0.78154800	0.00104800	
H	2.28960000	-0.75398100	0.00132600	
Li	-0.27982900	-0.02262000	-0.00144800	

<b>FLi•••NCCH<sub>3</sub></b>				
C	1.39718500	0.00140500	-0.00000800	
N	0.21790000	0.00249600	-0.00002500	
F	-3.47457400	-0.00043400	0.00001300	
C	2.86477700	-0.00140200	0.00001500	
H	3.22954900	-0.53738600	0.88708300	
H	3.22965300	-0.50283200	-0.90699100	
H	3.23294100	1.03361100	0.01997100	
Li	-1.83935100	-0.00232500	-0.00001400	

<b>FLi•••NH<sub>3</sub></b>				
F	-1.97385800	-0.00001100	-0.00000400	
N	1.75809300	-0.00000200	-0.00000200	
H	2.15780900	0.44587500	0.82739000	
H	2.15779100	0.49356700	-0.79986900	
H	2.15770600	-0.93952800	-0.02754200	
Li	-0.33841300	0.00006700	0.00002400	

<b>FLi•••NCH</b>				
C	0.00000000	0.00000000	-2.34597500	
H	0.00000000	0.00000000	-3.42485900	
N	0.00000000	0.00000000	-1.16973300	
F	0.00000000	0.00000000	2.54856800	
Li	0.00000000	0.00000000	0.91724500	

<b>FLi•••OCH<sub>2</sub></b>				
F	1.74009300	0.25542900	0.00007000	
O	-1.11885000	-0.62251900	0.00001300	
C	-1.14158200	0.61532200	-0.00004800	
H	-0.19204800	1.18351200	-0.00014000	
H	-2.11610200	1.13923000	-0.00000200	
Li	0.81586800	-1.11112900	-0.00010000	

<b>FLi•••C<sub>2</sub>H<sub>4</sub></b>				
C	-1.56623000	0.67716500	0.00009400	

---

H	-1.58275700	1.24482200	-0.93490600
H	-1.58316600	1.24482000	0.93508900
C	-1.56623000	-0.67716400	0.00009500
H	-1.58316700	-1.24481900	0.93508900
H	-1.58275800	-1.24482200	-0.93490600
F	2.49921600	0.00000000	-0.00030100
Li	0.87788800	0.00000000	0.00040400

---

---

**FLi•••OHCH<sub>3</sub>**

---

F	1.93578900	-0.24696700	-0.00007200
O	-0.97047700	0.70570000	-0.00014300
H	-1.82813900	1.14534400	-0.00000800
C	-1.16821800	-0.74150800	0.00007100
H	-0.15760100	-1.17010100	-0.00039100
H	-1.71699700	-1.04541300	0.90283900
H	-1.71781400	-1.04552000	-0.90215900
Li	0.92385800	1.04728000	0.00035900

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---

**FLi•••PH<sub>3</sub>**

---

F	-2.81571900	-0.00000400	-0.00003800
H	2.20228200	1.06057800	-0.61442200
H	2.20225400	-1.06284200	-0.61052900
H	2.20074700	0.00223900	1.22643300
Li	-1.19145800	0.00002200	0.00008200
P	1.48737100	0.00000000	-0.00009200

---

---

**FLi•••CO**

---

F	0.00000000	0.00000000	2.66287700
Li	0.00000000	0.00000000	1.04266600
C	0.00000000	0.00000000	-1.28112800
O	0.00000000	0.00000000	-2.42589000

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---

**FLi•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	0.76766100	-0.00015200	0.57877700
C	0.92845800	-1.18188700	-0.23881000
H	0.83667300	-2.04889000	0.42893300
H	0.14497900	-1.21322100	-1.01342100
H	1.92994700	-1.18022100	-0.69890300
C	0.93090900	1.18081100	-0.23939100
H	0.14741100	1.21353300	-1.01393700
H	0.84127000	2.04838400	0.42793000
H	1.93227800	1.17672600	-0.69973900
F	-2.18527900	0.00057400	-0.25045300
Li	-1.15417600	0.00206500	1.02073600

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---

**CLi•••OH<sub>2</sub>**

---

O	-2.44887300	0.00002000	-0.00031100
H	-3.03315200	0.76885200	0.00165000
H	-3.03377200	-0.76833800	0.00165200
Li	-0.50346500	-0.00040200	-0.00083100
Cl	1.59813500	0.00003200	0.00009900

---

---

**CLi•••NCCH<sub>3</sub>**

---

C	1.95024300	-0.43780900	1.00190800
N	0.92158200	-0.20686600	0.47442600
C	3.23046200	-0.72522800	1.65864000
H	3.58854500	-1.71501400	1.34340400
H	3.96655400	0.03936700	1.37432400
H	3.09223600	-0.71465500	2.74862000
Li	-0.84804700	0.19040000	-0.43762000
Cl	-2.68461800	0.60267000	-1.37869200

---

---

**CLi•••NH<sub>3</sub>**

---

N	2.53733600	-0.00000200	0.00005500
H	2.93807000	0.82289400	-0.45383200
H	2.93805400	-0.80465100	-0.48545800
H	2.93760600	-0.01826700	0.93984800
Li	0.46166500	0.00002300	-0.00059400
Cl	-1.64471000	-0.00000200	0.00004900

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---

**CLi•••NCH**

---

C	0.00000000	0.00000000	-3.16278800
H	0.00000000	0.00000000	-4.24186400
N	0.00000000	0.00000000	-1.98706500
Li	0.00000000	0.00000000	0.07099500
Cl	0.00000000	0.00000000	2.17147400

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---

**CLi•••OCH<sub>2</sub>**

---

O	-1.74999800	0.57583600	-0.00002300
C	-1.76937000	-0.66036700	0.00033400
H	-0.82588200	-1.23674700	0.00021800
H	-2.73965700	-1.19033400	-0.00009800
Li	0.07691700	1.31063500	0.00005300
Cl	1.64417600	-0.12643000	-0.00012400

---

---

**CLi•••C<sub>2</sub>H<sub>4</sub>**

---

C	-0.00053400	-2.31935300	-0.67749400
H	0.93465600	-2.33653300	-1.24512800
H	-0.93572000	-2.33675800	-1.24512600
C	-0.00053400	-2.31935300	0.67749400

---



---

H	-0.93572000	-2.33675800	1.24512600
H	0.93465600	-2.33653300	1.24512800
Li	-0.00053400	0.08154300	0.00000000
Cl	0.00059600	2.17260000	0.00000000

---

---

**CLi•••OHCH<sub>3</sub>**

---

O	-1.63959400	0.67092100	0.00018600
H	-2.50841500	1.08916700	0.00029300
C	-1.80566000	-0.77992600	0.00017200
H	-0.79020700	-1.19461800	0.00006100
H	-2.34516500	-1.09593800	0.90373400
H	-2.34534500	-1.09589800	-0.90329500
Li	0.19212300	1.20424100	-0.00000800
Cl	1.84491000	-0.11783800	-0.00019400

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---

**CLi•••PH<sub>3</sub>**

---

H	2.98027900	0.61661200	1.06205800
H	2.98024700	0.60972800	-1.06604700
H	2.97730900	-1.22983200	0.00396700
Li	-0.36540700	0.00292500	0.00001700
P	2.27083400	-0.00004300	0.00000000
Cl	-2.46494800	-0.00027300	-0.00000200

---

---

**CLi•••CO**

---

Li	0.00000000	0.00000000	-0.16529300
C	0.00000000	0.00000000	2.12187300
O	0.00000000	0.00000000	3.26621400
Cl	0.00000000	0.00000000	-2.25676900

---

---

**CLi•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	-1.31507900	0.00005600	0.55174600
C	-1.47255200	1.18368300	-0.26541800
H	-1.37378900	2.05107700	0.40044600
H	-0.69109500	1.21227500	-1.04183200
H	-2.47498100	1.18408500	-0.72258300
C	-1.47379000	-1.18321400	-0.26571600
H	-0.69225300	-1.21245700	-1.04203000
H	-1.37597800	-2.05087100	0.39995500
H	-2.47617600	-1.18239100	-0.72294300
Li	0.49972700	-0.00072500	1.23985300
Cl	2.10492800	-0.00016500	-0.13045500

---

---

**BrLi•••OH<sub>2</sub>**

---

O	-3.15553200	0.00003200	-0.00023600
---	-------------	------------	-------------

---

---

H	-3.73944900	0.76912300	0.00143700
H	-3.74011100	-0.76855300	0.00143900
Li	-1.21576200	-0.00048800	-0.00082300
Br	1.03917400	0.00001800	0.00004200

---

---

**BrLi•••NCCH<sub>3</sub>**

---

C	0.02230500	0.07681100	3.24288000
N	0.01422300	0.04929400	2.06441000
C	0.03236900	0.11131400	4.70955100
H	-0.86333900	-0.39673200	5.09280000
H	0.93164100	-0.39952400	5.08054800
H	0.03631700	1.15597400	5.05007300
Li	0.00028000	-0.00060400	0.04302100
Br	-0.01523000	-0.05233500	-2.21479800

---

---

**BrLi•••NH<sub>3</sub>**

---

N	-0.00077100	-0.03785400	3.26022500
H	-0.46446100	-0.86007200	3.65115500
H	-0.47718600	0.76772200	3.67004300
H	0.93898100	-0.03516000	3.66114600
Li	-0.00008400	-0.01384200	1.19170000
Br	0.00023800	0.01240000	-1.06797200

---

---

**BrLi•••NCH**

---

C	0.00000000	0.00000000	-4.01277200
H	0.00000000	0.00000000	-5.09181900
N	0.00000000	0.00000000	-2.83708800
Li	0.00000000	0.00000000	-0.78513600
Br	0.00000000	0.00000000	1.46809900

---

---

**BrLi•••OCH<sub>2</sub>**

---

O	-2.41044600	0.55818900	0.00003400
C	-2.40397900	-0.67807700	0.00002400
H	-1.44881300	-1.23519500	-0.00023500
H	-3.36252400	-1.22857800	-0.00007400
Li	-0.62457200	1.37229700	-0.00010300
Br	1.15407100	-0.05857600	0.00000600

---

---

**BrLi•••C<sub>2</sub>H<sub>4</sub>**

---

C	0.00003100	-3.13641000	-0.67757600
H	0.93534900	-3.15381800	-1.24505500
H	-0.93527700	-3.15447000	-1.24505200
C	0.00003100	-3.13641000	0.67757600
H	-0.93527700	-3.15447000	1.24505200
H	0.93534900	-3.15381800	1.24505500

---

Li	-0.00052700	-0.74464300	0.00000000
Br	0.00003100	1.49964100	0.00000000

---

**BrLi•••OHCH<sub>3</sub>**

---

O	-2.34297500	0.65885200	0.00025900
H	-3.22206500	1.05536200	0.00039400
C	-2.47380200	-0.79589000	0.00026000
H	-1.44878200	-1.18637700	0.00015300
H	-3.00506400	-1.12459000	0.90407200
H	-3.00524700	-1.12457300	-0.90345100
Li	-0.53874500	1.26363400	0.00005800
Br	1.31097200	-0.05446300	-0.00014200

---

**BrLi•••PH<sub>3</sub>**

---

H	-3.86088900	-0.61430600	1.06435800
H	-3.86086200	-0.61381500	-1.06465900
H	-3.85938300	1.22973100	0.00027400
Li	-0.52728500	-0.00075800	0.00002100
P	-3.15318600	-0.00002800	0.00000000
Br	1.72745100	0.00003100	-0.00000100

---

**BrLi•••CO**

---

Li	0.00000000	0.00000000	0.72017500
C	0.00000000	0.00000000	2.99777300
O	0.00000000	0.00000000	4.14190900
Br	0.00000000	0.00000000	-1.52235500

---

**BrLi•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	-1.99048100	0.00004200	0.54408500
C	-2.12715200	1.18352900	-0.27770800
H	-2.04091100	2.05163100	0.38894700
H	-1.32797600	1.20907700	-1.03595400
H	-3.11909400	1.18501200	-0.75706500
C	-2.12698500	-1.18382700	-0.27713500
H	-1.32749700	-1.20978200	-1.03504300
H	-2.04087200	-2.05160500	0.38997000
H	-3.11875500	-1.18555000	-0.75681100
Li	-0.21901800	0.00142400	1.32084200
Br	1.57373800	-0.00004600	-0.06229100

### 3. Sodium Bonded Complexes

---

**FNa•••OH<sub>2</sub>**

---

F	-2.26970800	0.00007400	0.00037000
O	2.20513200	0.00003200	0.00007000
H	2.79699600	0.76707400	0.00087300
H	2.79730700	-0.76676700	0.00087500
Na	-0.25527100	-0.00011200	-0.00051300

---

---

**FNa•••NCCH<sub>3</sub>**

---

C	-2.01588200	0.00269400	0.00000600
N	-0.83466500	0.00789100	0.00002800
F	3.63047400	0.00570100	-0.00001600
C	-3.48452900	-0.00165900	-0.00001800
H	-3.85020900	-0.53705200	-0.88710600
H	-3.85033100	-0.50372600	0.90630000
H	-3.85459400	1.03274600	-0.01926600
Na	1.61145300	-0.00952000	0.00000800

---

---

**FNa•••NH<sub>3</sub>**

---

F	2.28801200	-0.00034400	-0.00009300
N	-2.23544000	-0.00018100	-0.00005800
H	-2.63752800	-0.45894400	0.81909600
H	-2.63739000	-0.48065100	-0.80674000
H	-2.63835900	0.93824500	-0.01262200
Na	0.26993100	0.00052000	0.00013700

---

---

**FNa•••NCH**

---

C	0.00000000	0.00000000	-2.89596600
H	0.00000000	0.00000000	-3.97501400
N	0.00000000	0.00000000	-1.71785000
F	0.00000000	0.00000000	2.77652800
Na	0.00000000	0.00000000	0.76245600

---

---

**FNa•••OCH<sub>2</sub>**

---

F	1.34469500	1.05767300	-0.00009100
O	-1.38877400	-0.61738200	0.00033800
C	-1.49574100	0.61935200	0.00015500
H	-0.58116600	1.25166200	0.00048600
H	-2.50935800	1.07015600	-0.00054100
Na	1.00662700	-0.96526600	-0.00025100

---

---

**FNa•••C<sub>2</sub>H<sub>4</sub>**

---

C	-0.00019300	-2.09059400	0.67654500
H	-0.93475300	-2.10862000	1.24479400
H	0.93436000	-2.10909400	1.24479200
C	-0.00019300	-2.09059400	-0.67654500

---

H	0.93436000	-2.10909400	-1.24479200
H	-0.93475300	-2.10862000	-1.24479400
F	-0.00019300	2.77786200	0.00000000
Na	0.00043900	0.77471000	0.00000000

---

**FNa•••OHCH<sub>3</sub>**

---

F	-1.58486400	0.98865000	-0.00010900
O	1.27658600	-0.65944700	0.00008600
H	2.14324800	-1.08342100	0.00018600
C	1.47305700	0.79290500	0.00007400
H	0.46013800	1.22636300	0.00000000
H	2.02654000	1.09554300	0.90142700
H	2.02666000	1.09551100	-0.90121600
Na	-1.04034900	-0.97397300	-0.00005000

---

**FNa•••PH<sub>3</sub>**

---

F	-3.05196700	0.00017800	0.00001300
H	2.77094200	-0.61040500	-1.05672300
H	2.77092100	-0.60922400	1.05742500
H	2.76964600	1.22110300	-0.00067200
P	2.04430500	-0.00001800	0.00000300
Na	-1.04621600	-0.00025500	-0.00001700

---

**FNa•••CO**

---

F	0.00000000	0.00000000	2.86884500
C	0.00000000	0.00000000	-1.87276500
O	0.00000000	0.00000000	-3.01865300
Na	0.00000000	0.00000000	0.86965500

---

**FNa•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	1.04039900	0.00031200	-0.58024300
C	1.17844200	1.17498400	0.25092300
H	1.09216700	2.04783000	-0.41214600
H	0.38356900	1.18263000	1.01599000
H	2.17580100	1.18324500	0.72329200
C	1.17815800	-1.17540300	0.24952100
H	0.38315700	-1.18386000	1.01444700
H	1.09188200	-2.04741800	-0.41464000
H	2.17544600	-1.18436300	0.72202500
F	-1.66690000	-0.00067100	1.05476200
Na	-1.34206500	0.00072700	-0.95477700

---

**CiNa•••OH<sub>2</sub>**

---

O	2.83374600	0.01471100	0.00049100
H	3.40228400	0.79816600	0.00115300

---

H	3.44788500	-0.73341800	0.00212500
Na	0.43303600	-0.03296300	-0.00137100
Cl	-2.01667900	0.01059800	0.00046300

---

---

**ClNa•••NCCH<sub>3</sub>**

---

C	2.73197200	-0.00022000	0.00035500
N	1.55098800	-0.00152800	0.00024100
C	4.20031500	0.00192600	-0.00024500
H	4.56711100	0.10210800	1.03064000
H	4.56800600	-0.94027500	-0.42960900
H	4.56540100	0.84552400	-0.60221000
Na	-0.87297600	-0.00306100	-0.00005200
Cl	-3.32637800	0.00157500	-0.00003500

---

---

**ClNa•••NH<sub>3</sub>**

---

N	-2.89428800	0.00000900	0.00000500
H	-3.29770200	-0.81297700	-0.46880900
H	-3.29767600	0.81255700	-0.46959000
H	-3.29766200	0.00046600	0.93850400
Na	-0.41145400	-0.00002000	-0.00002600
Cl	2.03994400	0.00000600	0.00000900

---

---

**ClNa•••NCH**

---

C	0.00000000	0.00000000	-3.58575200
H	0.00000000	0.00000000	-4.66506000
N	0.00000000	0.00000000	-2.40793500
Na	0.00000000	0.00000000	0.05051500
Cl	0.00000000	0.00000000	2.49879100

---

---

**ClNa•••OCH<sub>2</sub>**

---

O	-1.94943000	0.23455400	0.00006200
C	-1.77754000	-0.99067900	0.00005700
H	-0.75591100	-1.41751100	-0.00003600
H	-2.65562100	-1.66609000	0.00004200
Na	0.12591700	1.43649800	-0.00001600
Cl	1.66394900	-0.50883700	-0.00004000

---

---

**ClNa•••C<sub>2</sub>H<sub>4</sub>**

---

C	-0.00025100	2.74762500	0.67681300
H	0.93442400	2.76802300	1.24503400
H	-0.93499200	2.76707600	1.24495900
C	-0.00025100	2.74762500	-0.67681300
H	-0.93499200	2.76707600	-1.24495900
H	0.93442400	2.76802300	-1.24503400
Na	0.00076600	-0.09278300	0.00000000

---

---

Cl	-0.00025100	-2.53065200	0.00000000
----	-------------	-------------	------------

---

---

**ClNa•••OHCH<sub>3</sub>**

---

O	-1.89116600	0.38269500	0.00018400
H	-2.82744700	0.61756100	0.00027800
C	-1.78667900	-1.07523900	0.00015300
H	-0.71236200	-1.30239900	0.00005500
H	-2.26003900	-1.48840500	0.90253400
H	-2.26019700	-1.48837700	-0.90215800
Na	0.21591000	1.37143900	-0.00001400
Cl	1.85496700	-0.47260800	-0.00017300

---

---

**ClNa•••PH<sub>3</sub>**

---

H	-3.44496000	-1.07115700	-0.58853400
H	-3.44493200	1.04574800	-0.63262800
H	-3.44388900	0.02548200	1.22270600
Na	0.34479200	-0.00003500	-0.00060100
P	-2.72234800	0.00000600	0.00009400
Cl	2.78684000	0.00001200	0.00021500

---

---

**ClNa•••CO**

---

Na	0.00000000	0.00000000	0.13993700
C	0.00000000	0.00000000	-2.58210100
O	0.00000000	0.00000000	-3.72778500
Cl	0.00000000	0.00000000	2.57503400

---

---

**ClNa•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	-1.52975300	-0.38030700	-0.00005600
C	-1.54808700	0.45612900	1.17754100
H	-1.56679500	-0.21341200	2.04879000
H	-0.64796600	1.09246900	1.20404300
H	-2.46013500	1.07657800	1.18047000
C	-1.54799900	0.45637600	-1.17748300
H	-0.64786500	1.09270500	-1.20379400
H	-1.56666300	-0.21298500	-2.04887000
H	-2.46003900	1.07683700	-1.18033900
Na	0.58912800	-1.46512300	-0.00011400
Cl	1.98138800	0.57480000	0.00006200

---

---

**BrNa•••OH<sub>2</sub>**

---

O	3.56434900	0.01484200	0.00057100
H	4.13383400	0.79714700	0.00126800
H	4.17796200	-0.73324200	0.00223500
Na	1.17722300	-0.03199300	-0.00148100
Br	-1.42217300	0.00483700	0.00023500

---

---

**BrNa•••NCCH<sub>3</sub>**

---

C	3.68520900	0.00013000	-0.00003000
N	2.50428000	-0.00188700	-0.00008700
C	5.15347300	0.00222000	0.00002900
H	5.51978600	0.04548500	1.03503900
H	5.52125500	-0.91494100	-0.48045000
H	5.51862600	0.87772100	-0.55445900
Na	0.08842200	-0.00365300	0.00006500
Br	-2.51698200	0.00088700	-0.00000700

---

---

**BrNa•••NH<sub>3</sub>**

---

N	-3.63818000	-0.00001000	0.00005600
H	-4.04167000	0.81231800	0.47003100
H	-4.04164300	-0.81311900	0.46870400
H	-4.04198000	0.00074900	-0.93829600
Na	-1.16343600	0.00002200	-0.00014300
Br	1.43972400	-0.00000300	0.00002100

---

---

**BrNa•••NCH**

---

C	0.00000000	0.00000000	-4.41749300
H	0.00000000	0.00000000	-5.49684000
N	0.00000000	0.00000000	-3.23974800
Na	0.00000000	0.00000000	-0.78928200
Br	0.00000000	0.00000000	1.81034700

---

---

**BrNa•••OCH<sub>2</sub>**

---

O	-2.53790700	0.07049300	0.00006300
C	-2.22610800	-1.12640400	-0.00005300
H	-1.16222400	-1.43279800	0.00025300
H	-3.01962000	-1.89891200	0.00020300
Na	-0.66048700	1.55257200	0.00019500
Br	1.28877400	-0.21577500	-0.00008000

---

---

**BrNa•••C<sub>2</sub>H<sub>4</sub>**

---

C	-0.02181600	3.55253100	0.67681400
H	0.91027600	3.62550500	1.24505600
H	-0.95609800	3.52018000	1.24518900
C	-0.02181600	3.55253100	-0.67681400
H	-0.95609800	3.52018000	-1.24518900
H	0.91027600	3.62550500	-1.24505600
Na	0.10154300	0.72971500	0.00000000

---



Br	-0.02181600	-1.85567500	0.00000000
----	-------------	-------------	------------

---

**BrNa•••OHCH<sub>3</sub>**

---

O	-2.53044400	0.26561300	0.00022700
H	-3.48540600	0.40621400	0.00034700
C	-2.28280900	-1.17429300	0.00020400
H	-1.19160300	-1.29560700	0.00010300
H	-2.71235700	-1.63228900	0.90278400
H	-2.71252200	-1.63228700	-0.90229900
Na	-0.55964900	1.49117600	0.00005700
Br	1.43424100	-0.20937500	-0.00013200

---

**BrNa•••PH<sub>3</sub>**

---

H	-4.30100100	-1.06255400	-0.60477300
H	-4.30097000	1.05535800	-0.61729700
H	-4.30021300	0.00724900	1.22311900
Na	-0.52560700	-0.00002700	-0.00031900
P	-3.57929500	0.00000600	0.00004000
Br	2.06780800	0.00000500	0.00005300

---

**BrNa•••CO**

---

Na	0.00000000	0.00000000	-0.72196000
C	0.00000000	0.00000000	-3.43782900
O	0.00000000	0.00000000	-4.58332700
Br	0.00000000	0.00000000	1.86386100

---

**BrNa•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	2.12702900	0.27905200	-0.00001300
C	2.05737600	-0.55454600	1.17765700
H	2.14282700	0.10909300	2.04935100
H	1.09604300	-1.09392800	1.20330600
H	2.90014500	-1.26612800	1.18147000
C	2.05733800	-0.55459500	-1.17764700
H	1.09600000	-1.09396900	-1.20324900
H	2.14277200	0.10900800	-2.04937000
H	2.90010300	-1.26618200	-1.18145300
Na	0.18968400	1.64979500	-0.00002300
Br	-1.60196900	-0.26352000	0.00000700

4. Beryllium Bonded Complexes

---

**F<sub>2</sub>Be•••OH<sub>2</sub>**

---

Be	-0.00002300	-0.31307900	-0.02679400
----	-------------	-------------	-------------

F	1.37916500	-0.76996900	0.01068500
F	-1.37927400	-0.76977800	0.01068700
O	0.00009700	1.42225000	-0.07702800
H	-0.78822500	1.86605800	0.26551700
H	0.78851800	1.86597800	0.26553600

---

**F<sub>2</sub>Be•••SH<sub>2</sub>**

---

Be	-0.84183600	0.00000000	-0.01131500
F	-1.27102800	1.38160300	0.00879800
F	-1.27103500	-1.38160000	0.00879800
S	1.43525200	-0.00000200	-0.10597700
H	1.64094100	-0.98956500	0.79126600
H	1.64094000	0.98955900	0.79126900

---

**F<sub>2</sub>Be•••NH<sub>3</sub>**

---

Be	-0.29978400	0.00008200	-0.00151700
F	-0.82317100	1.36376800	0.00032000
F	-0.82420800	-1.36319800	0.00032000
N	1.49041200	-0.00051900	-0.00269200
H	1.86613800	0.82814000	-0.46599600
H	1.86562100	-0.83042100	-0.46418500
H	1.86090300	0.00045300	0.94933000

---

**F<sub>2</sub>Be•••NCH**

---

C	2.27338300	-0.00000200	0.00001400
H	3.35189800	0.00000000	0.00012200
N	1.10167900	-0.00000400	-0.00012400
Be	-0.73452200	0.00000100	-0.00000900
F	-1.20921100	1.36870400	0.00004500
F	-1.20921800	-1.36870000	0.00003300

---

**F<sub>2</sub>Be•••OCH<sub>2</sub>**

---

O	0.82100200	-0.81900100	-0.00010100
C	1.87840400	-0.17554800	-0.00026800
H	2.83297800	-0.72462700	0.00049800
H	1.85993800	0.92606100	0.00053200
Be	-0.69952100	0.10681300	0.00004700
F	-1.86195100	-0.74690400	0.00036400
F	-0.33063400	1.52208200	-0.00023200

---

**F<sub>2</sub>Be•••C<sub>2</sub>H<sub>4</sub>**

---

C	1.45254200	-0.00036300	0.67913800
H	1.46268700	0.93806300	1.23967800
H	1.46418300	-0.93860900	1.23993700

C	1.45221500	-0.00053400	-0.67929900
H	1.46361700	-0.93892200	-1.23986900
H	1.46212800	0.93775600	-1.24007700
Be	-0.73173100	0.00011200	0.00039100
F	-1.12995000	1.38497500	-0.00005600
F	-1.13163100	-1.38423700	0.00002600

---

**F<sub>2</sub>Be•••OHCH<sub>3</sub>**

---

O	-0.69242700	-0.68411700	-0.19133500
H	-0.67241100	-1.62598100	0.02848500
C	-1.97936000	-0.06945100	0.10375000
H	-2.22921400	-0.21069100	1.16343300
H	-1.84720500	0.99401800	-0.11676100
H	-2.74538500	-0.51386200	-0.54370600
Be	0.78956600	0.14052600	-0.03152400
F	1.86529600	-0.83580200	0.07601900
F	0.55154000	1.57847500	-0.02015000

---

**F<sub>2</sub>Be•••PH<sub>3</sub>**

---

Be	-0.89333300	0.00787100	-0.00001900
F	-1.41438500	-1.34326300	0.00000200
F	-1.26885900	1.40870900	0.00000200
H	2.08427400	0.61083200	1.07253400
H	2.08440600	0.61235400	-1.07154500
H	2.14359100	-1.25905900	-0.00080800
P	1.42735000	-0.03897500	-0.00001000

---

**F<sub>2</sub>Be•••CO**

---

Be	0.84085700	0.00000200	-0.00002700
F	1.23322300	-1.38674700	-0.00003900
F	1.23319500	1.38675800	-0.00004100
C	-1.17317200	-0.00000900	0.00004200
O	-2.31527000	-0.00000800	0.00007300

---

**F<sub>2</sub>Be•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	0.64625300	0.00000000	0.00031800
C	1.43357000	-1.21265900	0.00023200
H	2.06240400	-1.23274300	0.90291800
H	0.71879100	-2.04181000	0.00034100
H	2.06221100	-1.23276800	-0.90259200
Be	-1.04210200	0.00000000	0.00103200
F	-1.54951400	1.36861500	-0.00052000
F	-1.54951700	-1.36861400	-0.00054300
C	1.43357100	1.21265800	0.00010600
H	0.71879200	2.04181000	0.00040100

---

H	2.06260100	1.23270600	0.90265700
H	2.06201500	1.23280200	-0.90285300

---

---

**Cl<sub>2</sub>Be•••OH<sub>2</sub>**

---

Be	-0.00000900	0.07478700	-0.03223300
O	0.00003500	1.77831000	-0.06900700
Cl	1.76877100	-0.55873800	0.00558900
Cl	-1.76879300	-0.55870600	0.00558900
H	-0.79413700	2.23551200	0.24550700
H	0.79428100	2.23541600	0.24545900

---

---

**Cl<sub>2</sub>Be•••SH<sub>2</sub>**

---

Be	0.00000000	-0.34201800	-0.00609200
S	0.00000100	1.88468400	-0.10542300
H	0.99376700	2.12168800	0.78124300
H	-0.99376400	2.12168900	0.78124300
Cl	-1.76387200	-0.97147700	0.00437200
Cl	1.76387100	-0.97147900	0.00437200

---

---

**Cl<sub>2</sub>Be•••NH<sub>3</sub>**

---

Be	-0.00615300	0.11419400	-0.00009900
Cl	-1.76226600	-0.57900700	-0.00002700
Cl	1.73614900	-0.61776300	0.00005100
N	0.03883900	1.87674600	-0.00003100
H	0.54655800	2.22840400	-0.81536600
H	0.54393300	2.22828900	0.81698800
H	-0.89375600	2.29440700	-0.00141700

---

---

**Cl<sub>2</sub>Be•••NCH**

---

C	-0.01537700	2.73340000	0.00005300
H	-0.02156500	3.81227600	0.00002400
N	-0.00866000	1.56182800	0.00008100
Be	0.00126600	-0.22225300	-0.00001100
Cl	1.75706400	-0.88014400	-0.00002400
Cl	-1.74710100	-0.89964800	-0.00002700

---

---

**Cl<sub>2</sub>Be•••OCH<sub>2</sub>**

---

O	0.61509500	-1.43945900	0.00013000
C	1.85195500	-1.49920600	0.00038100
H	2.32852700	-2.49134000	0.00063400
H	2.45998800	-0.57989800	0.00063100
Be	-0.25676400	0.08219300	-0.00005600
Cl	0.93819100	1.54655700	0.00009400
Cl	-2.10254100	-0.17871100	-0.00035000

---

<b>Cl<sub>2</sub>Be...C<sub>2</sub>H<sub>4</sub></b>			
C	-0.00026400	1.89921700	-0.68061600
H	0.93845800	1.91595700	-1.24084100
H	-0.93906300	1.91492900	-1.24074800
C	-0.00020700	1.89963000	0.68041000
H	-0.93895500	1.91564400	1.24061100
H	0.93855800	1.91667100	1.24054700
Be	0.00006400	-0.26209200	0.00048000
Cl	1.76315400	-0.86479700	-0.00001300
Cl	-1.76294400	-0.86508100	-0.00000200

<b>Cl<sub>2</sub>Be...OHCH<sub>3</sub></b>			
O	0.62098800	-1.23790700	-0.19599700
H	0.11285700	-2.04399300	-0.01585300
C	2.04028100	-1.38999500	0.11168300
H	2.43712200	-2.22682900	-0.47549100
H	2.50732300	-0.44615100	-0.18407900
H	2.16917500	-1.56095400	1.18810100
Be	-0.29295700	0.16039300	-0.05390500
Cl	0.74748100	1.72651600	-0.00288400
Cl	-2.11596600	-0.32183500	0.03822600

<b>Cl<sub>2</sub>Be...PH<sub>3</sub></b>			
Be	0.29274700	0.22628100	-0.00010900
H	-2.33303300	-1.13900800	-1.07760900
H	-2.33194400	-1.13996700	1.07860700
H	-1.18843300	-2.63931500	-0.00071700
P	-1.42214800	-1.24443300	-0.00000900
Cl	1.96180300	-0.62617300	0.00000900
Cl	-0.43152900	1.96027100	0.00000900

<b>Cl<sub>2</sub>Be...CO</b>			
Be	-0.00002900	-0.31732800	-0.00000500
C	0.00014300	1.61883600	0.00002700
O	0.00024600	2.76106300	0.00004600
Cl	1.77143200	-0.89816100	-0.00001500
Cl	-1.77159200	-0.89785200	-0.00001500

<b>Cl<sub>2</sub>Be...O(CH<sub>2</sub>)<sub>2</sub></b>			
O	1.15002200	0.00000000	-0.00006300
C	1.96722100	-1.20319100	0.00001700
H	2.59406200	-1.19954900	0.90371500
H	1.28069900	-2.05437700	-0.00003400
H	2.59421100	-1.19955700	-0.90357800
Be	-0.52420200	0.00000000	-0.00002000
C	1.96722100	1.20319200	-0.00003600

H	1.28069800	2.05437700	-0.00010900
H	2.59407200	1.19958200	0.90365500
H	2.59419900	1.19952700	-0.90363800
Cl	-1.28376400	1.72941600	-0.00001700
Cl	-1.28376300	-1.72941700	0.00005800

---

**H<sub>2</sub>Be•••OH<sub>2</sub>**

---

Be	-0.03976500	1.10177700	0.00000000
H	0.26756500	-1.11564800	0.78834600
H	0.26756500	-1.11564800	-0.78834600
O	-0.03976500	-0.64827500	0.00000000
H	-0.02897300	1.50519300	-1.30422700
H	-0.02897300	1.50519300	1.30422700

---

**H<sub>2</sub>Be•••SH<sub>2</sub>**

---

Be	1.72955100	0.00000000	0.02903700
S	-0.58289100	0.00000000	-0.10684500
H	-0.88616600	0.99013000	0.76062700
H	-0.88616500	-0.99012900	0.76062800
H	2.09018800	-1.30831400	0.03605800
H	2.09018900	1.30831400	0.03605800

---

**H<sub>2</sub>Be•••NH<sub>3</sub>**

---

Be	1.14586300	0.00113100	0.00006900
N	-0.66853400	0.01040100	-0.00004000
H	-1.02431500	-0.49421800	0.81464800
H	-1.02423700	-0.49460800	-0.81451900
H	-1.08787500	0.94057600	-0.00027900
H	1.65551600	1.27369300	-0.00013100
H	1.57719700	-1.30277200	0.00028400

---

**H<sub>2</sub>Be•••NCH**

---

C	-1.30322800	-0.00000800	-0.00009800
H	-2.38150500	0.00000400	-0.00042500
N	-0.12963000	0.00000100	0.00025900
Be	1.70836100	-0.00000100	-0.00009900
H	2.13747700	-1.29258900	-0.00020200
H	2.13736300	1.29263400	-0.00020200

---

**H<sub>2</sub>Be•••OCH<sub>2</sub>**

---

O	-0.08641200	-0.53189300	-0.00001600
C	-1.06888900	0.21858600	0.00000600
H	-2.08001300	-0.22038900	-0.00013200
H	-0.93431300	1.31356600	-0.00002500
Be	1.56821200	0.24127200	0.00005500
H	1.30641600	1.58843200	0.00005900

---

H	2.53969500	-0.70306800	-0.00003200
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**H<sub>2</sub>Be•••NH<sub>2</sub>CH<sub>3</sub>**

---

Be	-1.63008700	0.40522800	-0.00003500
N	-0.08833200	-0.52069200	-0.00010800
H	-0.11556500	-1.14940500	-0.80755500
H	-0.11602200	-1.14919800	0.80749700
H	-1.40006400	1.75919100	-0.00028800
H	-2.68500400	-0.47698800	0.00046500
C	1.17270200	0.26580900	0.00008600
H	1.17780500	0.91065000	-0.88708700
H	1.17634500	0.91253400	0.88588400
H	2.06496800	-0.37770000	0.00146300

---

---

**H<sub>2</sub>Be•••OHCH<sub>3</sub>**

---

O	-0.11297700	-0.42582800	-0.07346800
H	-0.07596600	-1.37511200	0.10518300
C	1.18825800	0.21089600	0.02913500
H	1.86523900	-0.21493700	-0.72299100
H	1.00530100	1.27157100	-0.16961300
H	1.59404300	0.07710300	1.04086300
Be	-1.64314100	0.33619500	0.01797500
H	-1.46020400	1.69051900	-0.05526000
H	-2.58157900	-0.65267400	0.14285600

---

---

**H<sub>2</sub>Be•••PH<sub>3</sub>**

---

Be	-1.80819000	0.00231500	-0.00003500
H	1.15449700	-0.67874800	-1.06769200
H	1.15443600	-0.67820800	1.06808500
H	1.34544800	1.17542600	-0.00026500
P	0.53122300	0.01513300	0.00000300
H	-2.10309200	-1.32717400	0.00022000
H	-2.28686900	1.27245000	-0.00024600

---

---

**H<sub>2</sub>Be•••CO**

---

Be	1.79884400	0.00000100	0.00008500
C	-0.17086900	-0.00000100	0.00000500
O	-1.31472500	0.00000000	-0.00004500
H	2.17382200	-1.30281400	-0.00000300
H	2.17381500	1.30281700	-0.00000300

---

---

**H<sub>2</sub>Be•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	-0.13792000	0.00000000	-0.00005800
C	0.66369700	-1.20319700	0.00004400
H	1.29431200	-1.21840400	0.90243500
H	-0.03946300	-2.04177200	-0.00000900

---

H	1.29448500	-1.21843300	-0.90222400
Be	-1.84636400	0.00000000	-0.00004900
C	0.66369700	1.20319700	-0.00001500
H	-0.03946400	2.04177200	-0.00010200
H	1.29431700	1.21844500	0.90237100
H	1.29447900	1.21839200	-0.90228800
H	-2.28711000	1.29615600	0.00012100
H	-2.28710900	-1.29615600	0.00018200

## 5. Magnesium Bonded Complexes

<b>F<sub>2</sub>Mg...OH<sub>2</sub></b>			
Mg	-0.05420400	-0.38102500	-0.00063300
F	1.66454600	-0.90106600	0.00034800
F	-1.83815400	-0.56968500	0.00041400
O	0.20295600	1.66968500	-0.00113900
H	-0.47839400	2.35265700	0.00523200
H	1.06766300	2.09893500	0.00461000

<b>F<sub>2</sub>Mg...SH<sub>2</sub></b>			
Mg	0.88009700	0.00013100	-0.02881300
F	1.21420100	-1.75820500	0.02209800
F	1.21313800	1.75867500	0.02209900
H	-1.95064400	-0.99025400	0.80190000
S	-1.78161200	-0.00033700	-0.10346900
H	-1.95076600	0.98983800	0.80159600

<b>F<sub>2</sub>Mg...NH<sub>3</sub></b>			
N	0.63298800	1.69511900	-0.00006100
H	0.35010900	2.24421700	-0.81323800
H	1.65416100	1.66345500	-0.00025700
H	0.35042900	2.24415600	0.81326900
Mg	-0.14418700	-0.34970700	0.00001700
F	-1.93699500	-0.22033500	0.00015300
F	1.37528800	-1.31535100	-0.00010300

<b>F<sub>2</sub>Mg...NCH</b>			
C	-2.64390500	0.00005400	0.00004300
H	-3.72229400	0.00000700	-0.00013800
N	-1.47008100	0.00010200	0.00023700
F	1.16766200	-1.74035100	-0.00000900
F	1.16785700	1.74026200	-0.00014900
Mg	0.73805200	-0.00002000	-0.00003000



---

**F<sub>2</sub>Mg•••OCH<sub>2</sub>**

---

O	1.03803300	-1.03418700	-0.00045800
C	2.13998200	-0.46945600	-0.00031400
H	3.05620700	-1.08392500	0.00055900
H	2.20017800	0.63218200	0.00125200
F	-2.24562900	-0.70737600	0.00052300
F	0.24752500	1.73321800	-0.00020600
Mg	-0.70146700	0.19244900	0.00007400

---

---

**F<sub>2</sub>Mg•••C<sub>2</sub>H<sub>4</sub>**

---

C	-1.77980100	-0.00421600	-0.67869400
H	-1.79458800	0.93589300	-1.23827500
H	-1.79305400	-0.94356700	-1.23956300
C	-1.77978800	-0.00509400	0.67872100
H	-1.79300100	-0.94516000	1.23838700
H	-1.79459200	0.93430000	1.23950600
F	1.07739700	1.76067000	0.00021200
F	1.09025700	-1.75472000	-0.00022700
Mg	0.75199000	0.00173700	-0.00000700

---

---

**F<sub>2</sub>Mg•••OHCH<sub>3</sub>**

---

O	-0.90977500	-0.88879300	-0.00239900
H	-0.92729500	-1.85414400	0.00006700
C	-2.25810100	-0.33660000	0.00143200
H	-2.78943600	-0.65832800	0.90705200
H	-2.12494600	0.75074400	-0.00125700
H	-2.79597200	-0.66221400	-0.89891000
F	2.16083800	-0.92477700	0.00103600
F	0.04675500	1.88180000	-0.00008200
Mg	0.79967700	0.24505600	-0.00041200

---

---

**F<sub>2</sub>Mg•••PH<sub>3</sub>**

---

F	-1.50402600	-1.65116800	0.00000000
F	-1.07784500	1.83064000	0.00000000
H	2.48573600	0.50579500	1.06726100
H	2.48570900	0.50539600	-1.06750900
H	2.48684600	-1.35606600	0.00021800
P	1.79591300	-0.12020300	0.00000200
Mg	-0.93001200	0.04438900	0.00000000

---

---

**F<sub>2</sub>Mg•••CO**

---

F	-1.14281800	-1.76412900	0.00029300
F	-1.14414300	1.76357300	0.00043800
C	1.56145900	0.00084200	0.00089600
O	2.70487100	0.00025800	-0.00027900
Mg	-0.86875600	-0.00017600	-0.00081000

---

---

**F<sub>2</sub>Mg•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	0.94341800	-0.00000100	-0.00006700
C	1.73848300	-1.20618400	0.00001900
H	2.37046600	-1.22870900	0.90168400
H	1.03144700	-2.04444800	-0.00003200
H	2.37062500	-1.22872900	-0.90153400
F	-1.48612200	1.75832400	0.00003300
F	-1.48612800	-1.75832000	0.00002900
C	1.73848500	1.20618100	-0.00003800
H	1.03145000	2.04444500	-0.00007100
H	2.37050800	1.22872100	0.90159800
H	2.37058700	1.22870900	-0.90161900
Mg	-1.10033200	0.00000100	0.00000600

---

---

**Cl<sub>2</sub>Mg•••OH<sub>2</sub>**

---

Mg	0.00006600	-0.11695100	0.00004100
O	-0.00031800	1.93780700	-0.00055600
H	0.78550300	2.49983800	0.00178700
H	-0.78654700	2.49927100	0.00177500
Cl	2.19849500	-0.56159400	0.00001200
Cl	-2.19833100	-0.56182800	0.00001200

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---

**Cl<sub>2</sub>Mg•••SH<sub>2</sub>**

---

Mg	-0.00004100	-0.51429200	-0.03936600
H	-0.99187000	2.30965300	0.80154800
S	0.00013700	2.13469500	-0.10127200
H	0.99219000	2.30948200	0.80153000
Cl	-2.19317500	-0.95880500	0.01440800
Cl	2.19305600	-0.95900400	0.01439700

---

---

**Cl<sub>2</sub>Mg•••NH<sub>3</sub>**

---

N	-0.03322400	2.10161600	0.00012100
H	0.43438000	2.50795100	0.81309100
H	-0.99425500	2.44979800	0.00027700
H	0.43415600	2.50806500	-0.81292100
Mg	0.00625600	-0.07038300	-0.00003700
Cl	2.18707300	-0.61488400	-0.00024200
Cl	-2.17041400	-0.63997000	0.00019300

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---

**Cl<sub>2</sub>Mg•••NCH**

---

C	0.00017700	-3.01068400	-0.00008100
H	0.00027100	-4.08935100	0.00050400
N	0.00007000	-1.83687400	-0.00070700

---

---

Mg	-0.00002300	0.35203200	-0.00000900
Cl	-2.17081400	0.90541500	0.00001000
Cl	2.17072200	0.90559700	0.00028700

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---

**Cl<sub>2</sub>Mg...OCH<sub>2</sub>**

---

O	0.62528000	1.67866600	0.00017900
C	1.85002300	1.85112400	0.00040900
H	2.24595400	2.88062700	0.00050400
H	2.54146700	0.99075100	0.00048600
Mg	-0.31646000	-0.21106100	-0.00006600
Cl	-2.53933200	-0.01379600	-0.00041400
Cl	1.53390400	-1.50824700	0.00017400

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---

**Cl<sub>2</sub>Mg...C<sub>2</sub>H<sub>4</sub>**

---

C	-0.00169500	2.11294900	0.67937100
H	-0.94201300	2.12698800	1.23896300
H	0.93831200	2.12983900	1.23939500
C	-0.00140600	2.11296800	-0.67937800
H	0.93883600	2.12986400	-1.23900500
H	-0.94148900	2.12702800	-1.23936500
Mg	0.00042200	-0.40727300	-0.00003500
Cl	2.19072200	-0.85151700	0.00016300
Cl	-2.18955200	-0.85330300	-0.00013500

---

---

**Cl<sub>2</sub>Mg...OHCH<sub>3</sub>**

---

O	0.33102700	1.54282600	-0.00031800
H	-0.34122300	2.23881500	0.00017100
C	1.67620600	2.10166700	0.00068300
H	1.82541700	2.70576700	0.90508000
H	2.35349200	1.24080700	-0.00009200
H	1.82588100	2.70781000	-0.90226600
Mg	-0.28064100	-0.40050600	0.00010200
Cl	-2.51074000	-0.12328200	-0.00007100
Cl	1.62830800	-1.58493800	-0.00026300

---

---

**Cl<sub>2</sub>Mg...PH<sub>3</sub>**

---

H	-1.34004600	2.54673900	1.07000600
H	-1.34021700	2.54672900	-1.06981600
H	0.43348400	3.13719300	-0.00005100
P	-0.52784600	2.09787900	0.00003300
Mg	0.15448500	-0.52039700	-0.00001400
Cl	2.39195200	-0.55638800	-0.00028000
Cl	-1.90309000	-1.41149900	0.00025300

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---

**Cl<sub>2</sub>Mg•••CO**

---

C	-0.00046200	1.90133700	0.00000500
O	-0.00081000	3.04481400	0.00014200
Mg	0.00015100	-0.51184100	-0.00003000
Cl	-2.19960900	-0.87174000	-0.00009000
Cl	2.20004700	-0.87087400	0.00004200

---

---

**Cl<sub>2</sub>Mg•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	0.33102700	1.54282600	-0.00031800
H	-0.34122300	2.23881500	0.00017100
C	1.67620600	2.10166700	0.00068300
H	1.82541700	2.70576700	0.90508000
H	2.35349200	1.24080700	-0.00009200
H	1.82588100	2.70781000	-0.90226600
Mg	-0.28064100	-0.40050600	0.00010200
Cl	-2.51074000	-0.12328200	-0.00007100
Cl	1.62830800	-1.58493800	-0.00026300

---

---

**H<sub>2</sub>Mg•••OH<sub>2</sub>**

---

Mg	-0.90820300	0.00001100	0.00000700
O	1.22492600	-0.00003500	-0.00043300
H	1.79339700	-0.78055700	0.00149400
H	1.79322700	0.78061200	0.00149300
H	-1.24398300	-1.70135500	0.00019900
H	-1.24361900	1.70145500	0.00019900

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---

**H<sub>2</sub>Mg•••SH<sub>2</sub>**

---

Mg	1.57936900	0.00000000	0.00490900
H	-1.46134300	-0.98604700	0.78943300
S	-1.23536500	-0.00000100	-0.10620700
H	-1.46131900	0.98605100	0.78943300
H	1.86805700	-1.70139100	0.03076600
H	1.86802000	1.70139900	0.03076300

---

---

**H<sub>2</sub>Mg•••NH<sub>3</sub>**

---

N	1.30325800	0.00312300	0.00009600
H	1.69219300	-0.47788800	0.81321100
H	1.69045100	0.94799400	0.00025100
H	1.69231100	-0.47766800	-0.81309300
Mg	-0.95472400	-0.00074300	-0.00006800
H	-1.36169200	-1.69204100	-0.00027700
H	-1.37937800	1.68665800	0.00005600

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---

**H<sub>2</sub>Mg•••NCH**

---

C	-2.02195200	0.00000300	-0.00000400
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H	-3.10000100	0.00004500	-0.00012100
N	-0.84584300	-0.00002200	0.00012300
Mg	1.45717300	0.00000600	-0.00004000
H	1.83323800	1.68921500	-0.00021300
H	1.83329400	-1.68919100	-0.00002300

---

**H<sub>2</sub>Mg•••OCH<sub>2</sub>**

---

O	0.72979900	-0.59054100	-0.00024700
C	1.63749700	0.24628700	-0.00013500
H	2.68973400	-0.08924100	-0.00050700
H	1.40498600	1.32703300	0.00008100
Mg	-1.36549700	0.11803600	0.00036600
H	-0.91153300	1.80455100	-0.00069900
H	-2.46060100	-1.21216600	-0.00048200

---

**H<sub>2</sub>Mg•••C<sub>2</sub>H<sub>4</sub>**

---

C	-1.29042100	-0.67774800	0.00002000
H	-1.29926800	-1.25006800	-0.93141000
H	-1.29889700	-1.25005100	0.93146500
C	-1.29041900	0.67774500	0.00001000
H	-1.29889300	1.25006300	0.93144600
H	-1.29926500	1.25005100	-0.93142900
Mg	1.43797900	0.00000100	-0.00001800
H	1.71282600	-1.70066600	-0.00003500
H	1.71278200	1.70067600	0.00000100

---

**H<sub>2</sub>Mg•••OHCH<sub>3</sub>**

---

O	-0.52200600	-0.51473400	0.00004900
H	-0.73180700	-1.45813700	0.00012400
C	-1.73378500	0.28342500	0.00002700
H	-2.32503600	0.07628800	0.90276800
H	-1.39904900	1.32692000	-0.00005900
H	-2.32509100	0.07615600	-0.90264700
Mg	1.47891500	0.15500100	-0.00005500
H	2.35788700	-1.34257100	0.00006000
H	1.25487100	1.87864600	-0.00013700

---

**H<sub>2</sub>Mg•••PH<sub>3</sub>**

---

H	-1.88185600	-0.65878400	1.05987400
H	-1.88191000	-0.65898300	-1.05962700
H	-2.02772500	1.18164900	-0.00004500
P	-1.21959500	0.01493000	0.00004400
Mg	1.67760500	-0.00346900	-0.00005800
H	1.87379600	-1.71986700	0.00009700
H	2.08036600	1.67365700	-0.00025300

<b>H<sub>2</sub>Mg•••CO</b>			
C	-0.99395200	-0.00044500	-0.00041500
O	-2.13986300	0.00018300	0.00033600
Mg	1.61607600	0.00007700	-0.00000400
H	1.84530000	-1.70476300	-0.00005400
H	1.84440500	1.70504200	-0.00009400

<b>H<sub>2</sub>Mg•••O(CH<sub>3</sub>)<sub>2</sub></b>			
O	0.36724000	0.00000000	0.00001700
C	1.17199400	1.19724800	0.00010200
H	1.80527500	1.21801500	-0.90142500
H	0.47574000	2.04425200	-0.00000200
H	1.80504900	1.21804400	0.90178800
C	1.17199400	-1.19724800	0.00012200
H	0.47574000	-2.04425200	0.00003200
H	1.80527500	-1.21803000	-0.90140400
H	1.80504900	-1.21802900	0.90180800
Mg	-1.74504100	0.00000000	-0.00028200
H	-2.11674500	1.69779400	0.00053600
H	-2.11674600	-1.69779400	0.00056400

## 6. Calcium Bonded Complexes

<b>F<sub>2</sub>Ca•••OH<sub>2</sub></b>			
F	1.26696900	1.34039700	0.00001000
F	-2.38821900	-0.21915200	0.00001600
O	1.66994200	-1.12511800	0.00000200
H	2.38180400	-1.76695100	0.00003200
H	2.03369800	-0.20474600	0.00001400
Ca	-0.38418900	0.04407200	-0.00001500

<b>F<sub>2</sub>Ca•••SH<sub>2</sub></b>			
F	-0.25276100	1.84418600	0.05831000
F	2.60204700	-0.84399300	0.07632800
H	-2.21993900	-0.84222600	1.25023100
H	-1.84987900	0.67497000	0.05725100
Ca	0.81684500	0.08418700	-0.06943300
S	-2.08816600	-0.65738900	-0.07066000

<b>F<sub>2</sub>Ca•••NH<sub>3</sub></b>			
N	1.76372700	-1.23903700	0.00001300
H	2.08059200	-1.76003700	0.81207600
H	2.25272200	-0.34044200	0.00009400
H	2.08065700	-1.75992400	-0.81209700
F	-2.33401700	-0.42513200	-0.00014600
F	1.07377200	1.57862500	0.00014900

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Ca	-0.37089300	0.10761100	-0.00001000
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**F<sub>2</sub>Ca•••NCH**

---

C	3.05342300	-0.00002000	0.00002700
H	4.12314800	-0.00002300	0.00003800
N	1.89315700	-0.00001800	0.00001000
F	-1.26354000	1.93861500	-0.00001100
F	-1.26359700	-1.93859200	-0.00001100
Ca	-0.64757800	0.00000300	-0.00000300

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---

**F<sub>2</sub>Ca•••CO**

---

F	-1.23310900	-1.97240100	0.00068300
F	-1.23175200	1.97290600	0.00082500
C	2.02237400	-0.00040000	-0.00019300
O	3.15376200	-0.00048800	0.00031400
Ca	-0.75903000	0.00008800	-0.00074600

---

---

**F<sub>2</sub>Ca•••OCH<sub>2</sub>**

---

O	1.44719600	-1.12480100	-0.00007100
C	2.46503500	-0.44379100	0.00002700
H	3.44464200	-0.93893700	0.00005900
H	2.39471200	0.65146800	0.00008500
F	-2.59932200	-0.59213100	-0.00006000
F	0.55001500	1.73177000	0.00014000
Ca	-0.68816900	0.08459400	-0.00002300

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---

**F<sub>2</sub>Ca•••C<sub>2</sub>H<sub>4</sub>**

---

C	-2.18433400	-0.00457100	-0.66878400
H	-2.20269300	0.92509200	-1.22851600
H	-2.20126700	-0.93302800	-1.23054300
C	-2.18433200	-0.00600100	0.66878300
H	-2.20123200	-0.93564500	1.22857400
H	-2.20272000	0.92247600	1.23048400
F	1.17777700	1.97129800	0.00024000
F	1.19299400	-1.96478800	-0.00024100
Ca	0.68414800	0.00129800	0.00000100

---

---

**F<sub>2</sub>Ca•••OHCH<sub>3</sub>**

---

O	-1.26420500	-1.08316100	-0.00000900
H	-1.43865200	-2.03018200	-0.00002400
C	-2.51926600	-0.36173700	0.00001000
H	-3.09178100	-0.60804800	0.89389500
H	-2.25465000	0.69383700	0.00000600
H	-3.09180700	-0.60804900	-0.89385800
F	2.54078000	-0.81204500	0.00000900
F	-0.32199700	1.91912800	0.00000000

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Ca	0.75685400	0.17122000	-0.00000400
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**F<sub>2</sub>Ca•••PH<sub>3</sub>**

---

F	-2.68905500	-0.83078800	0.00000100
F	0.25341000	1.78668900	0.00000100
H	2.66349100	0.13049200	1.05391500
H	2.66347000	0.13049200	-1.05392500
H	2.97654300	-1.67608600	-0.00000700
P	2.08130600	-0.59011400	0.00000100
Ca	-0.88011500	0.08318500	-0.00000100

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---

**F<sub>2</sub>Ca•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	1.25450900	-0.17294300	0.00000300
C	2.10089400	0.98248200	-0.00001400
H	2.73100000	0.98010000	-0.89307000
H	1.44605900	1.85310000	-0.00003300
H	2.73099200	0.98013300	0.89304800
C	1.99266400	-1.39348500	0.00003000
H	1.27129900	-2.20924400	0.00004200
H	2.62065500	-1.45257100	-0.89271500
H	2.62064600	-1.45253700	0.89278400
Ca	-1.07913100	0.09296600	-0.00000700
F	-1.03730400	2.14582400	-0.00004500
F	-1.89997000	-1.78012800	0.00004100

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---

**Cl<sub>2</sub>Ca•••OH<sub>2</sub>**

---

O	0.92039300	1.99007700	0.00010300
H	0.84661200	2.94868800	0.00008100
H	1.86051100	1.74969500	0.00013000
Ca	-0.16461700	-0.09162500	-0.00000400
Cl	-2.64256800	-0.25819100	-0.00011700
Cl	2.24386600	-0.84689700	0.00006100

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---

**Cl<sub>2</sub>Ca•••SH<sub>2</sub>**

---

H	-0.98498500	2.43560600	0.81687700
H	0.98450000	2.43583000	0.81694400
Ca	0.00005900	-0.59897800	-0.16573900
S	-0.00019900	2.32513200	-0.08716500
Cl	2.45735200	-0.88498200	0.09046000
Cl	-2.45720600	-0.88525200	0.09045900

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**Cl<sub>2</sub>Ca•••NH<sub>3</sub>**

---

N	-0.48741700	2.25575700	0.00000000
H	-0.18713600	2.79092900	0.81102400
H	-1.50649800	2.25992700	0.00000200
H	-0.18714200	2.79091500	-0.81103600

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Ca	0.08248600	-0.16339900	0.00000400
Cl	2.56251500	-0.42409100	-0.00000200
Cl	-2.34822300	-0.77379600	-0.00000200

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---

**Cl<sub>2</sub>Ca•••NCH**

---

C	0.00006900	-3.28477200	0.00003300
H	0.00009700	-4.35474000	0.00004800
N	0.00004000	-2.12494600	0.00001900
Ca	-0.00000900	0.36266600	-0.00000800
Cl	2.42368500	0.93193900	-0.00000300
Cl	-2.42372000	0.93186600	-0.00001000

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---

**Cl<sub>2</sub>Ca•••CO**

---

C	-0.00116500	2.15377100	-0.00004200
O	-0.00187800	3.28480500	-0.00000600
Ca	0.00034400	-0.55819300	-0.00003500
Cl	2.46762400	-0.82366100	0.00001500
Cl	-2.46673400	-0.82558600	0.00004400

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---

**Cl<sub>2</sub>Ca•••OCH<sub>2</sub>**

---

O	1.03243200	1.77209800	0.00004800
C	2.25453200	1.80401000	0.00002200
H	2.77153100	2.77128600	0.00004700
H	2.83951200	0.87643500	-0.00002700
Ca	-0.38389600	-0.16911800	-0.00000100
Cl	-2.85043800	0.10099400	0.00014600
Cl	1.69045200	-1.58724200	-0.00017600

---

---

**Cl<sub>2</sub>Ca•••C<sub>2</sub>H<sub>4</sub>**

---

C	-0.00379700	2.35069400	0.66942200
H	-0.93450000	2.36691600	1.22815100
H	0.92679900	2.37163800	1.22815700
C	-0.00382300	2.35069400	-0.66942300
H	0.92675200	2.37163800	-1.22819400
H	-0.93454700	2.36691500	-1.22811600
Ca	0.00094200	-0.46350000	0.00000000
Cl	2.45756100	-0.83359800	0.00000300
Cl	-2.45506800	-0.83789800	-0.00000200

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---

**Cl<sub>2</sub>Ca•••OHCH<sub>3</sub>**

---

O	-0.18165800	1.73094600	-0.00000400
H	0.57147200	2.33508700	-0.00000300
C	-1.42099000	2.46601900	0.00000200
H	-1.49243600	3.08424100	-0.89424400
H	-2.21536200	1.72367500	-0.00000400
H	-1.49243600	3.08422700	0.89425900

---

Ca	0.23155400	-0.55015900	-0.00000100
Cl	-2.12980900	-1.37742400	0.00000000
Cl	2.71668500	-0.26185400	0.00000100

---

**Cl<sub>2</sub>Ca•••PH<sub>3</sub>**

---

H	-2.52260900	1.70588600	1.05594700
H	-2.52270200	1.70581700	-1.05580700
H	-1.49146600	3.22994800	-0.00002800
P	-1.60570100	1.82927900	0.00002600
Ca	0.45465200	-0.37754000	0.00000500
Cl	-1.58904300	-1.80886300	0.00024800
Cl	2.85546900	0.24827300	-0.00028400

---

**Cl<sub>2</sub>Ca•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	0.00000000	1.56485200	-0.00000400
C	-1.18770700	2.36816800	-0.00002400
H	-1.20669100	2.99660600	-0.89352500
H	-2.03861100	1.68935500	-0.00003700
H	-1.20672100	2.99660700	0.89347600
C	1.18770700	2.36816800	0.00001500
H	2.03861100	1.68935500	0.00002900
H	1.20672100	2.99660700	-0.89348500
H	1.20669200	2.99660600	0.89351600
Ca	0.00000000	-0.75941600	0.00000100
Cl	-2.46124800	-1.20922500	-0.00008000
Cl	2.46124800	-1.20922500	0.00008600

---

**H<sub>2</sub>Ca•••SH<sub>2</sub>**

---

H	1.85361700	0.98061200	0.79247000
H	1.85362700	-0.98060200	0.79248400
Ca	-1.34878400	0.00000100	-0.01622000
S	1.66718300	-0.00000200	-0.10240700
H	-1.70326400	-2.00648600	0.18897900
H	-1.70322200	2.00649600	0.18898000

---

**H<sub>2</sub>Ca•••NH<sub>3</sub>**

---

N	1.73011800	-0.08211400	0.00000000
H	2.19020800	-0.48525400	0.81207000
H	1.94569100	0.91388500	0.00000600
H	2.19020900	-0.48524300	-0.81207500
Ca	-0.79662300	0.01740900	0.00000000
H	-1.76141200	-1.79678500	0.00000100
H	-0.74306200	2.08002000	0.00000100

---

**H<sub>2</sub>Ca•••NCH**

---

C	2.49388800	-0.00000700	0.00002200
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H	3.56353200	-0.00003200	0.00004900
N	1.33342900	0.00002000	-0.00000600
Ca	-1.21573800	-0.00000300	-0.00000600
H	-1.77307100	1.97143400	-0.00000400
H	-1.77304400	-1.97144700	-0.00001100

---

**H<sub>2</sub>Ca•••CO**

---

C	-1.47825000	-0.00003600	-0.00000800
O	-2.61020200	-0.00000200	0.00000300
Ca	1.32682100	0.00000800	0.00000200
H	1.60751700	-2.02719000	-0.00000300
H	1.60718400	2.02725400	-0.00000600

---

**H<sub>2</sub>Ca•••OCH<sub>2</sub>**

---

O	1.17784900	-0.60939400	-0.00011600
C	2.06381100	0.23338800	-0.00000800
H	3.11472900	-0.08253100	-0.00007600
H	1.81347900	1.30170300	0.00015400
Ca	-1.17669500	0.07335900	0.00003600
H	-2.75937900	-1.21720200	-0.00005500
H	-0.44059000	2.00568000	0.00023700

---

**H<sub>2</sub>Ca•••C<sub>2</sub>H<sub>4</sub>**

---

C	-1.70659300	-0.00174000	-0.66856100
H	-1.72065900	0.92585000	-1.23163000
H	-1.72233800	-0.93210000	-1.22698200
C	-1.70659300	0.00162700	0.66856100
H	-1.72233900	-0.92590800	1.23166100
H	-1.72065800	0.93204100	1.22695100
Ca	1.20572200	0.00000800	0.00000000
H	1.62675400	-2.00186100	0.00500300
H	1.62390800	2.00249100	-0.00500500

---

**H<sub>2</sub>Ca•••OHCH<sub>3</sub>**

---

O	-0.98458000	-0.58519000	0.00004100
H	-1.29765300	-1.49677200	0.00009000
C	-2.10732100	0.31963200	0.00002700
H	-2.71216200	0.17167200	0.89437100
H	-1.68662000	1.32259500	-0.00002400
H	-2.71220100	0.17159800	-0.89427900
Ca	1.28140200	0.10385700	-0.00002800
H	0.88518700	2.12987600	-0.00009800
H	2.41598200	-1.61238500	0.00000800

---

**H<sub>2</sub>Ca•••PH<sub>3</sub>**

---

H	2.28901100	0.66893300	1.05154600
---	------------	------------	------------

---

H	2.28894600	0.66906000	-1.05153900
H	2.56684600	-1.14001000	-0.00011700
P	1.68710800	-0.04342700	-0.00002100
Ca	-1.43708200	0.01188800	0.00002000
H	-1.41884500	2.06210000	0.00029900
H	-2.29092400	-1.84644700	-0.00028000

---



---

**H<sub>2</sub>Ca•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	-0.77422000	0.00000000	0.00001100
C	-1.56968000	1.18753400	0.00004300
H	-2.19880600	1.21459800	0.89340300
H	-0.88403600	2.03356500	0.00005500
H	-2.19882100	1.21463600	-0.89330500
C	-1.56968000	-1.18753400	-0.00000600
H	-0.88403600	-2.03356500	-0.00002900
H	-2.19880500	-1.21463500	0.89335300
H	-2.19882200	-1.21459900	-0.89335400
Ca	1.58154000	0.00000000	-0.00001900
H	1.98122700	2.02318600	0.00001300
H	1.98122700	-2.02318600	-0.00006300

---



---

**H<sub>2</sub>Ca•••CH<sub>3</sub>CN**

---

C	1.72606700	-0.00162700	0.00111200
N	0.56266400	-0.00392900	0.00293900
Ca	-1.94389100	0.00076600	-0.00033600
H	-2.54591600	1.96260700	-0.00244400
H	-2.56034200	-1.95652800	-0.00250800
C	3.17666500	0.00157200	-0.00166500
H	3.54514200	-0.15715300	1.01171900
H	3.54360700	-0.79682500	-0.64649200
H	3.54029500	0.96041200	-0.37082400

7. Boron Bonded Complexes

---

**F<sub>3</sub>B•••OH<sub>2</sub>**

---

B	0.27369500	0.00000200	-0.04393200
F	0.92392400	-0.00001900	1.15393200
F	0.30420000	1.17215600	-0.76966800
F	0.30420700	-1.17212700	-0.76971000
O	-1.43261200	-0.00000900	0.45022400
H	-1.84928200	0.77689900	0.04343400
H	-1.84927400	-0.77692700	0.04344600

---

---

**F<sub>3</sub>B•••SH<sub>2</sub>**

---

B	1.02324500	0.00000000	-0.00799800
F	1.10850800	1.16243200	0.65644600
F	1.03001900	-0.00000600	-1.35178500
F	1.10850400	-1.16242700	0.65645600
S	-1.89302800	0.00000100	0.12441400
H	-2.02553600	0.97533300	-0.80034100
H	-2.02552500	-0.97532900	-0.80034500

---

---

**F<sub>3</sub>B•••NH<sub>3</sub>**

---

B	-0.19643800	0.00000600	0.00000600
F	-0.54251700	1.08945600	0.80490700
F	-0.54258500	-1.24178600	0.54102000
F	-0.54251800	0.15236800	-1.34594600
N	1.45714900	-0.00003500	0.00001500
H	1.81025700	0.87818500	-0.38261100
H	1.81022500	-0.77051800	-0.56924100
H	1.81024600	-0.10779200	0.95189200

---

---

**F<sub>3</sub>B•••NCH**

---

B	0.86577800	-0.00000500	-0.00000700
F	0.95456500	0.23622100	1.32070000
F	0.95453000	1.02564600	-0.86493900
F	0.95447300	-1.26189000	-0.45577900
H	-3.73988000	0.00000200	0.00002900
C	-2.66233000	0.00002200	0.00001800
N	-1.48387700	0.00001400	0.00000800

---

---

**F<sub>3</sub>B•••CO**

---

B	1.02418300	0.00000100	-0.00000100
F	1.05711000	1.18779900	-0.61823900
F	1.05712400	-1.12931000	-0.71954000
F	1.05711100	-0.05848500	1.33778300

---

---

C	-1.74830900	-0.00000600	-0.00000500
O	-2.89664600	-0.00000100	0.00000000

---

---

**F<sub>3</sub>B•••OCH<sub>2</sub>**

---

B	-0.61141000	0.06315200	-0.00000100
F	-1.09366300	-0.44603800	1.17060600
F	-1.09365100	-0.44604400	-1.17061100
F	-0.29008500	1.40519900	-0.00000200
C	2.03245700	0.00934300	0.00000100
H	1.94552500	1.10691300	-0.00001300
H	3.02185400	-0.47233600	0.00000900
O	1.02394000	-0.70305700	0.00000700

---

---

**F<sub>3</sub>B•••C<sub>2</sub>H<sub>4</sub>**

---

B	-0.93412100	0.00000100	0.00810500
F	-0.90166200	-0.00001100	1.34800900
F	-1.01372100	-1.16020500	-0.65764200
F	-1.01371300	1.16021900	-0.65762200
C	1.93939000	0.67555700	-0.02106200
H	1.83963200	1.24278600	0.90807200
H	2.04027200	1.24329200	-0.94931100
C	1.93938800	-0.67556100	-0.02106300
H	2.04026700	-1.24329300	-0.94931400
H	1.83962800	-1.24279300	0.90806900

---

---

**F<sub>3</sub>B•••OHCH<sub>3</sub>**

---

B	-0.62099800	0.08318800	0.01922700
F	-1.52406100	-0.92552600	-0.24761600
F	-0.60810700	1.16167700	-0.83576400
F	-0.47388000	0.39739700	1.36288400
C	2.03361300	0.04871100	0.00479500
H	2.04091900	0.23059900	1.08624800
H	2.90564100	-0.53152400	-0.31840700

---

---

H	1.97088100	0.99186200	-0.54635500
O	0.82830000	-0.69339600	-0.36801400
H	0.81390100	-1.55390100	0.08218000

---

---

**F<sub>3</sub>B•••PH<sub>3</sub>**

---

B	-1.11193300	0.00000200	0.00000000
F	-1.16289400	-1.14180200	-0.70223000
F	-1.16287300	1.17905300	-0.63771600
F	-1.16288300	-0.03724500	1.33994600
H	2.67326700	-1.06718500	0.57720300
H	2.67323100	1.03347400	0.63561800
H	2.67325500	0.03373300	-1.21281400
P	1.92918400	-0.00000600	-0.00000100

---

---

**F<sub>3</sub>B•••O(CH<sub>3</sub>)<sub>2</sub>**

---

B	-0.81655000	0.00000100	0.02407700
F	-1.29086300	-1.17143900	-0.53269700
F	-1.29085800	1.17144400	-0.53269500
F	-0.75277900	-0.00000200	1.41322000
C	1.49052700	1.20315200	-0.01358700
H	1.54354000	1.22153200	1.08453800
H	2.49338700	1.18168700	-0.45954300
H	0.90992500	2.04919200	-0.39227100
O	0.78915900	0.00000000	-0.44415200
C	1.49052200	-1.20315600	-0.01358900
H	1.54353300	-1.22154000	1.08453600
H	0.90991800	-2.04919300	-0.39227700
H	2.49338400	-1.18169300	-0.45954300

---

---

**Cl<sub>3</sub>B•••OH<sub>2</sub>**

---

B	0.00000100	-0.02590000	0.04155300
O	0.00000400	-0.01631900	1.74320200
H	0.78221100	0.48717600	2.03699500

---

---

H	-0.78222100	0.48714900	2.03699200
Cl	-0.00007400	1.75186900	-0.40197000
Cl	1.54449500	-0.89688000	-0.33511600
Cl	-1.54442300	-0.89700600	-0.33511100

---

---

**Cl<sub>3</sub>B•••SH<sub>2</sub>**

---

B	0.78749900	0.00000000	0.01870100
S	-2.55941300	-0.00000100	-0.17645000
H	-2.65269000	-0.97493300	0.75339700
H	-2.65269000	0.97492700	0.75340100
Cl	0.87803800	-1.52226500	-0.85298500
Cl	0.73325000	-0.00000500	1.77789600
Cl	0.87803500	1.52227000	-0.85297600

---

---

**Cl<sub>3</sub>B•••NH<sub>3</sub>**

---

B	0.00000000	0.00000000	-0.10490900
N	-0.00000100	0.00000000	-1.72743400
H	-0.43038600	-0.85987600	-2.07948900
H	-0.52948300	0.80266200	-2.07948900
H	0.95986500	0.05721400	-2.07949000
Cl	0.98034500	-1.48614300	0.36970700
Cl	0.79686600	1.59207500	0.36970700
Cl	-1.77721000	-0.10593200	0.36970800

---

---

**Cl<sub>3</sub>B•••NCH**

---

B	0.00000000	0.00000000	-0.10490900
N	-0.00000100	0.00000000	-1.72743400
H	-0.43038600	-0.85987600	-2.07948900
H	-0.52948300	0.80266200	-2.07948900
H	0.95986500	0.05721400	-2.07949000
Cl	0.98034500	-1.48614300	0.36970700
Cl	0.79686600	1.59207500	0.36970700
Cl	-1.77721000	-0.10593200	0.36970800

---



---

**Cl<sub>3</sub>B...CO**

---

B	-0.75817400	-0.00003700	0.00002200
C	2.45047700	0.00020900	-0.00017700
O	3.60026300	0.00012000	-0.00003600
Cl	-0.77867100	-1.11809400	-1.35389400
Cl	-0.77854500	-0.61354200	1.64524600
Cl	-0.77890700	1.73151600	-0.29127900

---

---

**Cl<sub>3</sub>B...OCH<sub>2</sub>**

---

B	-0.20853000	0.00000000	0.07469500
C	2.08538500	0.00000200	-1.21131600
H	2.58307700	0.00000300	-0.22983400
H	2.66102500	0.00000500	-2.14725700
O	0.84938900	-0.00000100	-1.29603600
Cl	0.85785500	0.00002900	1.55672600
Cl	-1.12034500	-1.53854800	-0.20070600
Cl	-1.12038400	1.53851800	-0.20073800

---

---

**Cl<sub>3</sub>B...C<sub>2</sub>H<sub>4</sub>**

---

B	-0.69695600	0.00000000	0.03502600
C	2.53945400	0.67529000	-0.13729000
H	2.37314500	1.24337300	0.78203800
H	2.70501700	1.24336400	-1.05636000
C	2.53945500	-0.67528900	-0.13729000
H	2.70501800	-1.24336300	-1.05636000
H	2.37314600	-1.24337200	0.78203800
Cl	-0.55371900	0.00000000	1.78709600
Cl	-0.81564000	-1.52121300	-0.83410700
Cl	-0.81564100	1.52121300	-0.83410700

---

---

**Cl<sub>3</sub>B...OHCH<sub>3</sub>**

---

---

B	0.23696800	0.02979800	-0.05721000
C	-2.22736400	-0.12170000	0.98082900
H	-2.47123900	-1.02564700	0.41076900
H	-2.72552100	-0.09586500	1.95655500
H	-2.44567800	0.78150400	0.40310100
O	-0.77874700	-0.07289300	1.23690800
H	-0.49406000	-0.85216900	1.74966800
Cl	-0.22765400	-1.34218200	-1.18453200
Cl	1.86146300	-0.20673100	0.74540500
Cl	-0.07229100	1.68753300	-0.73818300

---

---

**Cl<sub>3</sub>B•••PH<sub>3</sub>**

---

B	-0.85243100	-0.00000400	0.00000100
H	3.37875900	0.75422400	-0.94196400
H	3.37872500	-1.19287200	-0.18219300
H	3.37874700	0.43865700	1.12415700
P	2.61938200	0.00001400	-0.00000300
Cl	-0.88560200	1.73643400	0.26520000
Cl	-0.88558100	-0.63855400	-1.63639800
Cl	-0.88557000	-1.09789300	1.37120000

---

---

**Cl<sub>3</sub>B•••O(CH<sub>3</sub>)<sub>2</sub>**

---

B	-0.39088400	-0.00180600	0.04064500
C	1.89353300	1.21529000	-0.43664300
H	2.12414000	1.27523500	0.63627100
H	2.80358000	1.11301600	-1.04041400
H	1.29454900	2.06770900	-0.76488500
O	1.08899200	0.01035000	-0.68469900
C	1.90688300	-1.18405700	-0.42692400
H	2.27087600	-1.15087900	0.60907800
H	1.26137600	-2.04981400	-0.59403400
H	2.73219700	-1.15887100	-1.14909200
Cl	-0.05308500	-0.07691300	1.84887700

---

---

Cl	-1.19880100	1.54941100	-0.48679900
Cl	-1.22145200	-1.49353000	-0.61155800

---

---

**HF<sub>2</sub>B•••OH<sub>2</sub>**

---

B	-0.33643700	0.00000000	0.46920500
F	-0.70136800	-1.16754400	-0.18759800
F	-0.70136700	1.16754500	-0.18759800
O	1.43843200	0.00000000	0.05115500
H	1.56025000	-0.77441600	-0.52304800
H	1.56024900	0.77441500	-0.52304900
H	-0.32115400	0.00000000	1.66759600

---

---

**HF<sub>2</sub>B•••SH<sub>2</sub>**

---

B	-1.24927900	0.00000800	0.48267300
F	-1.37857000	-1.15263100	-0.20904500
F	-1.37858400	1.15262800	-0.20901700
S	1.80996800	-0.00004300	0.08383500
H	1.62137800	-0.97508600	-0.83122400
H	1.62153800	0.97581700	-0.83038600
H	-1.14161700	-0.00005700	1.66943900

---

---

**HF<sub>2</sub>B•••NH<sub>3</sub>**

---

B	-0.22621100	0.00000000	0.44348900
F	-0.73587000	-1.17699200	-0.15597300
F	-0.73586900	1.17699300	-0.15597300
N	1.36025200	-0.00000100	-0.06894400
H	1.85791500	0.83087900	0.25324800
H	1.35929600	-0.00000100	-1.09165700
H	1.85791500	-0.83088000	0.25324900
H	-0.22018200	0.00000000	1.65783500

---

---

**HF<sub>2</sub>B•••NCH**

---

---

B	-1.09625600	0.00000100	0.45505400
F	-1.25275000	1.15327200	-0.23102700
F	-1.25276300	-1.15326600	-0.23102900
H	3.62251500	0.00000700	-0.34245600
C	2.57283000	0.00000000	-0.09851200
N	1.42304600	-0.00000900	0.16780400
H	-0.98992000	-0.00000100	1.64213000

---



---

**HF<sub>2</sub>B...CO**

---

B	1.28818100	-0.00000200	0.46349100
F	1.36508300	1.15195200	-0.23035500
F	1.36503300	-1.15197100	-0.23034800
C	-1.66513000	0.00003900	0.17238200
O	-2.77960500	-0.00000600	-0.10734400
H	1.21567600	-0.00000600	1.65333700

---



---

**HF<sub>2</sub>B...OCH<sub>2</sub>**

---

B	-0.79447900	0.02531800	0.45752100
F	-1.39425800	-0.85849700	-0.40397700
F	-0.61361800	1.30005100	-0.05836400
C	1.81152400	0.05786100	-0.24081300
H	1.54751400	1.04858900	-0.64520800
H	2.83898100	-0.32584300	-0.34722300
O	0.96696600	-0.63452000	0.33384000
H	-0.94809200	-0.09432800	1.64004900

---



---

**HF<sub>2</sub>B...C<sub>2</sub>H<sub>4</sub>**

---

B	-1.10887900	-0.13145800	0.49045000
F	-1.17854300	-1.13456200	-0.40776700
F	-1.38343300	1.11418100	0.05361400
C	1.69494300	0.59936500	-0.45437800
H	1.82508900	1.62863300	-0.11053300
H	1.31303900	0.45256900	-1.46809200

---

---

C	1.99262800	-0.45076600	0.34117000
H	1.86060700	-1.47935000	-0.00462200
H	2.37676400	-0.30448600	1.35419100
H	-0.89875000	-0.34823900	1.64342100

---

---

**HF<sub>2</sub>B...OHCH<sub>3</sub>**

---

B	-0.68924100	0.08915800	0.41042500
F	-1.61998300	-0.84272800	-0.03673100
F	-0.75602100	1.33636000	-0.19189300
C	1.97518300	0.05783800	0.11364100
H	2.08262800	-0.05931900	1.20064600
H	2.81427300	-0.40262800	-0.42185000
H	1.88696800	1.11676500	-0.14940500
O	0.73461400	-0.55662600	-0.34272300
H	0.74277400	-1.50928300	-0.15536500
H	-0.42440300	0.07197600	1.59139600

---

---

**HF<sub>2</sub>B...PH<sub>3</sub>**

---

B	-1.38762800	0.00000000	0.48143300
F	-1.47835400	-1.15221600	-0.21355900
F	-1.47835800	1.15221500	-0.21355900
H	2.76753200	-1.04778800	0.24865400
H	2.76751300	1.04781700	0.24860500
H	1.95919500	-0.00003100	-1.37516200
P	1.82467600	0.00000100	0.04290800
H	-1.31582800	0.00000000	1.67119300

---

---

**HF<sub>2</sub>B...O(CH<sub>3</sub>)<sub>2</sub>**

---

B	0.90490200	0.00000000	0.39974500
F	1.44873400	1.17027200	-0.12182400
F	1.44873400	-1.17027200	-0.12182300
C	-1.39093700	-1.20002100	0.03719800
H	-1.54616500	-1.23218900	1.12719000

---

H	-2.35265900	-1.17634100	-0.49289500
H	-0.78100500	-2.04617400	-0.29302800
O	-0.65171000	0.00000000	-0.31544600
C	-1.39093900	1.20002100	0.03719900
H	-1.54616600	1.23218800	1.12719100
H	-0.78100800	2.04617400	-0.29302600
H	-2.35266100	1.17633900	-0.49289400
H	0.66287900	0.00000100	1.58873500

## 8. Aluminium Bonded Complexes

<b>F<sub>3</sub>Al...OH<sub>2</sub></b>			
F	1.55618000	0.00001500	0.91321500
F	-0.13322400	1.44963000	-0.91669000
F	-0.13319300	-1.44963300	-0.91668900
O	-1.36486200	-0.00001100	1.03583700
H	-1.91459300	0.77926200	0.85259800
H	-1.91456900	-0.77930400	0.85262000
Al	0.24155300	0.00000200	-0.13157300

<b>F<sub>3</sub>Al...SH<sub>2</sub></b>			
F	-0.96451700	1.45114800	-0.79560200
F	-0.81177600	0.00000100	1.68616100
F	-0.96451600	-1.45114900	-0.79560000
S	1.83680700	0.00000000	-0.15340300
H	1.99845900	0.98124700	0.76574100
H	1.99845900	-0.98124700	0.76574000
Al	-0.67065800	0.00000000	0.00525700

<b>F<sub>3</sub>Al...NH<sub>3</sub></b>			
Al	-0.26849300	-0.00000800	-0.00001000
F	-0.56655900	0.98607800	-1.34261400
F	-0.56669500	0.66963100	1.52526100
F	-0.56646400	-1.65580200	-0.18272800

---

N	1.76811400	0.00009100	0.00008200
H	2.13705700	-0.94717200	-0.10440700
H	2.13697400	0.38323700	0.87271200
H	2.13703300	0.56424300	-0.76801600

---

---

**F<sub>3</sub>Al...NCH**

---

Al	0.57688700	-0.00000800	-0.00003200
F	0.84019500	-0.14636300	1.65713600
F	0.83999300	1.50834900	-0.70187200
F	0.83987700	-1.36201500	-0.95535800
H	-3.74249700	0.00005100	0.00016200
C	-2.66381900	0.00003100	0.00011500
N	-1.49353000	0.00001900	0.00005800

---

---

**F<sub>3</sub>Al...CO**

---

F	0.84812600	1.45448700	0.81672000
F	0.84815500	-0.01995100	-1.66797400
F	0.84810900	-1.43454100	0.85127200
C	-1.59379900	0.00000500	-0.00001300
O	-2.73478500	0.00000500	-0.00001400
Al	0.65704300	-0.00000200	0.00000200

---

---

**F<sub>3</sub>Al...OCH<sub>2</sub>**

---

Al	-0.56702600	-0.00001400	0.07903800
F	-1.21146300	-1.44962500	-0.47799100
F	-1.21139400	1.44986300	-0.47735600
F	0.04581500	-0.00037600	1.66214100
C	2.26571600	0.00000600	-0.17079500
H	2.24528700	-0.00028200	0.93044300
H	3.22159700	0.00014000	-0.71612300
O	1.21294300	0.00019000	-0.82227400

---

---

**F<sub>3</sub>Al...C<sub>2</sub>H<sub>4</sub>**

---

---

Al	-0.57321900	0.00000100	0.01699500
F	-0.65987200	0.00003000	1.69796600
F	-0.89243500	-1.44069000	-0.79178500
F	-0.89242700	1.44066800	-0.79182500
C	1.83840400	0.68013600	-0.07896500
H	1.79289400	1.24265400	0.85854300
H	1.90393600	1.24807900	-1.00989300
C	1.83839600	-0.68014700	-0.07895100
H	1.90392900	-1.24811000	-1.00986500
H	1.79288100	-1.24264000	0.85857200

---



---

**F<sub>3</sub>Al•••OHCH<sub>3</sub>**

---

Al	-0.62978800	0.07397100	0.05696200
F	-1.39944900	-1.43143600	0.09787300
F	-1.04847800	1.17432700	-1.14654200
F	-0.17040900	0.75126600	1.53820200
C	2.32650000	0.06294600	-0.09206000
H	2.42530600	-0.00685700	0.99758500
H	3.17786100	-0.39168800	-0.61169700
H	2.20914000	1.10765500	-0.39772600
O	1.10240600	-0.61578100	-0.52762200
H	1.16171300	-1.56957600	-0.36113400

---



---

**F<sub>3</sub>Al•••PH<sub>3</sub>**

---

Al	-0.69658800	-0.00000100	0.00000000
F	-0.96221400	-0.64801400	1.53550300
F	-0.96221700	-1.00577900	-1.32894700
F	-0.96222000	1.65379100	-0.20655500
H	2.48924300	0.75669000	0.99985300
H	2.48924400	0.48755300	-1.15523800
H	2.48924300	-1.24423800	0.15538500
P	1.83785100	0.00000100	-0.00000100

---



---

**F<sub>3</sub>Al•••O(CH<sub>3</sub>)<sub>2</sub>**

---

F	-1.31286700	-1.45874600	-0.68138800
F	-1.31286700	1.45874700	-0.68138700
F	-0.74653900	0.00000000	1.71902500
C	1.77333200	1.20871500	-0.04015700
H	1.90845900	1.23224100	1.05140900
H	2.74279300	1.20028900	-0.55673600
H	1.16019500	2.05194100	-0.37752500
O	1.05034300	0.00000000	-0.41429700
C	1.77333200	-1.20871500	-0.04015700
H	1.90845900	-1.23224100	1.05140900
H	1.16019500	-2.05194100	-0.37752500
H	2.74279300	-1.20028900	-0.55673600
Al	-0.84270500	0.00000000	0.02736200

---

---

**Cl<sub>3</sub>Al•••OH<sub>2</sub>**

---

O	0.00000100	-0.32266900	1.91278100
H	-0.78127900	-0.84203600	2.16978600
H	0.78128600	-0.84202500	2.16978900
Al	0.00000000	0.04747600	-0.04041400
Cl	-1.84009100	-0.97810100	-0.46808700
Cl	-0.00000900	2.17078800	-0.18832300
Cl	1.84010000	-0.97808500	-0.46808700

---

---

**Cl<sub>3</sub>Al•••SH<sub>2</sub>**

---

S	0.00000200	0.58326000	2.08314200
H	0.98287600	1.50297100	1.92812000
H	-0.98286800	1.50297600	1.92812000
Al	-0.00000100	-0.12639100	-0.32896900
Cl	1.84344200	-1.21127200	-0.32541900
Cl	0.00000600	1.79341400	-1.28503900
Cl	-1.84344900	-1.21126100	-0.32541900

---

---

**Cl<sub>3</sub>Al•••NH<sub>3</sub>**

---

Al	0.00000100	-0.00000100	-0.02854400
N	-0.00000900	0.00000400	1.99759000
H	-0.92428200	0.23325200	2.36834800
H	0.66411900	0.68382400	2.36836000
H	0.26012500	-0.91705900	2.36836300
Cl	2.05105900	-0.51759800	-0.40621300
Cl	-0.57727500	2.03506500	-0.40622100
Cl	-1.47377900	-1.51746900	-0.40622000

---

---

**Cl<sub>3</sub>Al•••NCH**

---

Al	0.00007500	-0.00026100	-0.26683500
H	-0.00112600	0.00394700	4.04574300
C	-0.00081800	0.00287900	2.96675300
N	-0.00048600	0.00172100	1.79537600
Cl	-1.78276800	1.12986700	-0.60831900
Cl	1.87063700	0.97824900	-0.60719100
Cl	-0.08737100	-2.10987300	-0.60478700

---

---

**Cl<sub>3</sub>Al•••CO**

---

C	-1.89163700	-0.00014400	-0.00005600
O	-3.03379300	-0.00023000	-0.00009000
Al	0.35329000	0.00002700	0.00000800
Cl	0.60855300	-1.83438200	-1.05455000
Cl	0.60827200	1.83054600	-1.06135400
Cl	0.60831600	0.00397500	2.11596000

---

---

**Cl<sub>3</sub>Al•••OCH<sub>2</sub>**

---

Al	0.24103800	0.00000000	-0.15401000
C	-1.99210200	0.00000100	1.70404600
H	-2.65843000	0.00000000	0.82630900
H	-2.40618400	0.00000200	2.72353400

---

---

O	-0.76219900	0.00000200	1.56738700
Cl	1.29754100	1.84162500	0.05024200
Cl	1.29756300	-1.84161000	0.05025700
Cl	-1.41973200	-0.00001600	-1.53056300

---

---

**Cl<sub>3</sub>Al...C<sub>2</sub>H<sub>4</sub>**

---

Al	0.00000000	-0.08274100	-0.24999100
C	0.68107300	0.57218900	2.09682800
H	1.24572900	1.43761200	1.73632500
H	1.24594500	-0.27843800	2.48434000
C	-0.68107400	0.57218500	2.09682900
H	-1.24594200	-0.27844300	2.48434000
H	-1.24573500	1.43760700	1.73632600
Cl	-0.00000400	1.90754200	-1.03354500
Cl	-1.82105600	-1.19227300	-0.37597400
Cl	1.82106000	-1.19226600	-0.37597500

---

---

**Cl<sub>3</sub>Al...OHCH<sub>3</sub>**

---

Al	0.26891400	0.06716200	-0.17807200
C	-2.13176600	-0.34624300	1.50830500
H	-2.41050000	-1.30096000	1.04621500
H	-2.48125500	-0.27226300	2.54452800
H	-2.50721900	0.49533800	0.91616100
O	-0.67100900	-0.20160400	1.50545300
H	-0.25322700	-0.88311900	2.05712700
Cl	2.24205700	-0.31687700	0.56739300
Cl	-0.60228100	-1.46746700	-1.40620700
Cl	-0.32713000	2.06541300	-0.65192400

---

---

**Cl<sub>3</sub>Al...PH<sub>3</sub>**

---

Al	-0.35474700	0.00000200	0.00000500
H	2.79455700	1.25676200	-0.09796700
H	2.79453000	-0.71321400	-1.03948300

---

H	2.79456300	-0.54360300	1.13732400
P	2.15533300	-0.00001400	-0.00003300
Cl	-0.70790400	0.91310000	-1.91051100
Cl	-0.70784500	1.19801700	1.74603500
Cl	-0.70789300	-2.11110300	0.16450800

---

**Cl<sub>3</sub>Al...O(CH<sub>3</sub>)<sub>2</sub>**

---

C	-2.03713000	-1.20406300	-0.70812100
H	-2.48430700	-1.22346700	0.29658700
H	-2.81023000	-1.17373500	-1.48761300
H	-1.36688800	-2.05717800	-0.85709500
O	-1.21918600	-0.00000100	-0.84718600
C	-2.03713200	1.20406000	-0.70812100
H	-2.48430900	1.22346200	0.29658700
H	-1.36689200	2.05717500	-0.85709500
H	-2.81023200	1.17372900	-1.48761300
Al	0.46783500	0.00000000	0.12095000
Cl	1.35961200	-1.83048600	-0.54709600
Cl	-0.28156900	0.00000000	2.14118200
Cl	1.35960800	1.83048800	-0.54709600

---

**H<sub>2</sub>FAl...OH<sub>2</sub>**

---

F	-1.06458300	-0.91493200	0.03021400
O	1.48177700	-0.24051700	-0.11216900
H	2.04429900	-0.09412600	0.66323000
H	1.24114200	-1.18385000	-0.09461400
Al	-0.36995400	0.66196200	0.00067800
H	-0.22965600	1.38292600	1.41160700
H	-0.51935500	1.44806300	-1.36361300

---

**H<sub>2</sub>FAl...SH<sub>2</sub>**

---

F	-1.46315900	1.01511700	-0.00000100
H	1.41349400	0.91690200	-0.97790100

---

H	1.41348400	0.91694000	0.97786900
Al	-0.98296700	-0.62835500	0.00000000
H	-1.04341300	-1.36684300	-1.40085600
H	-1.04342300	-1.36684400	1.40085500
S	1.57542900	-0.00422400	0.00000200

---

**H<sub>2</sub>FAl•••NH<sub>3</sub>**

---

Al	-0.35338000	0.64502100	-0.00002100
F	-1.20651300	-0.84961300	0.00015100
N	1.51597800	-0.29925200	-0.00008900
H	1.59073400	-0.90463500	-0.81994600
H	1.59086800	-0.90452000	0.81984100
H	2.32833000	0.31930200	-0.00019900
H	-0.33451400	1.42303800	1.39079300
H	-0.33470300	1.42282400	-1.39095800

---

**H<sub>2</sub>FAl•••NCH**

---

Al	-0.89005900	-0.58860200	0.00001800
F	-1.37577700	1.05149900	-0.00001000
H	3.37608300	0.50901200	-0.00002400
C	2.34136000	0.20545500	-0.00001800
N	1.21536600	-0.12387000	-0.00001200
H	-0.98950500	-1.34312800	1.39213000
H	-0.98954600	-1.34318500	-1.39206000

---

**H<sub>2</sub>FAl•••CO**

---

F	1.36011800	1.07176200	0.00006800
C	-1.32033000	-0.11513200	-0.00007900
O	-2.42501000	0.18068900	-0.00014000
Al	0.99818900	-0.59456100	0.00006300
H	1.05217600	-1.33562500	1.39655800
H	1.05235800	-1.33565800	-1.39640700

---

---

**H<sub>2</sub>FAl•••OCH<sub>2</sub>**

---

Al	0.97495600	-0.52056400	-0.00000400
F	0.92743400	1.20376100	0.00000600
C	-1.78965600	0.34695900	-0.00000400
H	-1.32619100	1.34661400	-0.00001900
H	-2.88593400	0.23600800	0.00000500
O	-1.08709500	-0.67147500	0.00000600
H	1.31274900	-1.17955800	1.40078600
H	1.31273600	-1.17954500	-1.40080200

---

---

**H<sub>2</sub>FAl•••C<sub>2</sub>H<sub>4</sub>**

---

Al	-0.82187300	0.65222600	0.00000000
C	1.55952200	-0.16803700	0.67955400
H	1.13782600	-1.00554400	1.24268200
H	2.00353100	0.65364200	1.24673700
C	1.55952200	-0.16803800	-0.67955400
H	2.00353100	0.65364100	-1.24673800
H	1.13782600	-1.00554500	-1.24268100
F	-1.40918300	-0.95164100	0.00000000
H	-0.81498800	1.40303900	1.39443400
H	-0.81498800	1.40303800	-1.39443500

---

---

**H<sub>2</sub>FAl•••OHCH<sub>3</sub>**

---

Al	0.99025000	-0.51626700	0.18126900
F	1.14975100	1.15428000	-0.19772600
C	-1.81629200	0.41700700	0.22319000
H	-1.49195800	1.39284600	-0.15872400
H	-2.85964300	0.20125600	-0.03793300
H	-1.68077400	0.37111700	1.30932600
O	-0.96398500	-0.64196800	-0.32211100
H	-1.07243200	-0.67221300	-1.28521900
H	0.90543800	-0.82343600	1.73693000
H	1.58799300	-1.51292000	-0.90359100

---

---

<b>H<sub>2</sub>FAl•••PH<sub>3</sub></b>			
Al	1.02879100	-0.62547000	0.00000000
F	1.51650100	1.01757400	0.00000000
H	-1.95502800	0.86848600	-1.07644700
H	-1.95502900	0.86848500	1.07644800
H	-2.56630300	-0.89343000	-0.00000100
P	-1.51792200	0.05937400	0.00000000
H	1.11120300	-1.38060900	1.39443000
H	1.11120200	-1.38060900	-1.39443000

---



---

<b>H<sub>2</sub>FAl•••O(CH<sub>3</sub>)<sub>2</sub></b>			
F	1.94891400	0.66309100	-0.23224700
C	-1.89017300	-0.79674000	-0.07767700
H	-2.08184000	-0.87494800	1.00410800
H	-2.76540200	-0.37900900	-0.59581500
H	-1.63457500	-1.77839600	-0.49566700
O	-0.75260100	0.06694000	-0.31757100
C	-0.98056700	1.41122800	0.18485600
H	-1.14771900	1.37582700	1.27318100
H	-0.07723500	1.98417600	-0.05025700
H	-1.85888400	1.82911200	-0.32790400
Al	1.02908300	-0.72655500	0.17393000
H	0.81070100	-0.93840700	1.74214500
H	1.08190100	-1.96340300	-0.82315900

---

## 9. Gallium Bonded Complexes

---

<b>HF<sub>2</sub>Ga•••OH<sub>2</sub></b>			
F	-1.47791200	-0.38555400	-0.67635900
O	0.00087500	1.76423100	0.12730800
H	0.77425600	1.91821300	-0.44355900

---

---

H	-0.77230500	1.91895100	-0.44363000
H	-0.00038300	-0.79230500	1.79728200
Ga	-0.00016500	-0.32922500	0.33051400
F	1.47752800	-0.38697100	-0.67636200

---

---

**HF<sub>2</sub>Ga•••SH<sub>2</sub>**

---

F	-0.77854600	1.47219100	-0.65980100
H	1.81212500	-0.98235000	-0.84475800
H	1.81213500	0.98235700	-0.84475200
H	-1.01460200	-0.00001700	1.83419500
Ga	-0.64045300	0.00000000	0.33877600
F	-0.77854200	-1.47219200	-0.65980300
S	1.95363700	0.00000000	0.07685500

---

---

**HF<sub>2</sub>Ga•••NH<sub>3</sub>**

---

F	-0.55777500	1.47961100	-0.62407600
N	1.79069700	-0.00000300	-0.10173300
H	1.95222100	0.82635400	-0.68192200
H	1.95221600	-0.82634900	-0.68193700
H	2.47623100	-0.00001200	0.65336300
H	-0.56408600	0.00001300	1.86708000
Ga	-0.26811200	0.00000000	0.34802900
F	-0.55777900	-1.47961000	-0.62407500

---

---

**HF<sub>2</sub>Ga•••NCH**

---

F	-0.74322200	1.47501700	-0.65600200
H	3.81595200	-0.00000600	-0.34332500
C	2.76296900	-0.00000300	-0.11082600
N	1.61749300	-0.00000500	0.14160200
H	-0.87446400	0.00000400	1.83336000
Ga	-0.56334300	0.00000000	0.32231500
F	-0.74323500	-1.47501200	-0.65600300

---



---

**HF<sub>2</sub>Ga...CO**

---

F	-0.69499100	1.47364100	-0.66626800
C	1.74084100	-0.00000400	0.14536800
O	2.86261500	-0.00000100	-0.07543700
H	-0.97867700	0.00000000	1.82110700
Ga	-0.64056100	0.00000100	0.31945200
F	-0.69499700	-1.47364100	-0.66626800

---

---

**HF<sub>2</sub>Ga...OCH<sub>2</sub>**

---

F	-1.47791200	-0.38555400	-0.67635900
O	0.00087500	1.76423100	0.12730800
H	0.77425600	1.91821300	-0.44355900
H	-0.77230500	1.91895100	-0.44363000
H	-0.00038300	-0.79230500	1.79728200
Ga	-0.00016500	-0.32922500	0.33051400
F	1.47752800	-0.38697100	-0.67636200

---

---

**HF<sub>2</sub>Ga...C<sub>2</sub>H<sub>4</sub>**

---

C	1.79422600	0.57399300	0.60971100
H	1.52290700	0.19605300	1.59907800
H	1.85425400	1.65649700	0.47760100
C	2.04496800	-0.27967400	-0.41821500
H	2.33507100	0.09180000	-1.40472200
H	1.99845000	-1.36284200	-0.27103200
F	-0.59459500	-1.40548100	0.84678400
H	-0.69343600	-0.34778100	-1.85583400
Ga	-0.51878300	-0.08617700	-0.34489300
F	-0.95764200	1.48013300	0.37517400

---

---

**HF<sub>2</sub>Ga...OHCH<sub>3</sub>**

---

F	1.17197300	-1.20620300	-0.77354800
C	-2.36437000	0.00989500	-0.13307100
H	-2.15774200	0.43714100	-1.12148200

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H	-3.25279100	-0.63377800	-0.14363500
H	-2.48703900	0.81427700	0.59909300
O	-1.22197200	-0.78169600	0.32561700
H	-1.06074000	-1.50492600	-0.30637900
H	1.21048800	0.25949700	1.74403800
Ga	0.64412800	0.11809100	0.31786500
F	0.13267900	1.55744400	-0.60778000

---

---

**HF<sub>2</sub>Ga...PH<sub>3</sub>**

---

F	-0.82524700	1.47830700	-0.65181000
H	2.70268900	1.08269400	0.42741000
H	2.20847200	0.00000500	-1.38451300
H	2.70269400	-1.08269800	0.42740100
P	1.90152600	-0.00000200	-0.00525500
H	-1.05158900	0.00001000	1.83269300
Ga	-0.65260200	0.00000000	0.33898100
F	-0.82525300	-1.47830600	-0.65180900

---

---

**HF<sub>2</sub>Ga...O(CH<sub>3</sub>)<sub>2</sub>**

---

F	-1.17076400	-1.50217800	-0.55217500
F	-1.17076400	1.50217800	-0.55217600
C	1.95015200	1.20730500	-0.00827700
H	2.24488800	1.24529400	1.05302500
H	2.84206000	1.21070900	-0.65167300
H	1.28853500	2.04357500	-0.26224200
O	1.19505300	0.00000000	-0.27070600
C	1.95015200	-1.20730500	-0.00827700
H	2.24488800	-1.24529400	1.05302500
H	1.28853500	-2.04357500	-0.26224200
H	2.84206000	-1.21070900	-0.65167300
H	-0.78272100	0.00000000	1.87526700
Ga	-0.76957200	0.00000000	0.32421400

---

---

**H<sub>2</sub>FGa•••OH<sub>2</sub>**

---

F	0.32798000	1.47439900	0.02551800
O	-1.72187500	-0.14789300	-0.11294700
H	-2.19480300	-0.40947000	0.69095200
H	-1.69166900	0.82839600	-0.09081800
H	0.60204700	-0.96344200	1.42304100
H	0.82237300	-0.91493700	-1.38849100
Ga	0.42855600	-0.34280600	0.00126600

---

---

**H<sub>2</sub>FGa•••SH<sub>2</sub>**

---

F	-0.91411900	1.42661800	0.00000000
H	1.76191500	0.86535200	-0.97351400
H	1.76191300	0.86533000	0.97353100
H	-0.94447300	-1.00836500	-1.40985700
H	-0.94444800	-1.00835300	1.40986700
S	1.88794400	-0.06557500	-0.00000200
Ga	-0.76177200	-0.37110700	0.00000000

---

---

**H<sub>2</sub>FGa•••NH<sub>3</sub>**

---

F	-0.76455400	1.36239200	0.00002500
N	1.73084100	0.19541800	-0.00005900
H	1.62376000	1.21362400	0.00007400
H	2.27200100	-0.06339200	-0.82516300
H	2.27215100	-0.06359900	0.82488200
H	-0.52330600	-1.07986500	-1.39936900
H	-0.52319900	-1.07985500	1.39941100
Ga	-0.33407400	-0.40504400	0.00001100

---

---

**H<sub>2</sub>FGa•••NCH**

---

F	-0.86747900	1.43397200	0.00002800
H	3.73617300	0.38378300	-0.00004800

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---

C	2.68854800	0.12907500	-0.00003700
N	1.54694200	-0.14729200	-0.00002500
H	-0.87366200	-1.00728600	1.40323500
H	-0.87369900	-1.00728200	-1.40321900
Ga	-0.68198000	-0.35543100	0.00000600

---

---

**H<sub>2</sub>FGa•••CO**

---

F	0.78269400	1.44703300	0.00001900
C	-1.66948700	-0.15681500	-0.00009600
O	-2.78905600	0.08092400	-0.00019200
H	0.92579200	-0.98796000	1.40716000
H	0.92590800	-0.98801800	-1.40700600
Ga	0.75591700	-0.34689700	0.00005800

---

---

**H<sub>2</sub>FGa•••OCH<sub>2</sub>**

---

F	-0.36126000	1.50075300	-0.00001000
C	2.16908800	0.19790200	0.00000800
H	1.81558800	1.24210400	0.00003300
H	3.24836600	-0.03046800	0.00000000
O	1.36031800	-0.73783700	-0.00001300
H	-1.14306300	-0.79865200	-1.41283400
H	-1.14302900	-0.79863600	1.41285600
Ga	-0.75560000	-0.27115600	0.00000300

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---

**H<sub>2</sub>FGa•••C<sub>2</sub>H<sub>4</sub>**

---

C	-0.86635500	-1.61762100	0.67993600
H	-1.52737000	-0.95016800	1.23945400
H	-0.22806900	-2.29990900	1.24695200
C	-0.86635500	-1.61762100	-0.67993600
H	-0.22806900	-2.29990900	-1.24695200
H	-1.52737000	-0.95016800	-1.23945400
F	-0.86635500	1.42351800	0.00000000
H	1.27673100	0.24572200	1.40211000

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H	1.27673100	0.24572200	-1.40211000
Ga	0.61777000	0.40672600	0.00000000

---

---

**H<sub>2</sub>FGa•••OHCH<sub>3</sub>**

---

F	0.65955400	1.48284800	-0.11605500
C	-2.17124000	0.16653400	0.35991000
H	-1.81670000	1.17458700	0.61272000
H	-3.17680300	0.19367400	-0.07929700
H	-2.16512900	-0.47506800	1.24753000
O	-1.25028300	-0.46062800	-0.58868100
H	-1.25571900	0.07962200	-1.39600700
H	0.56658400	-0.76800400	1.57002200
H	1.52480500	-1.01037500	-1.07774700
Ga	0.75537700	-0.31787900	0.08765400

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---

**H<sub>2</sub>FGa•••PH<sub>3</sub>**

---

F	1.67845400	0.19262600	0.00000000
H	-0.24248900	-2.38677500	1.07640000
H	-0.24248900	-2.38677500	-1.07640000
H	-2.09434700	-2.14570900	0.00000000
P	-0.77170600	-1.63594600	0.00000000
H	-0.47558400	1.36555400	-1.40176700
H	-0.47558400	1.36555400	1.40176700
Ga	0.00000000	0.87076500	0.00000000

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**H<sub>2</sub>FGa•••O(CH<sub>3</sub>)<sub>2</sub>**

---

F	1.49695000	1.20901400	-0.24314300
C	-2.08216600	-0.91771700	-0.07782600
H	-2.16042300	-1.06839000	1.01141200
H	-3.05797400	-0.62452300	-0.49317000
H	-1.72614200	-1.83428700	-0.56545600

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O	-1.11457200	0.11327700	-0.37084900
C	-1.48936400	1.38297500	0.22263200
H	-1.56643500	1.27333200	1.31690900
H	-0.69285500	2.08828500	-0.03700300
H	-2.45533200	1.69683200	-0.20039900
H	0.68256500	-0.72522500	1.62088300
H	1.13358300	-1.49929300	-1.03547100
Ga	0.86181400	-0.44792300	0.08608200

---

---

**H<sub>2</sub>ClGa•••OH<sub>2</sub>**

---

Cl	1.62254400	0.27758800	0.01138500
O	-1.22091700	1.44269800	-0.10029200
H	-1.59382800	1.73260200	0.74672200
H	-0.39681400	1.95348400	-0.20148600
H	-0.96396300	-0.95879800	1.42209300
H	-0.86688000	-1.14374300	-1.38198500
Ga	-0.45143300	-0.57561700	0.00075700

---

---

**H<sub>2</sub>ClGa•••SH<sub>2</sub>**

---

Cl	-1.50024500	1.07043200	0.00000100
H	1.59696000	1.29796100	-0.97552900
H	1.59705400	1.29791600	0.97559900
H	-0.18966600	-1.46800000	-1.40587200
H	-0.18970300	-1.46803200	1.40586000
S	2.01636700	0.45921400	-0.00000400
Ga	-0.30878600	-0.81305200	0.00000000

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---

**H<sub>2</sub>ClGa•••NH<sub>3</sub>**

---

Cl	-1.63214100	0.37453200	-0.00000100
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N	1.35379800	1.32038700	-0.00000400
H	1.02950900	1.83842200	-0.81892300
H	2.37460800	1.33582500	-0.00003600
H	1.02956200	1.83837400	0.81896700
H	0.79383300	-1.16647700	-1.39575000
H	0.79382800	-1.16642500	1.39577600
Ga	0.39511200	-0.58998300	0.00000000

---

---

**H<sub>2</sub>ClGa•••NCH**

---

Cl	1.35009900	1.17207400	0.00000000
H	-3.65201600	1.33649400	0.00000100
C	-2.73426800	0.77032100	0.00000000
N	-1.73193000	0.15788300	0.00000000
H	0.22073900	-1.45341100	-1.39990800
H	0.22074000	-1.45339900	1.39991400
Ga	0.28348300	-0.77684000	0.00000000

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---

**H<sub>2</sub>ClGa•••CO**

---

Cl	1.27550600	1.23669200	0.00029300
C	-1.84027700	0.13739500	-0.00019700
O	-2.85169000	0.67317800	-0.00023600
H	0.29092800	-1.45021000	1.40150300
H	0.29129200	-1.44987600	-1.40178800
Ga	0.37385000	-0.78495100	-0.00005200

---

---

**H<sub>2</sub>ClGa•••OCH<sub>2</sub>**

---

Cl	-1.15795400	1.26834700	-0.00001500
C	2.11963900	0.94574900	0.00001600
H	1.39687700	1.77939200	0.00003600
H	3.20357600	1.15022500	0.00001000
O	1.73250900	-0.22742500	-0.00000800
H	-0.38570700	-1.47477300	-1.40888000
H	-0.38568900	-1.47473700	1.40890700

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Ga	-0.34586200	-0.81926100	0.00000500
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**H<sub>2</sub>ClGa•••C<sub>2</sub>H<sub>4</sub>**

---

C	-0.82250100	-1.83427400	0.68055300
H	-1.46135700	-1.14746200	1.24261700
H	-0.20950400	-2.54036100	1.24618600
C	-0.82250100	-1.83427400	-0.68055300
H	-0.20950400	-2.54036100	-1.24618600
H	-1.46135700	-1.14746200	-1.24261700
Cl	-0.82250100	1.60619600	0.00000000
H	1.42181600	-0.17196900	1.39701300
H	1.42181600	-0.17196900	-1.39701300
Ga	0.78550400	0.07824300	0.00000000

---

---

**H<sub>2</sub>ClGa•••OHCH<sub>3</sub>**

---

Cl	1.34290500	1.17648700	-0.01166600
C	-2.19717400	0.78183700	0.37074200
H	-1.52025200	1.50685600	0.84339200
H	-3.05528500	1.28386100	-0.09403900
H	-2.54043100	0.04465300	1.10406800
O	-1.47813600	0.02174200	-0.65199700
H	-1.17328900	0.65673600	-1.32292800
H	-0.14753300	-1.19464500	1.51146800
H	0.72534500	-1.74086100	-1.11202700
Ga	0.31903900	-0.82005900	0.07290000

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---

**H<sub>2</sub>ClGa•••PH<sub>3</sub>**

---

Cl	1.75773100	-0.49073500	0.00000000
H	-1.35173500	-2.04195100	1.07999400
H	-1.35173500	-2.04195100	-1.07999400
H	-2.99038000	-1.12990800	0.00000000
P	-1.57288300	-1.15555300	0.00000000
H	-0.29716600	1.51867400	-1.39816900

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H	-0.29716600	1.51867400	1.39816900
Ga	0.00000000	0.89846000	0.00000000

---

**H<sub>2</sub>ClGa•••O(CH<sub>3</sub>)<sub>2</sub>**

---

C	-2.49034900	-0.39856100	-0.31373000
H	-2.72140800	-0.67115800	0.72931500
H	-3.30875000	0.19940900	-0.74119100
H	-2.32311000	-1.29883800	-0.91775700
O	-1.26725900	0.37226800	-0.36813200
C	-1.38732800	1.60502300	0.38761100
H	-1.58472800	1.37426600	1.44726700
H	-0.43110300	2.12857100	0.27886600
H	-2.20981600	2.19881000	-0.03802900
H	0.08066500	-0.96335600	1.67597800
H	0.30056200	-1.87929500	-0.95579000
Ga	0.40575900	-0.78825800	0.15320700
Cl	1.94254700	0.77239300	-0.21919400

10. Indium Bonded Complexes

---

**HF<sub>2</sub>In•••OH<sub>2</sub>**

---

O	0.00388400	-1.90239700	-0.48866400
H	0.77540900	-2.11182000	0.06901700
H	-0.76679000	-2.11495900	0.06900700
H	-0.00285400	1.40465000	-1.56265400
In	-0.00079100	0.38847100	-0.21415800
F	-1.60313900	-0.05847100	0.87931200
F	1.60335400	-0.05195100	0.87932100

---

**HF<sub>2</sub>In•••SH<sub>2</sub>**

---

F	-0.46489300	1.59913300	0.89977400
H	2.00556700	0.98181800	0.75228700
H	2.00553700	-0.98174700	0.75234100

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---

H	-1.28401700	-0.00002000	-1.81856400
F	-0.46485600	-1.59914200	0.89977200
S	2.19091100	0.00000700	-0.16474400
In	-0.60028400	-0.00000200	-0.27032800

---

---

**HF<sub>2</sub>In•••NH<sub>3</sub>**

---

F	0.24983200	1.61512000	-0.89355500
N	-1.99139200	-0.00023800	0.11776300
H	-2.19371200	0.82506700	-0.45182000
H	-2.62343000	-0.00032200	0.91751500
H	-2.19352100	-0.82557800	-0.45183900
H	1.02418900	0.00010300	1.81630200
F	0.25024200	-1.61506600	-0.89355300
In	0.31480700	0.00003900	0.27407100

---

---

**HF<sub>2</sub>In•••NCH**

---

F	-0.53254400	1.61086200	-0.87830600
H	4.08125200	-0.00001700	-0.31220300
C	3.03096600	-0.00001600	-0.06701600
N	1.88758700	-0.00001600	0.20049000
H	-0.97501100	0.00002500	1.90016200
F	-0.53259200	-1.61085900	-0.87830300
In	-0.50854900	0.00000300	0.26980000

---

---

**HF<sub>2</sub>In•••CO**

---

F	-0.41586000	1.60516700	0.87781400
C	2.02935800	-0.00000100	-0.22038000
O	3.15386000	-0.00000200	-0.00958200
H	-1.14863900	0.00005700	-1.85125800
F	-0.41586700	-1.60516000	0.87781200
In	-0.58720100	-0.00000200	-0.25613100

---

---

**HF<sub>2</sub>In•••OCH<sub>2</sub>**

---

F	0.05283600	1.57345800	0.86935800
C	2.43028800	-0.07927300	0.16022300
H	2.06241000	0.26341400	1.14132300
H	3.50960400	-0.25165800	0.01064200
O	1.65394800	-0.26620800	-0.78451800
H	-1.56519500	0.14845500	-1.59542500
F	-0.41190900	-1.51136800	0.99558800
In	-0.58343800	0.03849600	-0.22502500

---

---

**HF<sub>2</sub>In•••C<sub>2</sub>H<sub>4</sub>**

---

C	2.25617200	0.27155100	-0.47180100
H	2.22309500	1.34679500	-0.26995100
H	2.50973800	-0.05490600	-1.48455300
C	2.03989600	-0.62756600	0.52551400
H	2.08884600	-1.70409900	0.34525600
H	1.81062100	-0.29172800	1.54088600
F	-0.32819900	1.47728400	1.11565300
H	-0.86280200	0.40322500	-1.90421900
F	-0.79576400	-1.66380100	0.58972800
In	-0.47816800	0.08398900	-0.28363500

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---

**HF<sub>2</sub>In•••OHCH<sub>3</sub>**

---

F	-0.01883800	1.62192800	-0.84291200
C	-2.60383200	0.13160800	-0.01848400
H	-2.36216600	0.56850800	-0.99543200
H	-3.52080000	-0.47047000	-0.05907800
H	-2.71204100	0.92889900	0.72469800
O	-1.50461700	-0.71148300	0.44771700
H	-1.37179400	-1.43557200	-0.19413200
H	1.52347600	0.23177500	1.65879900
F	0.65282600	-1.52273400	-0.95445700
In	0.62035400	0.08543600	0.23613500

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---

**HF<sub>2</sub>In•••PH<sub>3</sub>**

---

F	-0.54205400	1.61297500	0.88488500
H	2.48337200	-0.00004200	1.31054600
H	2.97227200	1.08024400	-0.49860300
H	2.97226900	-1.08023900	-0.49865600
P	2.16593100	-0.00000700	-0.06673700
H	-1.27238300	0.00000900	-1.83581400
F	-0.54208000	-1.61296900	0.88488700
In	-0.60994500	0.00000100	-0.27355900

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---

**HF<sub>2</sub>In•••O(CH<sub>3</sub>)<sub>2</sub>**

---

F	1.14968400	1.69726200	0.16603800
C	-2.30527600	-0.90753500	-0.37400100
H	-2.21481400	-1.33664000	0.63525600
H	-3.34602200	-0.62377200	-0.59085500
H	-1.95171500	-1.62420000	-1.12704300
O	-1.46547200	0.26968900	-0.48565900
C	-1.89813200	1.30076300	0.44812600
H	-1.85624300	0.90549900	1.47485800
H	-1.19997300	2.13707200	0.33390400
H	-2.92420600	1.59815500	0.18537200
H	1.31252100	-1.07099100	-1.56481000
In	0.74268700	-0.20464300	-0.22244800
F	0.26509300	-1.08331900	1.49993900

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---

**H<sub>2</sub>FIn•••OH<sub>2</sub>**

---

F	-0.72139100	1.54297100	0.02330600
O	-1.79646200	-0.78826700	-0.11744400
H	-2.21377200	-1.18467200	0.66031300
H	-1.98538400	0.17742100	-0.05986400
H	0.90354200	-0.55800500	1.59727100
H	1.07451600	-0.40292300	-1.56656500

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In	0.47112900	-0.11453900	0.00201300
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**H<sub>2</sub>FIn•••SH<sub>2</sub>**

---

F	-0.38794300	1.73929000	-0.00001300
H	2.07910700	0.73681000	-0.96886800
H	2.07913400	0.73674600	0.96891000
H	-0.98108500	-0.83534900	-1.58109100
H	-0.98106600	-0.83532400	1.58111300
S	2.19052600	-0.20137000	-0.00001100
In	-0.68883700	-0.24968500	0.00000500

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**H<sub>2</sub>FIn•••NH<sub>3</sub>**

---

F	-0.10639600	1.74296800	-0.00006500
N	-1.95138300	-0.36755200	0.00008200
H	-2.10033400	0.64718300	0.00004000
H	-2.41250100	-0.75348500	0.82382500
H	-2.41256500	-0.75356400	-0.82358700
H	0.84639200	-0.75241300	1.57227100
H	0.84628700	-0.75253600	-1.57227000
In	0.40510100	-0.21936800	-0.00000500

---

---

**H<sub>2</sub>FIn•••NCH**

---

F	-0.45904800	1.74211200	-0.00013700
H	4.05287900	0.26485700	-0.00004100
C	3.00298100	0.01897200	-0.00001900
N	1.85786900	-0.24777200	0.00000500
H	-0.85754900	-0.88165200	1.57400300
H	-0.85756700	-0.88191100	-1.57384800
In	-0.59651600	-0.25632100	0.00002500

---

---

**H<sub>2</sub>FIn•••CO**

---

F	0.22308200	1.71656900	0.00003400
---	------------	------------	------------

---

C	-2.00307200	-0.30093900	-0.00014900
O	-3.12800200	-0.08599000	-0.00021000
H	0.95200400	-0.82496700	1.57817800
H	0.95227900	-0.82491900	-1.57806000
In	0.67613100	-0.23072800	0.00004400

---

**H<sub>2</sub>FIn...OCH<sub>2</sub>**

---

F	0.11526200	1.69634800	-0.00000300
C	2.48019800	0.04704300	-0.00000300
H	2.17874400	1.10859700	-0.00000600
H	3.54819300	-0.23485700	-0.00000600
O	1.62409200	-0.84612400	-0.00000300
H	-1.09895800	-0.64106900	-1.58523100
H	-1.09895000	-0.64106500	1.58523800
In	-0.66204700	-0.17085700	0.00000100

---

**H<sub>2</sub>FIn...C<sub>2</sub>H<sub>4</sub>**

---

C	-1.16910200	-1.77006200	0.67961500
H	-1.77488900	-1.04849200	1.23523700
H	-0.58897800	-2.50228600	1.24786800
C	-1.16910200	-1.77006200	-0.67961500
H	-0.58897800	-2.50228600	-1.24786800
H	-1.77488900	-1.04849200	-1.23523700
F	-1.16910200	1.35675500	0.00000000
H	1.20707300	0.16912400	1.57263100
H	1.20707300	0.16912400	-1.57263100
In	0.54826000	0.32231100	0.00000000

---

**H<sub>2</sub>FIn...OHCH<sub>3</sub>**

---

F	0.29243100	1.74034200	0.17128100
C	-2.60322000	-0.30615800	0.27407800
H	-2.34458100	-0.07298000	1.31792900
H	-3.53570900	0.20153300	-0.00868300

---

H	-2.72499700	-1.38942200	0.15597800
O	-1.53712000	0.09387400	-0.62375500
H	-1.34934400	1.04803700	-0.47561800
H	0.45971800	-1.02927000	1.53055300
H	1.53344000	-0.60556500	-1.42156300
In	0.67848700	-0.25978500	0.01439700

---

**H<sub>2</sub>FIn•••PH<sub>3</sub>**

---

F	1.70534200	-0.31502300	0.00000000
H	-0.18588000	-2.64024000	1.07256200
H	-0.18588000	-2.64024000	-1.07256200
H	-2.05116200	-2.64179500	0.00000000
P	-0.80753900	-1.95775100	0.00000000
H	-0.40603100	1.30418100	-1.57445800
H	-0.40603100	1.30418100	1.57445800
In	0.00000000	0.76562000	0.00000000

---

**H<sub>2</sub>FIn•••O(CH<sub>3</sub>)<sub>2</sub>**

---

F	1.07164100	1.66279800	-0.13437000
C	-2.34018700	-1.04221100	-0.01481400
H	-2.39764000	-1.16576400	1.07975200
H	-3.34301200	-0.84251000	-0.42384000
H	-1.92673000	-1.94866500	-0.47667300
O	-1.45814000	0.04490500	-0.35231800
C	-1.94533900	1.30638600	0.16975700
H	-2.05774000	1.23851300	1.26481000
H	-1.19120600	2.05812200	-0.08834400
H	-2.91657200	1.53242500	-0.29705100
H	0.68163500	-0.78330400	1.69007600
H	1.23677300	-1.18718700	-1.38126700
In	0.80914300	-0.32267600	0.03532100

---

**H<sub>2</sub>ClIn•••OH<sub>2</sub>**

---

Cl	1.88645800	-0.16968700	0.01027800
O	-0.31749700	2.02363800	-0.10836000
H	-0.56450300	2.52600500	0.68239900
H	0.65917600	2.03345100	-0.12146600
H	-1.17641700	-0.47831500	1.59161100
H	-1.14835500	-0.70787000	-1.55474100
In	-0.55713700	-0.34036100	0.00192500

**H<sub>2</sub>ClIn•••SH<sub>2</sub>**

Cl	-1.14547400	1.63975300	0.00000100
H	1.91223400	1.21476200	-0.97210800
H	1.91223700	1.21476100	0.97210300
H	-0.41436200	-1.33795900	-1.57636800
H	-0.41435700	-1.33795900	1.57637000
S	2.27810700	0.34708400	-0.00000300
In	-0.40760000	-0.67719900	0.00000100

**H<sub>2</sub>ClIn•••NH<sub>3</sub>**

Cl	1.91876000	0.17021300	-0.00004900
N	-0.84330300	1.89899100	0.00007900
H	0.11639900	2.25709000	0.00000200
H	-1.31332100	2.27750300	0.82336800
H	-1.31347900	2.27755500	-0.82309500
H	-0.99093200	-0.88096300	1.56687300
H	-0.99102000	-0.88087000	-1.56687000
In	-0.45354000	-0.43340500	0.00000000

**H<sub>2</sub>ClIn•••NCH**

Cl	-1.06679800	1.66625000	0.00000000
H	3.96142300	1.18092300	0.00000400
C	3.01349000	0.66666400	0.00000100
N	1.97748600	0.11045700	-0.00000300
H	-0.36782800	-1.32678000	1.56938200



---

H	-0.36783200	-1.32678700	-1.56937800
In	-0.34721500	-0.64544500	0.00000000

---

---

**H<sub>2</sub>ClIn•••CO**

---

Cl	0.80073900	1.77741400	0.00000000
C	-2.13106900	-0.05237300	-0.00000600
O	-3.20448500	0.34719600	0.00000100
H	0.53653500	-1.28087500	1.57125900
H	0.53657500	-1.28087900	-1.57125400
In	0.48442100	-0.61464500	0.00000000

---

---

**H<sub>2</sub>ClIn•••OCH<sub>2</sub>**

---

Cl	-0.23288600	1.90907200	-0.00000500
C	2.57854700	0.05764700	-0.00000200
H	2.25314500	1.11282500	-0.00000100
H	3.65550300	-0.18731300	-0.00000300
O	1.75171400	-0.85991700	-0.00000200
H	-0.92073600	-1.07436900	-1.57890600
H	-0.92072600	-1.07436100	1.57891500
In	-0.60394100	-0.50403200	0.00000200

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---

**H<sub>2</sub>ClIn•••C<sub>2</sub>H<sub>4</sub>**

---

C	-1.13510700	-1.91190200	0.67997900
H	-1.72074000	-1.17628800	1.23909300
H	-0.57641600	-2.66139400	1.24712700
C	-1.13510700	-1.91190200	-0.67997900
H	-0.57641600	-2.66139400	-1.24712700
H	-1.72074000	-1.17628800	-1.23909300
Cl	-1.13510700	1.63165600	0.00000000
H	1.34615200	-0.18809400	1.56708500
H	1.34615200	-0.18809400	-1.56708500
In	0.71061400	0.06645300	0.00000000

---

---

**H<sub>2</sub>ClIn•••OHCH<sub>3</sub>**

---

Cl	1.01663800	1.70399800	0.05344200
C	-2.61363700	0.40540400	0.35702300
H	-2.17341800	0.91350800	1.22748600
H	-3.46378400	0.97894500	-0.03590100
H	-2.94176100	-0.60179100	0.63790800
O	-1.61640200	0.23552500	-0.69084800
H	-1.26208200	1.12216500	-0.89517100
H	-0.07938000	-1.20096100	1.58091800
H	1.01701300	-1.44897100	-1.36809000
In	0.41293100	-0.67443800	0.02712200

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---

**H<sub>2</sub>ClIn•••PH<sub>3</sub>**

---

Cl	1.78362500	-0.84039400	0.00000000
H	-1.28601300	-2.36851200	1.07452000
H	-1.28601300	-2.36851200	-1.07452000
H	-3.01957400	-1.66930800	0.00000000
P	-1.60972400	-1.50594000	0.00000000
H	-0.29208300	1.44102300	-1.56931100
H	-0.29208300	1.44102300	1.56931100
In	0.00000000	0.82449100	0.00000000

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---

**H<sub>2</sub>ClIn•••O(CH<sub>3</sub>)<sub>2</sub>**

---

C	-2.71364200	-0.35150700	-0.25424600
H	-2.90564600	-0.61894700	0.79861500
H	-3.57285300	0.20140400	-0.66443400
H	-2.53471800	-1.25585000	-0.85054500
O	-1.52697000	0.46194200	-0.35788700
C	-1.67358200	1.70226300	0.37541400
H	-1.83407600	1.48904100	1.44561400
H	-0.74131100	2.26033300	0.23200300
H	-2.53023700	2.25979800	-0.03376800
H	0.10049100	-1.02664500	1.73578700

---

H	0.42702500	-1.72906600	-1.30079900
In	0.43610200	-0.71219800	0.07774500
Cl	1.80949400	1.26573900	-0.17858200

### 11. Thallium Bonded Complexes

<b>HF<sub>2</sub>Tl•••OH<sub>2</sub></b>			
F	1.10548800	0.53893500	1.42485100
O	1.93141600	-0.78715900	-0.65767500
H	2.57379200	-0.39392600	-1.26463900
H	2.17955400	-0.46446700	0.23777700
H	-0.68969800	1.34157300	-1.22579400
F	-0.95918300	-1.58276200	0.55219000
Tl	-0.25718200	0.18776000	-0.12690500

<b>HF<sub>2</sub>Tl•••SH<sub>2</sub></b>			
F	0.08727100	1.54933600	1.10984400
H	-2.16173200	-0.97718300	0.63845600
H	-2.16173500	0.97718600	0.63845100
F	0.08727300	-1.54933600	1.10984400
H	1.32204800	0.00000100	-1.61666700
S	-2.38208800	-0.00000100	-0.27743600
Tl	0.48819700	0.00000000	-0.18763500

<b>HF<sub>2</sub>Tl•••NH<sub>3</sub></b>			
F	0.27168300	1.57369700	1.05958500
N	2.04300900	-0.00000300	-0.52725000
H	2.30110800	0.82522000	0.02019200
H	2.56575300	0.00000600	-1.40159500
H	2.30111100	-0.82523100	0.02018200
H	-1.45256000	0.00004000	-1.35414000
F	0.27168100	-1.57368200	1.05959300
Tl	-0.30749100	-0.00000200	-0.15637600

<b>HF<sub>2</sub>Tl•••NCH</b>			
F	0.16090700	1.55621400	1.11097200

---

H	-4.25472200	-0.00002300	0.26142600
C	-3.22030300	-0.00002700	-0.04286300
N	-2.09182300	-0.00002400	-0.37456200
H	1.03766200	0.00005300	-1.73003100
F	0.16099500	-1.55624500	1.11094000
Tl	0.42326600	0.00000700	-0.19320400

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---

**HF<sub>2</sub>Tl...CO**

---

F	-0.03778900	1.54727600	1.07792800
C	2.26320200	-0.00000800	-0.36199700
O	3.38340600	-0.00000300	-0.12266600
H	-1.19147800	0.00000700	-1.67044900
F	-0.03780600	-1.54727600	1.07792800
Tl	-0.47869900	0.00000100	-0.17998700

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---

**HF<sub>2</sub>Tl...OCH<sub>2</sub>**

---

F	0.22497400	1.50218300	1.07263500
C	2.61376600	-0.00001200	0.01083500
H	2.25223000	-0.00006800	1.05182400
H	3.70038600	0.00000600	-0.18749100
O	1.82597300	0.00003000	-0.94186600
H	-1.55873000	0.00003400	-1.38492700
F	0.22495900	-1.50223700	1.07256800
Tl	-0.47819300	0.00000400	-0.13970800

---

---

**HF<sub>2</sub>Tl...C<sub>2</sub>H<sub>4</sub>**

---

C	2.25073800	0.68846800	0.31061900
H	2.03431900	0.58187800	1.37680500
H	2.33435900	1.70052200	-0.09288700
C	2.40628100	-0.40705500	-0.47940600
H	2.64154500	-0.31151900	-1.54354100
H	2.33617200	-1.41264100	-0.05353000
F	-0.04444900	-1.15196700	1.52466400

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---

H	-0.88916000	-0.62437200	-1.68656000
Tl	-0.38711600	-0.09157800	-0.19840900
F	-0.51588100	1.79590800	0.59572900

---

---

**HF<sub>2</sub>Tl•••OHCH<sub>3</sub>**

---

F	0.21496800	1.54090800	1.02767000
C	2.80578100	0.27726900	-0.12619300
H	2.54128300	0.77974200	0.81324700
H	3.74778300	-0.28007100	-0.03112600
H	2.89562200	1.01791800	-0.92939600
O	1.74648900	-0.63757500	-0.52963200
H	1.61235400	-1.29081200	0.18996300
H	-1.53088800	0.01136800	-1.45606000
Tl	-0.50936400	0.04083400	-0.15949800
F	-0.08322300	-1.55298700	1.11977000

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---

**HF<sub>2</sub>Tl•••PH<sub>3</sub>**

---

F	-0.08816800	-1.49388300	1.15430700
H	-2.61801400	0.36399500	1.15559200
H	-3.06072500	-1.10726500	-0.36252800
H	-3.23377300	0.99491000	-0.82030300
P	-2.33041300	0.09455900	-0.20102600
H	1.39267700	-0.21880600	-1.57100300
Tl	0.49992900	-0.03173900	-0.18556300
F	0.30836400	1.61829200	1.02838200

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---

**HF<sub>2</sub>Tl•••O(CH<sub>3</sub>)<sub>2</sub>**

---

F	0.75951500	1.86940600	0.12564900
C	-2.45723200	-1.05061800	-0.27850300
H	-2.32119100	-1.32164200	0.77986700
H	-3.52234400	-0.89021000	-0.50780900
H	-2.05665300	-1.83941100	-0.92994200
O	-1.71916900	0.15705700	-0.57735300

---

---

C	-2.22157700	1.26687700	0.21702700
H	-2.12485700	1.02519400	1.28665900
H	-1.59915900	2.13378700	-0.02811200
H	-3.27461200	1.44155000	-0.05301100
H	1.26544500	-1.16051900	-1.28052400
Tl	0.60728200	-0.15858000	-0.13778100
F	-0.06288200	-0.65805200	1.74999800

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---

**H<sub>2</sub>FTl•••OH<sub>2</sub>**

---

F	-1.17038700	1.47724400	0.01712800
O	-1.98519900	-0.91422500	-0.10965800
H	-2.41837000	-1.26895200	0.67867700
H	-2.11078700	0.07217000	-0.06061300
H	0.64397600	-0.25978500	1.63527100
H	0.69818500	-0.16335900	-1.62778100
Tl	0.36545800	-0.05384500	0.00120400

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---

**H<sub>2</sub>FTl•••SH<sub>2</sub>**

---

F	0.33583800	1.83086200	0.00942100
H	1.90258200	0.94417700	-0.05846000
H	2.55761900	-0.37277200	1.26097300
H	-0.81818800	-0.37105200	-1.62998600
H	-0.77198500	-0.41326900	1.63228700
S	2.41777300	-0.33587400	-0.08266200
Tl	-0.55033300	-0.13445500	0.00040700

---



---

**H<sub>2</sub>FTl•••NH<sub>3</sub>**

---

F	-0.82354600	1.70964900	-0.00005700
N	-2.04620200	-0.73705800	0.00008800
H	-2.25877700	0.27002200	0.00003900
H	-2.47628900	-1.15677200	0.82357000
H	-2.47634500	-1.15686600	-0.82331700
H	0.69134500	-0.31312000	1.62660200

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---

H	0.69126500	-0.31326600	-1.62660800
Tl	0.34029800	-0.09330200	-0.00000500

---

---

**H<sub>2</sub>FTl•••NCH**

---

F	0.23190200	1.84935500	-0.00014100
H	4.18840400	0.25804500	0.00001300
C	3.18580100	-0.13856400	0.00003600
N	2.08808700	-0.56598000	0.00006200
H	-0.70387500	-0.46253100	1.62786200
H	-0.70384500	-0.46278700	-1.62780200
Tl	-0.47653400	-0.13807000	0.00000700

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---

**H<sub>2</sub>FTl•••CO**

---

F	-0.40194500	1.76223700	0.00001400
C	-2.26555700	-0.48503800	-0.00016300
O	-3.38061200	-0.21793500	-0.00019700
H	0.75400100	-0.43787400	1.62802800
H	0.75434400	-0.43773800	-1.62794700
Tl	0.52774600	-0.12754100	0.00002900

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---

**H<sub>2</sub>FTl•••OCH<sub>2</sub>**

---

F	0.49074500	1.78081400	0.00001900
C	2.73741500	-0.01676500	-0.00000600
H	2.42107900	1.04219000	-0.00001600
H	3.81109000	-0.28444100	-0.00000900
O	1.89165700	-0.91892900	0.00000900
H	-0.76372100	-0.36327600	-1.63160900
H	-0.76381000	-0.36342800	1.63156400
Tl	-0.50221100	-0.10625100	-0.00000200

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**H<sub>2</sub>FTl•••C<sub>2</sub>H<sub>4</sub>**

---

C	0.16507900	-2.34899800	0.67907000
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H	-0.75301000	-2.12245500	1.22810800
H	1.06583800	-2.59622300	1.24816600
C	0.16507900	-2.34899800	-0.67907000
H	1.06583800	-2.59622300	-1.24816600
H	-0.75301000	-2.12245500	-1.22810800
F	-1.89065800	-0.02962000	0.00000000
H	0.51896600	0.66245600	1.62480000
H	0.51896600	0.66245600	-1.62480000
Tl	0.16507900	0.45144400	0.00000000

---



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**H<sub>2</sub>FTl•••OHCH<sub>3</sub>**

---

F	0.33393200	1.83849300	-0.17045100
C	2.82078500	-0.47866000	-0.28266000
H	2.51817500	-0.25954200	-1.31950200
H	3.78727000	0.00317700	-0.07278300
H	2.92261300	-1.56379900	-0.15200100
O	1.82336700	-0.02630200	0.65573300
H	1.61939200	0.92441800	0.44630700
H	-0.29768300	-0.73591600	-1.55673300
H	-1.25465600	-0.07746500	1.49473900
Tl	-0.54089100	-0.14512300	-0.01056600

---



---

**H<sub>2</sub>FTl•••PH<sub>3</sub>**

---

F	1.65015600	-0.76158700	0.00000000
H	-0.11327700	-2.84855700	1.06711600
H	-0.11327700	-2.84855700	-1.06711600
H	-1.95597900	-3.09403900	0.00000000
P	-0.81694500	-2.24104400	0.00000000
H	-0.20734800	0.92771500	-1.62655900
H	-0.20734800	0.92771500	1.62655900
Tl	0.00000000	0.58525500	0.00000000

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**H<sub>2</sub>FTl•••O(CH<sub>3</sub>)<sub>2</sub>**

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F	0.61137900	1.90915500	0.00105200
C	-2.55805600	-1.13594800	0.08930700
H	-2.50261700	-1.18647400	1.19108000
H	-3.61058600	-1.03600700	-0.22303600
H	-2.13090000	-2.04817400	-0.34923500
O	-1.79186900	-0.02774300	-0.40451900
C	-2.31586500	1.22843800	0.08589300
H	-2.33246900	1.22173300	1.18925200
H	-1.63211500	2.00958600	-0.26374000
H	-3.33625600	1.37078100	-0.30530900
H	0.42822700	-0.56971300	1.63901200
H	1.11819000	-0.60665200	-1.54505900
TI	0.64289600	-0.20580800	0.01040200

---



---

**H<sub>2</sub>CITl•••OH<sub>2</sub>**

---

Cl	2.03775600	-0.57105800	0.00814900
O	0.56574400	2.15451000	-0.10158600
H	0.57211400	2.70584400	0.69432200
H	1.45038700	1.73440200	-0.11793400
H	-0.87022500	-0.12842700	1.62988000
H	-0.87172800	-0.23316900	-1.62065100
TI	-0.48701700	-0.14329300	0.00109300

---



---

**H<sub>2</sub>CITl•••SH<sub>2</sub>**

---

Cl	-0.22059200	2.13705300	0.00324500
H	2.19293200	0.98481700	-0.45528900
H	2.52831300	0.10831500	1.24422300
H	-0.64357000	-0.75381700	-1.62622900
H	-0.64680200	-0.77536800	1.62174300
S	2.50964200	-0.27191900	-0.05301100
TI	-0.49179100	-0.38942200	0.00010600

---

---

**H<sub>2</sub>CITl•••NH<sub>3</sub>**

---

Cl	2.11487400	-0.29366900	-0.00005300
N	0.06667600	2.21785000	0.00008400
H	1.08627800	2.10985900	0.00001500
H	-0.18657400	2.76577600	0.82286200
H	-0.18667900	2.76588200	-0.82259100
H	-0.84541700	-0.38182300	1.62065800
H	-0.84548000	-0.38169800	-1.62065500
Tl	-0.43755200	-0.21494500	0.00000000

---

---

**H<sub>2</sub>CITl•••NCH**

---

Cl	-0.13026100	2.12642800	0.00000000
H	4.30934300	0.17022400	0.00000300
C	3.27957100	-0.14961200	0.00000100
N	2.15229700	-0.49106800	-0.00000100
H	-0.59851200	-0.76995200	1.62119100
H	-0.59851000	-0.76996100	-1.62118800
Tl	-0.44001700	-0.37585700	0.00000000

---

---

**H<sub>2</sub>CITl•••CO**

---

Cl	-0.11204400	2.09462200	-0.00002200
C	-2.29965300	-0.58172700	-0.00014300
O	-3.43249500	-0.40449900	-0.00024200
H	0.68262900	-0.72220400	1.62117400
H	0.68275100	-0.72224400	-1.62107700
Tl	0.51601500	-0.33873800	0.00003800

---

---

**H<sub>2</sub>CITl•••OCH<sub>2</sub>**

---

Cl	-0.72540600	-1.98524300	-0.00000500
C	-2.71807300	0.75575600	0.00001300
H	-2.71665200	-0.34954700	0.00006500
H	-3.67992700	1.30229300	-0.00001000
O	-1.65916400	1.38970900	-0.00002100

---

---

H	0.86519500	0.47087800	-1.62525700
H	0.86516400	0.47088900	1.62526400
TI	0.57506000	0.20003000	0.00000100

---

---

**H<sub>2</sub>CITl•••C<sub>2</sub>H<sub>4</sub>**

---

C	-1.42280800	-1.93273000	0.67937800
H	-1.95126500	-1.15207400	1.23391100
H	-0.92096700	-2.72155400	1.24698200
C	-1.42280800	-1.93273000	-0.67937800
H	-0.92096700	-2.72155400	-1.24698200
H	-1.95126500	-1.15207400	-1.23391100
Cl	-1.42280800	1.60768400	0.00000000
H	0.96382200	-0.11111100	1.61878700
H	0.96382200	-0.11111100	-1.61878700
TI	0.55652100	0.04730400	0.00000000

---

---

**H<sub>2</sub>CITl•••OHCH<sub>3</sub>**

---

Cl	0.31284700	2.11367300	-0.05181900
C	2.71547700	-0.76056400	-0.37151100
H	2.48789200	-0.13053500	-1.24505200
H	3.75212400	-0.59324700	-0.04630900
H	2.57777600	-1.81850700	-0.62699900
O	1.80040100	-0.47299100	0.71597800
H	1.82334700	0.49693300	0.84754000
H	-0.29035500	-0.81877500	-1.58839500
H	-1.28557900	-0.41061400	1.48105600
TI	-0.55653900	-0.30012800	-0.01777400

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---

**H<sub>2</sub>CITl•••PH<sub>3</sub>**

---

Cl	1.73919700	-1.19842500	0.00000000
H	-1.15952100	-2.64294500	1.06802100
H	-1.15952100	-2.64294500	-1.06802100
H	-2.96783800	-2.19596200	0.00000000

---

P	-1.59572000	-1.82154400	0.00000000
H	-0.17183000	1.04309400	-1.62109100
H	-0.17183000	1.04309400	1.62109100
Tl	0.00000000	0.65545700	0.00000000

---

**H<sub>2</sub>CITl•••O(CH<sub>3</sub>)<sub>2</sub>**

---

C	-2.85896700	-0.49676400	-0.07169700
H	-2.87532300	-0.68536000	1.01627000
H	-3.83763500	-0.10551900	-0.39395400
H	-2.64049400	-1.42851600	-0.61111700
O	-1.82163200	0.43881200	-0.40738700
C	-2.03971800	1.71049200	0.24267600
H	-2.04164800	1.57883600	1.33868700
H	-1.20841600	2.36030500	-0.05243900
H	-3.00517500	2.12688100	-0.08748100
H	0.08945700	-0.73108600	1.66707700
H	0.63668300	-1.18314300	-1.49871700
Tl	0.41956700	-0.52742500	0.02886600
Cl	1.46251600	1.76448100	-0.08724900

---

12. Carbon Bonded Complexes

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**NO<sub>2</sub>H<sub>3</sub>C•••OH<sub>2</sub>**

---

C	0.26483000	-0.00167400	0.08610200
H	0.57842500	0.90425500	0.61264700
H	0.64101800	0.00676700	-0.94380100
H	0.57722600	-0.91627900	0.59808300
H	3.86736500	0.76041400	-0.06831500
H	3.86744600	-0.76024500	-0.06807400
N	-1.22612400	0.00007200	0.01117500
O	-1.79662200	-1.09885700	-0.03422300
O	-1.79343600	1.10062500	-0.03400100
O	3.27285800	0.00006000	-0.02244800

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---

**NO<sub>2</sub>H<sub>3</sub>C•••SH<sub>2</sub>**

---

C	-0.45729800	0.03536500	-0.07055600
H	-0.15578400	1.02997700	-0.41195100
H	-0.13203500	-0.76037400	-0.74863700
H	-0.08492500	-0.16091100	0.94245200
H	3.50827000	0.97189800	0.76756200
H	3.48804800	-0.97935800	0.76877000
S	3.12638400	-0.00040900	-0.08728100
N	-1.94891400	-0.00137600	-0.00541500
O	-2.55011800	1.08112900	0.03588000
O	-2.48232200	-1.11828500	0.03156200

---

---

**NO<sub>2</sub>H<sub>3</sub>C•••NH<sub>3</sub>**

---

C	0.22679700	-0.00811600	0.03052100
H	0.56532900	0.12834600	-1.00337300
H	0.55889900	-0.97398400	0.41974400
H	0.56102700	0.83234400	0.64552800
N	3.40247600	-0.00093900	-0.00958700
H	3.79683500	0.86810900	-0.37172700
H	3.79567400	-0.74587900	-0.58608200
H	3.80901900	-0.12467900	0.91846200
N	-1.26670900	-0.00044300	0.01005600
O	-1.82711500	1.10426800	-0.01290200
O	-1.84762600	-1.09500400	-0.01321900

---

---

**NO<sub>2</sub>H<sub>3</sub>C•••NCH**

---

C	0.22530000	-0.02238800	0.02132000
H	-0.09895000	-1.01551000	0.34382400
H	-0.10989700	0.18536000	-1.00210700
H	-0.11775600	0.77146100	0.69197700
H	-5.13968400	0.01147900	-0.00913600
N	-2.88003900	-0.00614000	-0.00244400

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---

C	-4.06199400	0.00304100	-0.00588400
N	1.71824000	0.00063100	0.00849600
O	2.31252500	-1.08682500	-0.01031400
O	2.26485600	1.11205800	-0.00962900

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---

**NO<sub>2</sub>H<sub>3</sub>C...CO**

---

C	-0.30653300	0.00675400	-0.02618200
H	0.02457600	-0.82304100	-0.65894000
H	0.02606400	-0.15226800	1.00732500
H	0.02561300	0.98098900	-0.39679100
C	3.07530200	-0.01290600	0.01452600
O	4.22458700	0.00917500	0.00004200
N	-1.79989500	0.00133400	-0.00956600
O	-2.37729900	1.09717800	0.01174000
O	-2.35848700	-1.10361600	0.01138100

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---

**NO<sub>2</sub>H<sub>3</sub>C...OCH<sub>2</sub>**

---

C	-0.33372000	0.00552900	0.05139100
H	-0.00295300	-0.90978900	0.55066700
H	-0.01302400	0.91136500	0.57414000
H	0.01699300	0.02191200	-0.98769300
H	4.42111700	0.10865900	0.95000900
H	4.45795100	-0.16505000	-0.92189000
C	3.85886600	-0.01252400	0.00029900
O	2.63478800	0.02056300	-0.02866000
N	-1.82572700	-0.00203200	0.01130700
O	-2.39132100	-1.10430100	-0.00587100
O	-2.39982600	1.09487400	-0.03478400

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---

**NO<sub>2</sub>H<sub>3</sub>C...PH<sub>3</sub>**

---

C	-0.53433600	-0.01524600	0.02429500
H	-0.19910500	0.22028000	-0.99361000
H	-0.20579600	-1.01438900	0.32484200

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H	-0.19985300	0.76493600	0.71615100
P	3.18116300	-0.00129400	-0.00342400
H	3.93386100	0.27027500	-1.18302800
H	3.95041100	-1.14884000	0.34741600
H	3.94299600	0.88638800	0.81103900
N	-2.02778100	-0.00063500	0.00817200
O	-2.57764800	1.10863300	-0.01066100
O	-2.61478600	-1.09154700	-0.01114200

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---

**NO<sub>2</sub>H<sub>3</sub>C...HF**

---

C	0.28243400	-0.00662700	0.01955900
H	0.61188100	0.23570000	-0.99838600
H	0.61767200	-1.00486300	0.31456500
H	0.61369700	0.77247800	0.71381100
H	4.17197500	0.02786600	0.03710700
F	3.24871000	-0.00649100	-0.01264700
N	-1.21045100	-0.00110300	0.00870200
O	-1.76771500	1.10460300	-0.00823900
O	-1.79166700	-1.09526400	-0.00820400

---

---

**NO<sub>2</sub>H<sub>3</sub>C...C<sub>2</sub>H<sub>2</sub>**

---

C	0.10958200	-0.09842400	0.03108800
H	-0.26184500	0.30603800	-0.91800200
H	-0.24905300	0.51765200	0.86306400
H	-0.15870800	-1.15214400	0.15128800
C	-3.29525900	-0.60562600	0.00289500
H	-3.35059900	-1.67972100	0.02175200
C	-3.24899000	0.62528800	-0.01936700
H	-3.21967100	1.70048200	-0.03907800
N	1.59919800	0.00298200	0.00412900
O	2.07893800	1.14426700	0.00043600
O	2.25274900	-1.04934300	-0.02488900

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---

**NO<sub>2</sub>H<sub>3</sub>C...HCl**

---

C	-0.41593500	0.10153800	0.00345100
H	-0.15291500	1.16333200	0.02229000
H	-0.05017900	-0.39567100	-0.90255100
H	-0.05022200	-0.42936800	0.88995400
H	3.50547100	-1.14144300	-0.00901100
Cl	3.06599000	0.06991300	-0.00014400
N	-1.90525200	-0.00937300	0.00062100
O	-2.56677400	1.03817800	-0.00227900
O	-2.37592700	-1.15430200	-0.00063100

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---

**NF<sub>2</sub>H<sub>3</sub>C...OH<sub>2</sub>**

---

C	-0.28206600	0.00036700	0.19110700
H	-0.70931900	-0.89728400	0.65318500
H	-0.43828100	0.00017400	-0.89609100
H	-0.70885900	0.89844200	0.65278700
H	-4.06127300	0.00170500	0.53700800
H	-3.74219200	-0.00215600	-0.94958400
N	1.14688100	0.00008100	0.51468000
O	-3.31865400	0.00000100	-0.08110200
F	1.65990500	1.10100400	-0.22790000
F	1.65935900	-1.10141100	-0.22742100

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---

**NF<sub>2</sub>H<sub>3</sub>C...SH<sub>2</sub>**

---

C	0.42612000	-0.00179900	-0.29744100
H	0.03982000	-0.90240800	-0.79055300
H	0.04002000	0.89462600	-0.79834200
H	0.18211900	0.00260600	0.77345800
H	-3.44099800	-1.06793700	0.73215100
H	-3.37760800	0.86301000	0.99892500
S	-3.18816500	0.01450000	-0.03359100
N	1.87709400	-0.00275000	-0.50617700
F	2.32609700	-1.10063900	0.27946400

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F	2.32622500	1.10154300	0.27050400
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**NF<sub>2</sub>H<sub>3</sub>C•••NH<sub>3</sub>**

---

C	-0.23865100	0.00013100	-0.24489500
H	-0.43963800	0.00011200	0.83434300
H	-0.64817100	-0.89665100	-0.72422300
H	-0.64796600	0.89693300	-0.72433600
N	-3.44223500	0.00003600	0.09907100
H	-3.74547600	0.81450700	0.63422000
H	-3.74482600	-0.81394000	0.63533900
H	-4.00645300	-0.00076500	-0.75140000
N	1.20220700	-0.00006300	-0.51366500
F	1.68594300	1.10143400	0.24821600
F	1.68568400	-1.10152200	0.24818300

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---

**NF<sub>2</sub>H<sub>3</sub>C•••NCH**

---

C	-0.19895000	0.00100600	-0.24065900
H	0.20830500	-0.89611800	-0.72218800
H	0.00537000	0.00089400	0.83832700
H	0.20673200	0.89911100	-0.72170800
H	5.18933800	-0.00114100	0.20694900
N	2.93801500	0.00059900	0.00977700
C	4.11573700	-0.00036400	0.11223300
N	-1.64032500	-0.00017900	-0.50518200
F	-2.12279900	1.10076500	0.25784900
F	-2.12101300	-1.10182500	0.25737500

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---

**NF<sub>2</sub>H<sub>3</sub>C•••CO**

---

C	-0.27870800	-0.00094100	-0.27073400
H	0.11431700	-0.90030000	-0.76107400
H	-0.05348800	-0.00090600	0.80451900
H	0.11547600	0.89765200	-0.76124300
C	3.13138700	0.00134000	-0.01820500

---

O	4.27047700	-0.00076600	0.13727700
N	-1.72617800	-0.00003000	-0.50261700
F	-2.18664500	1.10146400	0.27044900
F	-2.18812700	-1.10063000	0.27083300

---

**NF<sub>2</sub>H<sub>3</sub>C...C<sub>2</sub>H<sub>4</sub>**

---

C	0.21950300	-0.01863400	-0.25299900
H	0.01564100	0.16923800	0.81004000
H	-0.20473400	-0.97758400	-0.57580200
H	-0.16675000	0.79272200	-0.88240200
C	-3.15485200	0.62526100	0.37062900
H	-3.03405500	0.73080000	1.45208100
H	-3.22290900	1.54345600	-0.21890800
C	-3.22992200	-0.59005200	-0.21176100
H	-3.36076100	-0.69510100	-1.29218600
H	-3.17189200	-1.50800500	0.37932100
N	1.66125400	-0.09272900	-0.50675200
F	2.11639500	-1.05743400	0.43455700
F	2.16230500	1.11233700	0.05876600

---

**NF<sub>2</sub>H<sub>3</sub>C...PH<sub>3</sub>**

---

C	-0.50112300	-0.00130800	-0.29210900
H	-0.26321600	-0.00118700	0.78050300
H	-0.11146700	0.89684700	-0.78726100
H	-0.11317300	-0.90050900	-0.78672100
P	3.23307600	-0.00007400	0.03899400
H	3.70223300	0.00213700	1.38525200
H	4.11200600	1.04297700	-0.37552500
H	4.11332800	-1.04318200	-0.37256500
N	-1.95102800	-0.00001100	-0.50762400
F	-2.40502100	-1.10039600	0.27131900
F	-2.40297000	1.10172500	0.27061700

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---

**NF<sub>2</sub>H<sub>3</sub>C...HF**

---

C	0.29927600	0.00096300	-0.19486600
H	0.46010800	0.00091200	0.89170900
H	0.72086200	0.89995300	-0.66101500
H	0.72199500	-0.89732700	-0.66120000
H	4.19767700	0.01570600	0.22157800
F	3.28189100	-0.00219100	0.09147800
N	-1.13102300	0.00011500	-0.51351300
F	-1.63911400	-1.10137000	0.23042100
F	-1.64045900	1.10069200	0.23062500

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**NF<sub>2</sub>H<sub>3</sub>C...C<sub>2</sub>H<sub>2</sub>**

---

C	0.07726200	-0.00803500	-0.18779700
H	-0.07234800	0.01018200	0.90077900
H	-0.34740800	-0.91696600	-0.63152100
H	-0.35394300	0.88185100	-0.66263100
C	-3.39672300	-0.01670900	-0.52567500
H	-3.53342800	-0.04898400	-1.59206500
C	-3.25272300	0.02038500	0.69727800
H	-3.13821500	0.05281600	1.76630300
N	1.50472400	-0.00868000	-0.51947100
F	2.02315900	-1.09482700	0.23864100
F	2.01521600	1.10682900	0.20053700

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---

**NF<sub>2</sub>H<sub>3</sub>C...HCl**

---

C	-0.38043500	-0.05983500	-0.25839300
H	-0.01707600	-0.99428300	-0.70443700
H	-0.16807400	-0.02317200	0.81893200
H	0.05228800	0.80225800	-0.78100600
H	3.40326000	0.49300100	1.14312000
Cl	3.12119100	-0.02695300	-0.00158800
N	-1.82408700	-0.01534300	-0.50814500
F	-2.33578100	-1.06312700	0.30596900

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F	-2.25082300	1.13499500	0.21155900
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**HOH<sub>3</sub>C•••OH<sub>2</sub>**

---

C	0.72490600	0.00764400	0.00785600
H	0.35440800	0.91927300	-0.48749900
H	0.34162500	-0.01244300	1.03457900
H	0.33817400	-0.87337900	-0.52905700
O	-2.40229800	0.00404800	-0.03982800
H	-3.02239100	0.72776500	0.11883200
H	-2.93771700	-0.78989200	0.08856800
O	2.15996900	-0.00779000	0.10484100
H	2.51509300	0.01275200	-0.79266400

---

---

**HOH<sub>3</sub>C•••SH<sub>2</sub>**

---

C	1.49943500	0.00623400	-0.00086300
H	1.12475500	-0.52818200	-0.88952400
H	1.10917700	1.03115300	-0.01967600
H	1.12313000	-0.49581100	0.90578800
H	-2.47750000	0.73899600	-0.99217100
H	-2.47813500	0.78396800	0.95702700
S	-2.13424700	-0.10615100	0.00255900
O	2.93181500	0.11392600	-0.00153000
H	3.29539300	-0.78052400	0.01503800

---

---

**HOH<sub>3</sub>C•••NH<sub>3</sub>**

---

C	0.78348200	-0.00899400	0.00022000
H	0.41094100	-0.52890700	0.89702300
H	0.41050500	-0.52951100	-0.89605300
H	0.38575800	1.01268700	-0.00003200
N	-2.50711200	-0.02088800	0.00010000
H	-2.81210300	0.50968800	0.81667800
H	-3.06517400	-0.87517800	-0.00501100
H	-2.80808900	0.51675200	-0.81334200

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---

O	2.21763500	0.10967700	-0.00018400
H	2.58597800	-0.78276700	0.00018900

---

---

**HOH<sub>3</sub>C...NCH**

---

C	-1.31164700	-0.00498200	0.00011000
H	-0.93752200	0.51334500	0.89757100
H	-0.93732900	0.51358800	-0.89707300
H	-0.91930000	-1.02895200	0.00002000
H	4.13961300	-0.11738900	0.00027100
N	1.88692400	0.06708600	-0.00017900
C	3.06555300	-0.02923200	0.00006500
O	-2.74603600	-0.11550100	-0.00007900
H	-3.10907900	0.77910500	0.00005200

---

---

**HOH<sub>3</sub>C...CO**

---

C	-1.40330300	-0.00471700	-0.00920700
H	-1.04020800	0.53069200	-0.90199800
H	-1.01810700	-1.03160000	-0.03715200
H	-1.01185900	0.49293300	0.89359100
C	2.01436500	0.04500800	-0.04574000
O	3.16003400	-0.02005400	0.03085100
O	-2.83509500	-0.10764800	0.01176300
H	-3.19570900	0.78784800	0.03433200

---

---

**HOH<sub>3</sub>C...OCH<sub>2</sub>**

---

C	-1.41383400	0.01044800	0.00056400
H	-1.03824100	1.04026500	-0.00236100
H	-1.03186900	-0.50534100	-0.89499500
H	-1.03255400	-0.50002400	0.89950800
H	3.47611300	0.93473100	-0.00228500
H	3.46542000	-0.95713500	0.00180900
C	2.88806100	-0.00785800	-0.00017100
O	1.66384500	-0.00069800	-0.00002400

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---

O	-2.84957000	0.09753500	0.00009600
H	-3.19842800	-0.80273800	-0.00461200

---

---

**HOH<sub>3</sub>C•••HCl**

---

C	-1.40627700	0.04829500	0.00658000
H	-0.99617400	-0.45950800	-0.88273700
H	-1.01087500	-0.43473600	0.91603500
H	-1.07994200	1.09617400	-0.00509900
H	3.29150800	0.07015700	0.02404200
O	-2.84114700	0.07114500	-0.00567200
H	-3.15153800	-0.84328200	0.00357100
Cl	2.00669800	-0.01692600	-0.00293600

---

---

**HOH<sub>3</sub>C•••PH<sub>3</sub>**

---

C	1.55927500	-0.04902600	-0.00215900
H	1.20996200	-0.58430300	0.89642500
H	1.21533700	-0.59099000	-0.89883900
H	1.11617800	0.95506900	-0.00720100
P	-2.13557400	-0.07733900	0.00079400
H	-3.10695200	-0.00570900	1.04274100
H	-3.10901400	-0.01905800	-1.04006400
H	-1.90435400	1.33038200	-0.00846000
O	2.98271600	0.13801000	0.00131900
H	3.39508000	-0.73523800	0.00588800

---

---

**HOH<sub>3</sub>C•••HF**

---

C	0.70417100	-0.01367700	-0.00082500
H	0.32337800	0.50006600	-0.89830400
H	0.32120900	0.49577500	0.89834900
H	0.33216100	-1.04533000	-0.00405000
H	-3.30952500	-0.05487700	0.02094500
F	-2.38801800	0.01903700	-0.00247700
O	2.13907800	-0.09837700	0.00099300

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H	2.48729100	0.80210800	0.00235200
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**HOH<sub>3</sub>C•••C<sub>2</sub>H<sub>2</sub>**

---

C	-1.12007100	0.00372600	-0.00573100
H	-0.73674000	-0.11115300	-1.02697900
H	-0.73834300	-0.82769200	0.61012400
H	-0.74276000	0.95472500	0.40624000
C	2.31470100	0.61289700	0.00098600
H	2.33795000	1.68794100	-0.00967200
C	2.29368800	-0.61874500	0.01018800
H	2.27986600	-1.69401100	0.01581000
O	-2.55248000	-0.01095700	-0.10216200
H	-2.91004600	0.09057500	0.78911400

13. Silicon Bonded Complexes

---

**FH<sub>3</sub>Si•••OH<sub>2</sub>**

---

H	0.00860200	1.23600300	-0.68957000
H	0.04102300	-0.00030900	1.44339200
H	0.00865000	-1.23577000	-0.69006700
F	2.09163400	0.00002300	-0.01022300
O	-2.38325700	0.00000100	-0.08214400
H	-2.86778000	0.76303900	0.25993000
H	-2.86793600	-0.76291800	0.25997500
Si	0.42277100	-0.00001800	0.01182200

---

**FH<sub>3</sub>Si•••SH<sub>2</sub>**

---

H	0.69211100	1.22940000	-0.71991200
H	0.66463500	-0.00005900	1.40623500
H	0.69214700	-1.22938900	-0.71998700
F	2.77481200	0.00001300	0.01696700
H	-2.52964400	0.97543600	0.81241000
H	-2.52975300	-0.97532000	0.81251700
Si	1.11124500	-0.00001100	-0.00704300

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S	-2.34501500	-0.00000200	-0.10283500
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---

**FH<sub>3</sub>Si•••NH<sub>3</sub>**

---

H	-0.02127000	-0.24337000	-1.42455900
H	-0.02124300	-1.11200100	0.92303300
H	-0.02126300	1.35539200	0.50149200
F	-2.03302800	-0.00000600	0.00000900
N	2.20810000	0.00000000	0.00000000
H	2.59661600	0.72675500	-0.60241000
H	2.59653000	-0.88512400	-0.32816400
H	2.59650400	0.15831800	0.93064000
Si	-0.34895200	0.00000600	-0.00000800

---

---

**FH<sub>3</sub>Si•••PH<sub>3</sub>**

---

H	0.74889300	0.86177500	-1.12640400
H	0.74889700	0.54460600	1.30951900
H	0.74889200	-1.40639000	-0.18311700
F	2.84298900	0.00000000	-0.00000100
P	-2.33780800	-0.00000100	0.00000100
H	-3.09209500	1.19859200	0.15609200
H	-3.09212100	-0.73446900	0.95995200
H	-3.09210400	-0.46410200	-1.11605700
Si	1.17927500	0.00000100	0.00000100

---

---

**FH<sub>3</sub>Si•••CO**

---

H	0.57707100	1.39051400	0.27014900
H	0.57634700	-0.92829300	1.06928700
H	0.57566100	-0.46096900	-1.33838700
F	2.67498500	-0.00050400	-0.00042200
Si	1.01352000	0.00024000	0.00020100
C	-2.20001400	0.00093700	0.00077400
O	-3.34914200	-0.00071100	-0.00059000

---



---

**FH<sub>3</sub>Si•••NCH**

---

H	0.49491000	0.94741000	1.06091400
H	0.49527000	-1.39269700	0.29006800
H	0.49505300	0.44493600	-1.35108000
F	2.57494500	0.00018100	0.00003400
H	-4.25907000	0.00078000	0.00008200
N	-2.00001000	-0.00036700	-0.00003400
C	-3.18113900	0.00023900	0.00002900
Si	0.90616000	-0.00006600	-0.00001600

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---

**FH<sub>3</sub>Si•••OHCH<sub>3</sub>**

---

H	0.37578600	-0.59947300	1.18199500
H	0.43625700	-0.46662300	-1.28772600
H	0.84608100	1.57219900	0.07982000
F	2.56038500	-0.24875700	0.01947300
O	-1.63819600	0.63130600	-0.10829800
C	-2.44645300	-0.55451700	0.02467900
H	-2.11735600	-1.23776100	-0.76827200
H	-2.29451600	-1.03729400	1.00344600
H	-3.51372300	-0.32617700	-0.11804000
H	-1.91779700	1.26445300	0.56735500
Si	0.92329200	0.09615300	-0.00825200

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---

**FH<sub>3</sub>Si•••O(CH<sub>3</sub>)<sub>2</sub>**

---

H	-0.64905800	-0.00205800	1.30039500
H	-0.94021500	1.25079600	-0.82796300
H	-0.94042600	-1.24795800	-0.83191400
F	-2.86012400	-0.00005000	0.15338500
O	1.29364400	0.00003500	-0.42047600
C	1.88142900	1.17750100	0.14564400
H	1.39858000	2.03995400	-0.33075800
H	1.71236700	1.21015700	1.23732800

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---

H	2.96570100	1.19962600	-0.05725700
C	1.88097600	-1.17773500	0.14560400
H	1.39804500	-2.03995000	-0.33120100
H	2.96528100	-1.20003900	-0.05702100
H	1.71156400	-1.21052500	1.23720800
Si	-1.20030800	0.00011200	-0.07878300

---

---

**FH<sub>3</sub>Si•••NCCH<sub>3</sub>**

---

H	1.27564500	-0.80331100	-1.17857900
H	1.27564800	1.42233500	-0.10638700
H	1.27565800	-0.61903500	1.28497900
F	3.34447800	0.00000100	-0.00000700
N	-1.14730900	0.00000700	0.00001000
C	-2.33080000	0.00000200	0.00000300
Si	1.67191400	-0.00000200	0.00000200
C	-3.80063500	-0.00000300	-0.00000700
H	-4.17141600	-0.58421800	-0.85376400
H	-4.17142700	-0.44727100	0.93281200
H	-4.17142700	1.03147600	-0.07907500

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---

**FH<sub>3</sub>Si•••NH<sub>2</sub>CH<sub>3</sub>**

---

H	0.38067700	-0.54305000	-1.26437700
H	0.88908900	1.59602400	-0.00000400
H	0.38067000	-0.54307200	1.26436000
F	2.45843900	-0.28081200	0.00000200
N	-1.47315900	0.62257900	0.00000300
H	-1.68779100	1.19889400	-0.81590000
H	-1.68779000	1.19888100	0.81591700
Si	0.80913900	0.11171400	-0.00000100
C	-2.31457400	-0.59155900	-0.00000200
H	-2.06698500	-1.18700000	-0.89004600
H	-2.06696800	-1.18701500	0.89002700
H	-3.39524100	-0.37905200	0.00001000

---

---

**ClH<sub>3</sub>Si...OH<sub>2</sub>**

---

H	-0.53653400	1.23466600	-0.68473600
H	-0.50672100	-0.00043600	1.44677600
H	-0.53650700	-1.23431400	-0.68544500
O	-2.96136500	0.00001100	-0.08120100
H	-3.46381400	0.76292400	0.23431400
H	-3.46389800	-0.76284100	0.23432700
Si	-0.12393800	-0.00002200	0.01720900
Cl	1.99609000	0.00001300	-0.00803300

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---

**ClH<sub>3</sub>Si...SH<sub>2</sub>**

---

H	0.12826600	1.22922200	-0.72544600
H	0.10294800	-0.00190300	1.39708300
H	0.12844400	-1.22761700	-0.72858800
H	-3.10508400	0.97568600	0.81963600
H	-3.10555100	-0.97503100	0.82025700
S	-2.94069500	-0.00000500	-0.09923500
Cl	2.65997600	0.00004800	0.01291200
Si	0.54875000	-0.00007900	-0.01533500

---

---

**ClH<sub>3</sub>Si...NH<sub>3</sub>**

---

H	-0.51591500	0.16162800	1.43710600
H	-0.51589900	-1.32540000	-0.57859200
H	-0.51590300	1.16376200	-0.85854500
Cl	1.94760400	0.00000200	0.00000500
N	-2.75317900	0.00000100	0.00000200
H	-3.14201300	0.86484500	0.37862800
H	-3.14203300	-0.76029300	0.55969000
H	-3.14209600	-0.10452900	-0.93825200
Si	-0.20451100	-0.00000300	-0.00001000

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---

**ClH<sub>3</sub>Si...PH<sub>3</sub>**

---

H	0.83971800	0.84412800	-0.78887200
H	-0.39457400	-1.26227800	-0.53942000
H	-0.82830000	0.60319400	0.99503200
P	2.09212700	-1.01041700	1.81974500
H	3.22487700	-1.73078700	1.34196500
H	1.80233400	-1.93622300	2.86340800
H	2.85501800	-0.13978400	2.65060400
Si	-0.43345500	0.20934000	-0.37701800
Cl	-1.93015300	0.93219000	-1.67886100

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---

**ClH<sub>3</sub>Si...CO**

---

Si	0.42718900	-0.00001000	-0.00000800
H	-0.01213500	-0.65538300	1.25360200
H	-0.01211700	-0.75799300	-1.19438200
H	-0.01214100	1.41333200	-0.05925200
Cl	2.53425400	0.00000800	0.00000700
C	-2.84519200	-0.00001500	-0.00001700
O	-3.99442800	0.00001700	0.00001600

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---

**ClH<sub>3</sub>Si...NCH**

---

H	-0.08312300	-1.12015400	-0.87489100
H	-0.08284100	1.31802100	-0.53277100
H	-0.08306100	-0.19735700	1.40764800
Cl	2.44641700	-0.00012600	0.00001000
H	-4.87112200	-0.00083500	0.00003800
N	-2.61183000	0.00033800	-0.00001400
C	-3.79314500	-0.00028400	0.00001600
Si	0.32662400	0.00012900	-0.00001400

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**ClH<sub>3</sub>Si...OHCH<sub>3</sub>**

---

H	-0.12504500	-0.55177500	1.16899900
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H	-0.07998600	-0.38344200	-1.29674000
H	0.24382000	1.65124900	0.09512800
O	-2.22407600	0.60461900	-0.10174700
C	-2.97263500	-0.62066700	0.02458100
H	-2.60200500	-1.28698800	-0.76454300
H	-2.80617500	-1.09498200	1.00518200
H	-4.04872800	-0.44721900	-0.12855300
H	-2.54450700	1.22420300	0.56839700
Cl	2.48326400	-0.16380100	0.01113500
Si	0.38396800	0.18290100	-0.01219100

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---

**ClH<sub>3</sub>Si...OCH<sub>2</sub>**

---

H	0.02163600	-0.92949700	-1.23677800
H	-0.27940900	1.18376600	-0.00001800
H	0.02163600	-0.92947800	1.23678700
H	-4.24867900	0.37827500	0.00000900
H	-2.72306700	1.50378000	-0.00000500
C	-3.14467800	0.47681900	0.00000100
O	-2.41807200	-0.51131300	-0.00000100
Si	0.31546900	-0.17456400	-0.00000100
Cl	2.41199800	0.14509700	0.00000100

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---

**ClH<sub>3</sub>Si...C<sub>2</sub>H<sub>4</sub>**

---

H	-0.06022200	0.00108300	1.41111200
H	-0.06074200	-1.22658800	-0.71147500
H	-0.06080300	1.22537100	-0.71344200
C	-2.95460300	0.67551800	0.00645200
H	-2.84981800	1.24344100	0.93494000
H	-3.06788000	1.24375300	-0.92038200
C	-2.95450600	-0.67551200	0.00645400
H	-3.06770500	-1.24376500	-0.92037800
H	-2.84964700	-1.24341600	0.93494600
Si	0.37452900	-0.00002800	-0.00471400

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Cl	2.48400400	0.00002800	-0.00157500
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**ClH<sub>3</sub>Si•••O(CH<sub>3</sub>)<sub>2</sub>**

---

H	-0.18457000	-0.00040000	1.26129400
H	-0.41548900	1.24921000	-0.87570600
H	-0.41546800	-1.24918300	-0.87594200
O	1.81831700	0.00001900	-0.41062400
C	2.39200800	1.17803100	0.16929300
H	1.91958400	2.04025500	-0.31815200
H	2.19787100	1.21045900	1.25683300
H	3.48057400	1.20125600	-0.00852000
C	2.39183000	-1.17803100	0.16925900
H	1.91945900	-2.04023600	-0.31827100
H	3.48042800	-1.20138400	-0.00839200
H	2.19759700	-1.21059800	1.25678500
Cl	-2.81033400	0.00003600	0.10275100
Si	-0.68956400	-0.00001100	-0.13307200

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**CNH<sub>3</sub>Si•••OH<sub>2</sub>**

---

Si	0.02562500	-0.00059800	0.01867300
H	0.40857000	1.24669500	-0.67367500
H	0.40793500	-1.23300300	-0.70011600
H	0.37643200	-0.01595600	1.45403100
O	2.77736800	0.00040400	-0.07561400
H	3.30168100	0.76444000	0.19910700
H	3.30322700	-0.76252700	0.19921700
N	-1.78327900	0.00025400	-0.00373600
C	-2.98209800	0.00062000	-0.01815300

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**CNH<sub>3</sub>Si•••SH<sub>2</sub>**

---

Si	0.68672300	0.00001400	-0.01055000
H	0.28907800	1.23281500	-0.72332800

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H	0.27197600	-0.00018000	1.40885800
H	0.28911200	-1.23260500	-0.72366400
H	-2.96236300	0.97580900	0.81014300
H	-2.96238000	-0.97580400	0.81016400
S	-2.75408900	-0.00001000	-0.09974400
N	2.48699600	0.00003400	0.00640600
C	3.68615100	-0.00005100	0.01943100

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---

**CNH<sub>3</sub>Si•••NH<sub>3</sub>**

---

Si	-0.11270100	0.00295100	-0.02040000
H	-0.20487300	1.24096200	-0.82324400
H	-0.63134800	0.06393100	1.36271600
H	-0.28538000	-1.27552500	-0.74248400
N	-2.53002900	0.06624500	-0.45793100
H	-2.74560400	0.04085400	-1.45591400
H	-2.97016600	0.91091400	-0.08928500
H	-3.02252000	-0.72296800	-0.03640600
N	1.69783400	-0.04445500	0.30730500
C	2.87717900	-0.07533600	0.52076700

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---

**CNH<sub>3</sub>Si•••PH<sub>3</sub>**

---

Si	0.73869800	0.01789100	-0.14554800
H	0.32614500	1.42678500	0.03164000
H	0.58785700	-0.78245500	1.08866000
H	0.10897400	-0.61952400	-1.32186800
P	-2.71004800	-0.06559300	0.53395400
H	-3.65669800	0.59500800	-0.30028300
H	-3.24902300	0.44443000	1.74963200
H	-3.43587100	-1.28981200	0.58837600
N	2.50537800	0.06063400	-0.49363300
C	3.68165300	0.08909200	-0.72539200

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---

**CNH<sub>3</sub>Si...CO**

---

Si	0.51571500	-0.00027800	-0.24345600
H	-0.41935100	0.53972200	-1.25417600
H	0.62120000	0.86723400	0.94977400
H	0.22115300	-1.40723500	0.10469200
C	-2.40466200	0.00119000	1.13515800
O	-3.44349100	0.00178100	1.62554400
N	2.14049100	-0.00107800	-1.01044300
C	3.22491000	-0.00161100	-1.52235100

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---

**CNH<sub>3</sub>Si...NCH**

---

Si	-0.40862900	-0.06419500	0.17052200
H	0.04328300	1.22083800	0.74177200
H	-0.60991400	-0.02404500	-1.29226100
H	0.38035900	-1.22603300	0.62822700
H	4.25808200	0.66897000	-1.77690700
N	2.19496300	0.34487900	-0.91595000
C	3.27343900	0.51429500	-1.36600700
N	-2.06054200	-0.32374800	0.85986000
C	-3.15543000	-0.49578000	1.31675400

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---

**CNH<sub>3</sub>Si...OHCH<sub>3</sub>**

---

Si	0.49096100	0.18077400	-0.01155900
H	0.02961800	-0.55915800	1.18383400
H	0.06694400	-0.40960900	-1.29715600
H	0.38529100	1.65096900	0.08558000
O	-2.01443000	0.58159600	-0.09778700
C	-2.79509700	-0.62628200	0.02510900
H	-2.41787600	-1.31252000	-0.74344600
H	-2.66744000	-1.08655400	1.01765100
H	-3.86063100	-0.42729200	-0.16251700
H	-2.34589400	1.22351400	0.54592500
N	2.28606600	-0.10581900	0.00651900

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C	3.47001700	-0.29408900	0.01966200
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**CNH<sub>3</sub>Si•••OCH<sub>2</sub>**

---

Si	-0.42367900	-0.17090300	-0.00023000
H	0.12365900	1.20537100	-0.00080800
H	-0.15883600	-0.92324800	-1.24275100
H	-0.15923100	-0.92215200	1.24303400
H	2.56120200	1.51803000	-0.00038200
H	4.05941800	0.35561100	0.00025900
C	2.95918100	0.48202700	0.00006200
O	2.20914400	-0.48948200	0.00032500
N	-2.21571900	0.08794600	-0.00055300
C	-3.40215100	0.26118300	0.00079400

---

---

**CNH<sub>3</sub>Si•••C<sub>2</sub>H<sub>4</sub>**

---

Si	0.50968800	-0.00070100	-0.00457300
H	0.10039400	-1.17974900	-0.79754700
H	0.09961000	1.27535300	-0.62921900
H	0.09952600	-0.09692200	1.41293900
C	-2.79053800	-0.67488700	0.00597200
H	-2.89931600	-1.24276700	-0.92162500
H	-2.69859400	-1.24306200	0.93570100
C	-2.78610800	0.67636700	0.00590800
H	-2.69030900	1.24412900	0.93555100
H	-2.89116800	1.24497000	-0.92171100
N	2.30832000	-0.00062200	-0.00161000
C	3.50764400	0.00055700	-0.00168100

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---

**CNH<sub>3</sub>Si•••O(CH<sub>3</sub>)<sub>2</sub>**

---

Si	-0.79109000	0.00027700	-0.13128200
H	-0.55975500	-1.25525800	-0.87540400
H	-0.34203500	-0.00420300	1.28121500

---

H	-0.55893400	1.26028500	-0.86752600
O	1.61557400	0.00008600	-0.39099600
C	2.20811500	-1.18058300	0.17126800
H	1.72498800	-2.04240100	-0.30590600
H	3.29014800	-1.19740400	-0.03871300
H	2.04371400	-1.21402300	1.26319500
C	2.20954400	1.17996600	0.17142200
H	1.72828200	2.04243100	-0.30644800
H	2.04423500	1.21397600	1.26320100
H	3.29179500	1.19492000	-0.03758100
N	-2.60504900	0.00027700	0.05865000
C	-3.79706400	-0.00018700	0.18720000

#### 14. Germanium Bonded Complexes

<b>FH<sub>3</sub>Ge•••OH<sub>2</sub></b>			
H	0.15030400	1.45294800	0.07997300
H	0.08860000	-0.68695700	-1.32600500
H	0.09212700	-0.83730700	1.23187900
O	2.52896600	0.01186900	0.06539500
H	2.98972900	0.81534000	-0.21048200
H	3.09713200	-0.70784100	-0.23965400
Ge	-0.25851700	-0.01460800	-0.00139800
F	-2.04189700	0.03736900	-0.00157200

<b>FH<sub>3</sub>Ge•••SH<sub>2</sub></b>			
H	-0.38655300	-1.27711500	-0.74865700
H	-0.34887800	-0.00009500	1.45954900
H	-0.38655500	1.27721600	-0.74848700
F	-2.54867900	-0.00000300	0.02668400
H	2.85060100	-0.97544500	0.81975600
H	2.85063000	0.97542700	0.81977000
S	2.69015900	0.00000000	-0.10024500
Ge	-0.77136500	0.00000100	-0.00744200

---

**FH<sub>3</sub>Ge...NH<sub>3</sub>**

---

H	-0.08163700	-1.33132400	0.67998500
H	-0.08170600	0.07677900	-1.49291800
H	-0.08166100	1.25452000	0.81298300
F	2.02529500	0.00001400	-0.00002600
N	-2.40196700	0.00000300	-0.00000600
H	-2.79290100	-0.04867500	0.94183800
H	-2.79282200	-0.79131400	-0.51315500
H	-2.79273300	0.84006600	-0.42880200
Ge	0.22529900	-0.00000600	0.00001100

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---

**FH<sub>3</sub>Ge...PH<sub>3</sub>**

---

H	0.42184800	1.47277900	-0.02505800
H	0.42183000	-0.71468800	1.28798100
H	0.42184500	-0.75808200	-1.26293800
F	2.59971800	-0.00000600	0.00000800
P	-2.70605200	0.00000100	-0.00000100
H	-3.45860100	1.20910700	-0.02044900
H	-3.45853700	-0.58684700	1.05738300
H	-3.45859600	-0.62230100	-1.03687300
Ge	0.82198500	0.00000200	-0.00000300

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---

**FH<sub>3</sub>Ge...CO**

---

H	-0.27015900	1.39271800	-0.47415400
H	-0.26950700	-1.10664600	-0.96891900
H	-0.26953200	-0.28545200	1.44292800
F	-2.45186700	-0.00039400	0.00011600
Ge	-0.67697600	0.00010600	-0.00003000
O	3.67374400	-0.00045200	0.00015400
C	2.52488100	0.00052500	-0.00019300

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---

**FH<sub>3</sub>Ge...NCH**

---

H	-0.21903900	-1.07393800	-1.01560700
H	-0.21930700	-0.34262200	1.43798200
H	-0.21916200	1.41660200	-0.42214800
F	-2.37823100	-0.00004800	-0.00015000
H	4.52363500	-0.00022900	-0.00045500
N	2.26489200	0.00010800	0.00019300
C	3.44563900	-0.00006900	-0.00015300
Ge	-0.59344200	0.00000900	0.00003600

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---

**FH<sub>3</sub>Ge...OHCH<sub>3</sub>**

---

H	0.10677500	-0.67036500	1.21890600
H	0.17353600	-0.49587300	-1.34107500
H	0.61679400	1.59567900	0.10660600
F	2.38393000	-0.31188600	0.02186600
O	-1.92689100	0.61402500	-0.10188200
C	-2.72298400	-0.58159400	0.02367800
H	-2.35810100	-1.27242900	-0.74678600
H	-2.59635800	-1.04605400	1.01471500
H	-3.78757700	-0.37043200	-0.15817400
H	-2.23989600	1.25557400	0.55090300
Ge	0.63695300	0.07463200	-0.00527800

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**FH<sub>3</sub>Ge...OCH<sub>2</sub>**

---

H	0.36366400	-0.86559600	-1.28557000
H	-0.05650700	1.31447300	-0.00103100
H	0.36331300	-0.86380900	1.28661500
F	2.32878400	0.28254500	0.00000100
H	-3.94914300	0.29510500	0.00012700
H	-2.47156700	1.48472400	-0.00010400
C	-2.85103500	0.44167700	0.00000400
O	-2.08309100	-0.51515100	-0.00001700
Ge	0.58006600	-0.07614500	0.00000200

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---

**FH<sub>3</sub>Ge...C<sub>2</sub>H<sub>4</sub>**

---

H	-0.21486900	0.00000400	1.46341200
H	-0.22623500	1.27491200	-0.74589700
H	-0.22623300	-1.27492200	-0.74588000
C	2.63906400	-0.67568200	0.01175400
H	2.50450200	-1.24337800	0.93660300
H	2.78396700	-1.24380400	-0.91073300
C	2.63904800	0.67568600	0.01175600
H	2.78394000	1.24381400	-0.91073000
H	2.50448500	1.24337800	0.93660700
Ge	-0.62396100	-0.00000100	-0.00722200
F	-2.40127700	0.00000000	0.00740700

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**FH<sub>3</sub>Ge...O(CH<sub>3</sub>)<sub>2</sub>**

---

H	-0.33850100	0.00002800	1.37013700
H	-0.66129500	1.29546500	-0.83636100
H	-0.66133700	-1.29553900	-0.83627500
F	-2.65312600	0.00002300	0.20630000
O	1.63246400	0.00000500	-0.41448400
C	2.21164400	1.17841200	0.15949500
H	1.73239100	2.04012300	-0.32217400
H	2.02939300	1.20968300	1.24912100
H	3.29799000	1.20300000	-0.03069500
Ge	-0.88060900	-0.00000600	-0.06077500
C	2.21161800	-1.17841400	0.15949800
H	2.02932800	-1.20969900	1.24911700
H	1.73238000	-2.04011500	-0.32220300
H	3.29797100	-1.20300700	-0.03065400

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**ClH<sub>3</sub>Ge...OH<sub>2</sub>**

---

H	0.52367500	1.44506000	0.05172900
H	0.47647900	-0.71385400	-1.30946100

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H	0.48396300	-0.81466100	1.24256500
O	2.93915200	0.02424700	0.05877700
H	3.41208000	0.83090000	-0.18547700
H	3.53146300	-0.69109900	-0.20823800
Cl	-2.09409200	0.02552700	0.00030100
Ge	0.11433400	-0.02138400	-0.00207600

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---

**ClH<sub>3</sub>Ge•••SH<sub>2</sub>**

---

H	0.01078500	-1.27303300	-0.75238500
H	0.04385500	-0.00002300	1.44756400
H	0.01078900	1.27305000	-0.75234900
H	3.24685200	-0.97531900	0.83078100
H	3.24684100	0.97533700	0.83076300
S	3.11323000	0.00000000	-0.09364300
Ge	-0.38769500	-0.00000100	-0.01495200
Cl	-2.58615000	0.00000200	0.02190400

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**ClH<sub>3</sub>Ge•••NH<sub>3</sub>**

---

H	0.46418600	1.36879500	0.59152700
H	0.46420800	-0.17211600	-1.48115400
H	0.46419800	-1.19665700	0.88965200
N	2.79579200	-0.00000500	-0.00000600
H	3.18732600	0.10904100	0.93669500
H	3.18726900	0.75667000	-0.56284400
H	3.18720400	-0.86578200	-0.37393800
Ge	0.15327400	0.00000600	0.00000800
Cl	-2.08410100	-0.00000700	-0.00000800

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---

**ClH<sub>3</sub>Ge•••PH<sub>3</sub>**

---

H	0.02088900	1.39871400	-0.44521800
H	0.02088700	-0.31377800	1.43393500
H	0.02087900	-1.08493300	-0.98869700

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P	-3.13317600	-0.00000100	-0.00000300
H	-3.88688700	1.15187700	-0.36654300
H	-3.88687800	-0.25851200	1.18082700
H	-3.88687400	-0.89338000	-0.81429100
Cl	2.63182600	-0.00000200	-0.00000500
Ge	0.43295500	0.00000200	0.00000300

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**ClH<sub>3</sub>Ge...CO**

---

H	-0.13698500	1.44278600	0.25968000
H	-0.13745800	-0.94584400	1.11948200
H	-0.13747800	-0.49614800	-1.37900600
Ge	0.28329100	0.00018500	0.00003900
Cl	2.47726900	-0.00029600	-0.00006200
C	-2.96963200	0.00046800	0.00011600
O	-4.11864600	-0.00056300	-0.00012800

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**ClH<sub>3</sub>Ge...NCH**

---

H	-0.18187400	-0.79226000	-1.24201800
H	-0.18185900	1.47175700	-0.06505500
H	-0.18182900	-0.67954000	1.30714400
H	-4.94686500	0.00009900	-0.00013300
N	-2.68781000	-0.00003400	0.00004100
C	-3.86881700	0.00003100	-0.00004700
Ge	0.20319700	-0.00000800	0.00001600
Cl	2.41280500	0.00001500	-0.00002700

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**ClH<sub>3</sub>Ge...OHCH<sub>3</sub>**

---

H	-0.23955900	-0.65192100	1.19064900
H	-0.18429700	-0.40637400	-1.35426800
H	0.15866900	1.65788000	0.14326000
O	-2.35341700	0.56316600	-0.09371600
C	-3.07948700	-0.67686500	0.02353100
H	-2.66843900	-1.34424900	-0.74446600

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H	-2.93463600	-1.13535800	1.01494400
H	-4.15318300	-0.52876800	-0.16715400
H	-2.70955200	1.18430100	0.55674500
Ge	0.26309000	0.14608500	-0.00809300
Cl	2.44802100	-0.22908100	0.01340000

---

**ClH<sub>3</sub>Ge...OCH<sub>2</sub>**

---

H	-0.05933500	-0.91431900	-1.28185100
H	-0.38059800	1.27274900	-0.00001300
H	-0.05934000	-0.91429700	1.28186400
H	-4.33903800	0.43256800	-0.00000300
H	-2.80787500	1.55162400	0.00000700
C	-3.23501500	0.52691700	0.00000000
O	-2.51227500	-0.46433700	-0.00000400
Ge	0.20492900	-0.13734100	0.00000000
Cl	2.38804400	0.20704600	0.00000200

---

**ClH<sub>3</sub>Ge...C<sub>2</sub>H<sub>4</sub>**

---

H	-0.17106300	-0.00095300	1.46094800
H	-0.16882800	-1.27011400	-0.74050800
H	-0.16888600	1.27097900	-0.73889400
C	-3.05265100	0.67566200	0.01083300
H	-2.91799300	1.24334700	0.93568500
H	-3.19616100	1.24380100	-0.91189000
C	-3.05277500	-0.67559700	0.01082900
H	-3.19639800	-1.24370000	-0.91189800
H	-2.91823800	-1.24331000	0.93568100
Ge	0.24517800	-0.00002300	-0.00593000

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Cl	2.44261400	0.00001800	0.00180500
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**ClH<sub>3</sub>Ge•••O(CH<sub>3</sub>)<sub>2</sub>**

---

H	-0.01131200	-0.00001700	1.33083700
H	-0.26717500	1.29182600	-0.87651900
H	-0.26717200	-1.29179600	-0.87656000
O	2.02275700	-0.00000100	-0.39393200
C	2.58230200	1.17829100	0.19882000
H	2.11811400	2.04008100	-0.29747700
H	2.36536300	1.20923600	1.28219900
H	3.67428500	1.20451300	0.04402100
Ge	-0.51918300	0.00000200	-0.10962900
Cl	-2.72504000	-0.00000300	0.15520600
C	2.58230000	-1.17829400	0.19881900
H	2.11810200	-2.04008300	-0.29747200
H	3.67428100	-1.20452300	0.04401000
H	2.36537000	-1.20923500	1.28220000

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**CNH<sub>3</sub>Ge•••OH<sub>2</sub>**

---

H	0.46758800	1.43614700	0.00975500
H	0.42040400	-0.75562500	-1.27843800
H	0.42199000	-0.77453500	1.26545700
O	2.95933800	0.03136400	0.00448900
H	3.48126000	0.84434800	-0.01082600
H	3.61786000	-0.67533900	-0.01060600
Ge	0.03654500	-0.02404900	-0.00069400
C	-1.91719600	0.01974200	0.00049500
N	-3.10715400	0.04645700	0.00114200

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**CNH<sub>3</sub>Ge•••SH<sub>2</sub>**

---

H	-0.08368400	-1.26828400	-0.74520300
H	-0.06173400	-0.00002700	1.44848600

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H	-0.08368000	1.26830600	-0.74515800
H	3.29045100	-0.97542400	0.82080200
H	3.29044100	0.97544300	0.82078500
S	3.10777700	0.00000000	-0.09485200
Ge	-0.49838700	-0.00000100	-0.01103200
C	-2.44594700	0.00000100	0.01242900
N	-3.63602200	0.00000300	0.02805000

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---

**CNH<sub>3</sub>Ge...NH<sub>3</sub>**

---

H	0.41524900	1.46528100	0.20082800
H	0.41527200	-0.55870800	-1.36936100
H	0.41526200	-0.90653900	1.16855600
N	2.90104100	-0.00000900	-0.00000600
H	3.29594100	0.35588200	0.87173700
H	3.29588300	0.57697200	-0.74414000
H	3.29580400	-0.93296400	-0.12767100
Ge	0.05539300	0.00000900	0.00000600
C	-1.91370900	-0.00000700	-0.00000400
N	-3.10443100	-0.00001700	-0.00001100

---

---

**CNH<sub>3</sub>Ge...PH<sub>3</sub>**

---

H	-0.12404100	-1.10074500	-0.96380600
H	-0.12403400	-0.28431000	1.43516700
H	-0.12403700	1.38505100	-0.47137100
P	3.13439200	0.00000000	0.00000300
H	3.88990400	1.14352000	-0.38915300
H	3.88989100	-0.90879100	-0.79573400
H	3.88988100	-0.23474400	1.18491100
Ge	-0.54804400	0.00000100	-0.00000400
C	-2.49575100	0.00000200	0.00000100
N	-3.68593300	-0.00000400	0.00001100

---

---

**CNH<sub>3</sub>Ge...CO**

---

H	-0.03985000	1.46106200	0.04946500
H	-0.04023200	-0.77296500	1.24043400
H	-0.04028600	-0.68736900	-1.28975900
Ge	0.38977400	0.00017100	0.00003600
O	-4.13757000	-0.00056000	-0.00007100
C	-2.98840900	0.00042700	0.00001400
C	2.33442300	-0.00020500	-0.00002400
N	3.52458100	-0.00043500	-0.00009300

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---

**CNH<sub>3</sub>Ge...NCH**

---

H	-0.10092800	-0.22048700	-1.45126500
H	-0.10078500	1.36720200	0.53470500
H	-0.10086700	-1.14654900	0.91669500
H	-4.94767300	-0.00026600	-0.00039700
N	-2.68837200	0.00006400	0.00014700
C	-3.86966400	-0.00011100	-0.00014200
Ge	0.30075700	0.00004100	0.00003300
C	2.25618000	-0.00004100	-0.00005200
N	3.44650400	-0.00010900	-0.00009200

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---

**CNH<sub>3</sub>Ge...OHCH<sub>3</sub>**

---

H	-0.15659100	-0.67467700	1.16370500
H	-0.10421100	-0.34911100	-1.36035600
H	0.22717300	1.65621100	0.19272500
O	-2.37600200	0.54546100	-0.09150300
C	-3.05982900	-0.71737600	0.02103900
H	-2.57548400	-1.39302100	-0.69553800
H	-2.96427500	-1.14002700	1.03433800
H	-4.12419800	-0.62182300	-0.24299800
H	-2.80186000	1.17249900	0.50878000
Ge	0.36737200	0.15349600	-0.00360500
C	2.29962000	-0.17134500	0.00489000

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Ge	0.35006900	0.13947200	-0.00671200
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**CNH<sub>3</sub>Ge•••OCH<sub>2</sub>**

---

H	0.01033400	-0.91416200	-1.27606900
H	-0.29004400	1.26671000	-0.00039200
H	0.01023100	-0.91350000	1.27643800
H	-4.33820300	0.48032300	0.00005700
H	-2.78995600	1.57321700	-0.00005200
C	-3.23227000	0.55449000	0.00000300
O	-2.52578900	-0.44774400	0.00000600
Ge	0.30276200	-0.13915600	-0.00000500
C	2.23641600	0.15022100	0.00000400
N	3.41295700	0.33058500	0.00001200

---

---

**CNH<sub>3</sub>Ge•••C<sub>2</sub>H<sub>4</sub>**

---

H	0.08373000	0.00132800	1.45551000
H	0.07861700	1.26597400	-0.73949400
H	0.07862100	-1.26738500	-0.73713000
C	3.05860600	-0.67534100	0.01104600
H	2.92974700	-1.24333000	0.93653700
H	3.19645100	-1.24367500	-0.91247200
C	3.05861700	0.67539000	0.01104700
H	3.19647300	1.24372100	-0.91246900
H	2.92975800	1.24337500	0.93653900
Ge	-0.34559700	-0.00002200	-0.00632500
C	-2.29279400	-0.00000500	0.00191100
N	-3.48298100	0.00006400	0.00447800

---

---

**CNH<sub>3</sub>Ge•••O(CH<sub>3</sub>)<sub>2</sub>**

---

H	-0.10282500	-0.00005700	1.31491600
H	-0.34995400	1.28469500	-0.88243200
H	-0.34997500	-1.28462700	-0.88254700

---

O	2.01729000	0.00000000	-0.39322000
C	2.55550200	1.17699800	0.21712500
H	2.10765200	2.03927600	-0.29367800
H	2.30396300	1.20958700	1.29333400
H	3.65251900	1.20733400	0.10027600
Ge	-0.63358100	0.00000200	-0.11594700
C	-2.58321900	0.00000300	0.11506100
N	-3.76511500	-0.00000300	0.25863100
C	2.55548500	-1.17700600	0.21712400
H	2.10761400	-2.03927600	-0.29367600
H	3.65250000	-1.20736300	0.10026400
H	2.30395400	-1.20958700	1.29333500

### 15. Tin Bonded Complexes

FH <sub>3</sub> Sn•••OH <sub>2</sub>			
H	-0.20916400	1.43771900	0.80227000
H	-0.20893400	-1.43525000	0.80691500
H	-0.12667800	-0.00280200	-1.68152600
O	-2.60404700	0.00008100	-0.04776400
H	-3.06475900	0.76566700	0.32187200
H	-3.06524500	-0.76495600	0.32240300
F	2.13728900	0.00023400	0.06392500
Sn	0.16543100	-0.00006300	-0.01530300

FH <sub>3</sub> Sn•••SH <sub>2</sub>			
H	0.19469500	1.43100600	-0.82921500
H	0.16901100	-0.00029600	1.64301700
H	0.19470100	-1.43071000	-0.82972600
S	-2.87106400	0.00000100	-0.10076500
H	-3.05074700	0.97585600	0.81567800
H	-3.05071900	-0.97588600	0.81565000
F	2.53874200	-0.00000300	0.02232400
Sn	0.57262800	0.00000100	-0.00408200

---

**FH<sub>3</sub>Sn•••NH<sub>3</sub>**

---

H	-0.13374300	1.64949200	-0.28295500
H	-0.13378300	-0.57969700	1.56996400
H	-0.13376300	-1.06978200	-1.28702300
F	2.13779500	-0.00001700	0.00001400
N	-2.51701200	-0.00000500	0.00000400
H	-2.90571100	0.32727000	-0.88565400
H	-2.90565300	0.60334300	0.72630800
H	-2.90559300	-0.93069300	0.15941300
Sn	0.14994300	0.00000500	-0.00000400

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---

**FH<sub>3</sub>Sn•••PH<sub>3</sub>**

---

H	0.22143500	-0.00152800	-1.64994300
H	0.22145500	1.42966300	0.82365200
H	0.22145400	-1.42813500	0.82629900
F	2.57695400	0.00000000	-0.00001000
P	-2.89661000	0.00000000	0.00000100
H	-3.64135000	-1.05107900	-0.60565600
H	-3.64135100	1.05003300	-0.60746500
H	-3.64140500	0.00104500	1.21305500
Sn	0.61032700	0.00000000	0.00000300

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---

**FH<sub>3</sub>Sn•••CO**

---

H	-0.09266200	1.58713600	0.43365700
H	-0.09274900	-0.41804600	-1.59136100
H	-0.09275800	-1.16917500	1.15768300
F	-2.46197600	0.00006100	0.00001300
O	3.87866300	0.00005000	0.00000600
C	2.73037200	-0.00004000	0.00000000
Sn	-0.49951200	-0.00001200	-0.00000300

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---

**FH<sub>3</sub>Sn•••NCH**

---

H	-0.07629100	-0.01524100	-1.65580900
H	-0.07652700	-1.42642100	0.84116400
H	-0.07647400	1.44162600	0.81478600
F	-2.40731000	0.00003900	-0.00014100
H	4.70272200	0.00013500	-0.00040500
N	2.44456500	-0.00005800	0.00016000
C	3.62453100	0.00004500	-0.00013800
Sn	-0.43333600	-0.00000600	0.00002500

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---

**FH<sub>3</sub>Sn•••OHCH<sub>3</sub>**

---

H	-0.04527600	-0.78131100	1.37390300
H	0.02897500	-0.62466600	-1.48917400
H	0.49183900	1.75026900	0.10762400
F	2.41888200	-0.33856100	0.02971500
O	-2.10758400	0.58817300	-0.09788100
C	-2.94077700	-0.58598200	0.02679100
H	-2.59771600	-1.28425300	-0.74674800
H	-2.82522800	-1.05274000	1.01746700
H	-3.99665500	-0.33707000	-0.15413600
H	-2.40961900	1.24680700	0.54363800
Sn	0.48178200	0.05881000	-0.00595400

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---

**FH<sub>3</sub>Sn•••OCH<sub>2</sub>**

---

H	0.25166800	-0.94073600	-1.44141900
H	-0.23916000	1.49437200	0.00000400
H	0.25167300	-0.94074600	1.44141300
F	2.35783700	0.34902800	0.00000000
H	-4.12028200	0.32010600	-0.00000500
H	-2.64235000	1.51259500	0.00000500
C	-3.02381800	0.47113900	0.00000000
O	-2.25577900	-0.48745100	0.00000000
Sn	0.42934100	-0.07028100	0.00000000

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---

**FH<sub>3</sub>Sn•••C<sub>2</sub>H<sub>4</sub>**

---

H	0.04929300	-0.00002500	1.63617500
H	0.07845800	-1.42708600	-0.83825800
H	0.07842300	1.42710300	-0.83820800
C	-2.82223700	0.67603800	0.01525900
H	-2.69977200	1.24324400	0.94222900
H	-2.95745900	1.24432000	-0.90857900
C	-2.82221500	-0.67604000	0.01526400
H	-2.95741300	-1.24433500	-0.90857000
H	-2.69971200	-1.24323700	0.94223400
Sn	0.46247100	-0.00000100	-0.00805300
F	2.42792400	0.00001000	0.02138900

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---

**FH<sub>3</sub>Sn•••O(CH<sub>3</sub>)<sub>2</sub>**

---

H	0.15749400	-0.00000700	1.56239600
H	0.50215100	-1.45182100	-0.90162700
H	0.50214300	1.45180500	-0.90164300
F	2.66395200	0.00000800	0.23153600
O	-1.86964300	0.00000100	-0.38704000
C	-2.47354700	-1.18154100	0.16200300
H	-1.97678000	-2.04196700	-0.30382300
H	-2.33455800	-1.21388300	1.25740900
H	-3.55044600	-1.20036900	-0.07378300
Sn	0.70451700	-0.00000200	-0.04900500
C	-2.47353800	1.18154700	0.16200200
H	-1.97678000	2.04196900	-0.30384000
H	-3.55044100	1.20037200	-0.07376500
H	-2.33453100	1.21390100	1.25740500

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**ClH<sub>3</sub>Sn•••OH<sub>2</sub>**

---

H	-0.53569200	1.61195600	0.21295900
H	-0.49781300	-1.03864900	1.28944500

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H	-0.47375000	-0.65035600	-1.54361200
O	-2.91598600	0.03385300	-0.04158500
H	-3.34106400	0.85364200	0.24533700
H	-3.45407200	-0.66958900	0.34644700
Cl	2.26845600	0.03213300	0.02543300
Sn	-0.13866900	-0.01848200	-0.01300500

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**ClH<sub>3</sub>Sn•••SH<sub>2</sub>**

---

H	-0.13547900	1.42475300	-0.83001700
H	-0.15845000	0.00006600	1.63123900
H	-0.13547900	-1.42481800	-0.82990600
S	-3.20596800	0.00000000	-0.09435700
H	-3.36230600	0.97575700	0.82647800
H	-3.36230300	-0.97574400	0.82649300
Cl	2.65993800	0.00000100	0.01919500
Sn	0.26461100	0.00000000	-0.00881800

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---

**ClH<sub>3</sub>Sn•••NH<sub>3</sub>**

---

H	-0.45134900	1.51100200	-0.70862300
H	-0.45136200	-0.14181700	1.66286800
H	-0.45135100	-1.36918200	-0.95425900
Cl	2.27500600	-0.00000200	0.00000800
N	-2.82108000	-0.00000200	0.00000800
H	-3.21018400	0.08046500	-0.94074500
H	-3.21013100	0.77448800	0.54009700
H	-3.21012200	-0.85496900	0.40071800
Sn	-0.15886100	0.00000100	-0.00000500

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---

**ClH<sub>3</sub>Sn•••PH<sub>3</sub>**

---

H	-0.10838200	1.64312200	-0.02088400
H	-0.11013900	-0.80219500	1.43262000
H	-0.11011200	-0.83833000	-1.41180200
Cl	2.69756700	-0.00115900	0.00003000

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P	-3.24327300	-0.00027100	0.00000700
H	-3.99213300	0.58985800	-1.05729100
H	-3.99203000	0.61620000	1.04224000
H	-3.98543800	-1.21515200	0.01528700
Sn	0.30177400	0.00060500	-0.00001600

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**ClH<sub>3</sub>Sn...CO**

---

H	-0.24501100	0.96555300	-1.32270900
H	-0.24502200	0.66271300	1.49754600
H	-0.24499800	-1.62828400	-0.17484900
Cl	2.57310900	0.00000800	0.00000600
O	-4.22265400	0.00000300	0.00001000
C	-3.07424500	0.00001000	-0.00000600
Sn	0.18437700	-0.00000400	-0.00000300

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---

**ClH<sub>3</sub>Sn...NCH**

---

H	0.25551000	0.91713600	-1.37127700
H	0.25532900	-1.64624700	-0.10862000
H	0.25542000	0.72894500	1.47998800
Cl	-2.52592100	0.00009900	-0.00004900
H	5.02448200	0.00042600	-0.00024500
N	2.76612600	-0.00012200	0.00007900
C	3.94622400	0.00017000	-0.00009300
Sn	-0.11780600	-0.00004200	0.00002000

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---

**ClH<sub>3</sub>Sn...OHCH<sub>3</sub>**

---

H	0.32369200	-0.80125300	-1.32929500
H	0.25731100	-0.52908900	1.51488600
H	-0.08536100	1.79409800	-0.16852000
Cl	-2.56142600	-0.25266700	-0.02082300
O	2.43787500	0.52197100	0.08444500
C	3.21708900	-0.68995200	-0.02800500
H	2.83812800	-1.36681000	0.74788000

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H	3.08547900	-1.15737800	-1.01635600
H	4.28222900	-0.48856400	0.15747700
H	2.76996700	1.15999300	-0.56319400
Sn	-0.17465500	0.11296600	0.01007200

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**ClH<sub>3</sub>Sn···OCH<sub>2</sub>**

---

H	-0.11936800	-0.98150100	-1.43639500
H	-0.47939000	1.46604400	0.00002800
H	-0.11936400	-0.98152100	1.43638800
Cl	2.49943800	0.25717200	-0.00000300
H	-4.41378200	0.47858800	-0.00000200
H	-2.88374300	1.60298800	0.00000000
C	-3.31154900	0.57953100	-0.00000200
O	-2.58731300	-0.41251600	-0.00000400
Sn	0.12186000	-0.12267200	0.00000100

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**ClH<sub>3</sub>Sn···C<sub>2</sub>H<sub>4</sub>**

---

H	-0.26768100	0.00001200	1.63074900
H	-0.25472200	-1.42050700	-0.83158700
H	-0.25472300	1.42047700	-0.83162800
C	-3.15312900	0.67600200	0.01634000
H	-3.03067300	1.24334100	0.94323400
H	-3.28755100	1.24418300	-0.90771500
C	-3.15314100	-0.67599100	0.01633800
H	-3.28757400	-1.24416700	-0.90771900
H	-3.03069400	-1.24333700	0.94322900
Sn	0.15770600	-0.00000300	-0.00817800
Cl	2.55093700	0.00000400	0.01025000

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**ClH<sub>3</sub>Sn···O(CH<sub>3</sub>)<sub>2</sub>**

---

H	-0.10589100	-0.00001100	1.53295000
H	0.16082000	-1.44762700	-0.93164100
H	0.16081200	1.44759100	-0.93167600

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---

Cl	2.80631200	0.00000900	0.17710200
O	-2.17777300	0.00000300	-0.35558300
C	-2.76881400	-1.18149500	0.20759500
H	-2.28270600	-2.04209000	-0.26911900
H	-2.60494400	-1.21317400	1.29961100
H	-3.85076800	-1.20062100	-0.00355000
Sn	0.40403100	-0.00000600	-0.08761400
C	-2.76879300	1.18151300	0.20759000
H	-2.28270000	2.04209800	-0.26915700
H	-3.85075400	1.20063600	-0.00351900
H	-2.60488900	1.21321500	1.29960100

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**CNH<sub>3</sub>Sn•••OH<sub>2</sub>**

---

H	-0.50210500	1.61198900	-0.07045500
H	-0.43996800	-0.78567700	1.46524200
H	-0.44744300	-0.92364200	-1.37842700
O	-2.92091600	0.05066500	-0.05211900
H	-3.38423700	0.87198800	0.16048000
H	-3.53995400	-0.64940000	0.19467100
Sn	-0.07457200	-0.02298000	0.00085900
C	2.08222500	0.03128800	-0.00025500
N	3.27375700	0.06152600	0.00057800

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**CNH<sub>3</sub>Sn•••SH<sub>2</sub>**

---

H	0.06738400	-1.41872200	-0.82650400
H	0.08794900	-0.00003400	1.62442000
H	0.06738300	1.41876300	-0.82644000
S	3.22363700	-0.00000200	-0.09278500
H	3.38106500	-0.97565300	0.82777600
H	3.38106800	0.97564200	0.82778100
Sn	-0.35422500	0.00000200	-0.00885200
C	-2.50079000	-0.00000300	0.01511100
N	-3.69243400	-0.00000600	0.02992300

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---

**CNH<sub>3</sub>Sn...FH**

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H	-0.47116700	-0.83630900	-1.41216300
H	-0.50408000	1.61742600	-0.00029000
H	-0.47116400	-0.83577000	1.41251400
Sn	-0.04512400	-0.00850600	0.00001700
C	2.09765000	0.01014300	-0.00000100
N	3.28916900	0.01854800	-0.00006300
F	-3.11842000	0.08677900	-0.00004100
H	-3.84168300	-0.49174000	-0.00009900

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**CNH<sub>3</sub>Sn...PH<sub>3</sub>**

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H	-0.03161900	1.56144500	0.48440200
H	-0.03166400	-1.20017300	1.11005600
H	-0.03168800	-0.36119700	-1.59439600
P	-3.28950600	-0.00000900	-0.00001100
H	-4.04063000	-0.26735200	-1.18004100
H	-4.04092700	1.15541100	0.35846100
H	-4.04072700	-0.88835300	0.82135600
Sn	0.40185800	0.00001700	0.00001600
C	2.54807500	-0.00002600	-0.00001900
N	3.73978700	-0.00005300	-0.00005100

---

---

**CNH<sub>3</sub>Sn...CO**

---

H	0.17915500	-1.39669500	0.84342000
H	0.17913300	1.42882300	0.78780700
H	0.17915100	-0.03209900	-1.63129500
O	4.23594500	-0.00003300	0.00003200
C	3.08728700	0.00002000	-0.00003200
Sn	-0.26608000	0.00000800	-0.00000300
C	-2.40792000	-0.00001100	0.00001500
N	-3.59959800	-0.00002900	0.00001100

---

---

**CNH<sub>3</sub>Sn...C<sub>2</sub>H<sub>2</sub>**

---

H	0.26328300	-0.82300900	1.41509300
H	0.27936200	1.62456000	0.00001600
H	0.26329200	-0.82294100	-1.41513000
C	3.30079500	-0.60573900	-0.00000300
H	3.31614000	-1.68168300	-0.00000800
C	3.30198600	0.62679600	0.00000200
H	3.31705600	1.70263000	0.00000500
Sn	-0.17235600	-0.00611500	0.00000100
C	-2.31514600	0.00908000	0.00000500
N	-3.50673300	0.01790700	-0.00000500

---

---

**CNH<sub>3</sub>Sn...OHCH<sub>3</sub>**

---

H	0.26383000	-0.80785900	-1.31778700
H	0.20675100	-0.50675800	1.51306600
H	-0.12704000	1.79010500	-0.18377000
O	2.43381600	0.50538900	0.08185200
C	3.18921800	-0.72028800	-0.02620200
H	2.77374200	-1.40126300	0.72726800
H	3.07820100	-1.17189800	-1.02463700
H	4.25319900	-0.54807700	0.19348800
H	2.80132000	1.14549900	-0.54378700
Sn	-0.25049900	0.11397300	0.00807900
C	-2.39066900	-0.20641500	-0.01269700
N	-3.56955500	-0.38304100	-0.02703100

---

---

**CNH<sub>3</sub>Sn...OCH<sub>2</sub>**

---

H	0.07547400	-0.98012500	1.43055300
H	0.41767300	1.46066100	0.00011900
H	0.07548500	-0.97988500	-1.43071900
H	4.39430700	0.52651400	0.00005300
H	2.84740000	1.62555500	0.00021300
C	3.29010600	0.60793600	0.00007900

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---

O	2.58135500	-0.39446700	-0.00003700
Sn	-0.19414700	-0.12221100	-0.00001200
C	-2.32704900	0.20568900	0.00001000
N	-3.50459500	0.39025600	0.00002000

---

---

**CNH<sub>3</sub>Sn...C<sub>2</sub>H<sub>4</sub>**

---

H	0.20703200	-0.00010800	1.62265100
H	0.19076200	1.41507700	-0.82920000
H	0.19076400	-1.41494400	-0.82940200
C	3.16906600	-0.67567700	0.01862400
H	3.04036400	-1.24332900	0.94446900
H	3.30837200	-1.24397600	-0.90470900
C	3.16907300	0.67565000	0.01862600
H	3.30838400	1.24395000	-0.90470600
H	3.04037500	1.24330000	0.94447300
Sn	-0.23943500	0.00000800	-0.00904500
C	-2.38471500	-0.00000200	0.00968100
N	-3.57640800	-0.00002800	0.01815200

---

---

**CNH<sub>3</sub>Sn...O(CH<sub>3</sub>)<sub>2</sub>**

---

H	0.03991300	0.00001100	1.52557200
H	-0.21460900	1.44144500	-0.93139100
H	-0.21461900	-1.44149400	-0.93133400
O	2.15525900	0.00000300	-0.35063000
C	2.73752200	1.18027000	0.22009800
H	2.25626900	2.04140900	-0.26094000
H	2.56130200	1.21213600	1.31047600
H	3.82238900	1.20357500	0.02327900
Sn	-0.48701400	-0.00000600	-0.08783200
C	-2.64115200	0.00000600	0.14247600
N	-3.82650400	0.00001400	0.27029600
C	2.73754500	-1.18025100	0.22010500

---

H	2.56129400	-1.21212900	1.31047800
H	2.25633400	-2.04140000	-0.26095500
H	3.82241900	-1.20351700	0.02331600

### 16. Lead Bonded Complexes

<b>FH<sub>3</sub>Pb•••OH<sub>2</sub></b>			
H	-0.26197300	1.67147600	0.03124100
H	-0.15036400	-0.89953900	1.45754900
H	-0.14494700	-0.84941700	-1.48770400
O	-2.76152400	0.03584000	-0.02950500
H	-3.24476700	0.86277000	0.09982600
H	-3.41399000	-0.65736400	0.13622100
F	2.19143200	0.08435700	0.00797900
Pb	0.11689500	-0.01431500	-0.00088900

<b>FH<sub>3</sub>Pb•••SH<sub>2</sub></b>			
H	0.09602600	1.47238100	-0.85158600
H	0.06233500	-0.00182800	1.69011100
H	0.09621800	-1.47064100	-0.85471800
S	-3.09070100	0.00000500	-0.09822200
H	-3.26271800	0.97599800	0.81959200
H	-3.26283100	-0.97558300	0.82000200
F	2.47775900	0.00010000	0.03071300
Pb	0.40759000	-0.00001600	-0.00400300

<b>FH<sub>3</sub>Pb•••NH<sub>3</sub></b>			
H	-0.14957000	1.65053600	-0.44050900
H	-0.14959400	-0.44377400	1.64965400
H	-0.14958200	-1.20675400	-1.20915200
F	2.20211600	-0.00001100	0.00001100
N	-2.72600300	-0.00000400	0.00000400
H	-3.11851500	0.24506700	-0.91017900



---

H	-3.11848700	0.66569500	0.66735600
H	-3.11845800	-0.91080400	0.24286400
Pb	0.11057500	0.00000200	-0.00000200

---

---

**FH<sub>3</sub>Pb•••PH<sub>3</sub>**

---

H	0.10999400	0.00012100	-1.69714600
H	0.11000900	1.46971500	0.84868100
H	0.11000900	-1.46983500	0.84847200
F	2.50568500	0.00000000	-0.00000900
P	-3.12684800	0.00000000	-0.00000100
H	-3.87266800	-1.04985400	-0.60645000
H	-3.87266900	1.05011900	-0.60599000
H	-3.87268900	-0.00026600	1.21241000
Pb	0.43462900	0.00000000	0.00000100

---

---

**FH<sub>3</sub>Pb•••CO**

---

H	-0.00930500	1.65865200	0.34725200
H	-0.00862800	-0.52825100	-1.60993900
H	-0.00822700	-1.12980400	1.26253900
F	-2.41395100	-0.00066700	0.00010500
O	4.08324200	-0.00055300	0.00001600
C	2.93498400	0.00043600	0.00005900
Pb	-0.34785500	0.00008800	-0.00001600

---

---

**FH<sub>3</sub>Pb•••NCH**

---

H	0.00310000	1.14433100	1.25725400
H	0.00330600	-1.66104500	0.36237400
H	0.00321800	0.51663900	-1.61968800
F	2.38485800	0.00012000	0.00006300
H	-4.91557300	0.00031600	0.00018500
N	-2.65698000	-0.00011800	-0.00007100
C	-3.83729400	0.00011200	0.00006400
Pb	0.30566900	-0.00001400	-0.00000700

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---

**FH<sub>3</sub>Pb•••OHCH<sub>3</sub>**

---

H	-0.15636300	-0.80740300	1.41107400
H	-0.08709800	-0.64538200	-1.52098000
H	0.44187300	1.77183100	0.10815100
F	2.38068000	-0.41410300	0.02636300
O	-2.37998900	0.58461500	-0.09071600
C	-3.13441900	-0.64106300	0.02268100
H	-2.72184700	-1.32312100	-0.73150200
H	-3.01873000	-1.09123200	1.02142100
H	-4.19991900	-0.47157700	-0.19256700
H	-2.75515900	1.22935800	0.52517300
Pb	0.35265300	0.05163300	-0.00327300

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---

**FH<sub>3</sub>Pb•••OCH<sub>2</sub>**

---

H	0.20161800	-0.93901800	-1.47980700
H	-0.36129600	1.54024800	0.00004900
H	0.20163600	-0.93910800	1.47975400
F	2.32871700	0.43226700	0.00000200
H	-4.33062000	0.40662200	0.00000000
H	-2.80950300	1.54173000	-0.00000100
C	-3.22842100	0.51390500	0.00000100
O	-2.49622500	-0.47159400	0.00000100
Pb	0.31073200	-0.05867700	0.00000000

---

---

**FH<sub>3</sub>Pb•••C<sub>2</sub>H<sub>4</sub>**

---

H	-0.03091900	-0.00001500	1.68649100
H	0.00342800	-1.46885100	-0.86108300
H	0.00342700	1.46886600	-0.86105600
C	-2.96899200	0.67609800	0.01855800
H	-2.84125800	1.24300000	0.94511200
H	-3.11002500	1.24441700	-0.90449600
C	-2.96899000	-0.67609900	0.01855800

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H	-3.11002100	-1.24441900	-0.90449600
H	-2.84125400	-1.24300000	0.94511300
Pb	0.31776600	0.00000000	-0.00650500
F	2.38863500	0.00000000	0.02946100

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---

**FH<sub>3</sub>Pb•••O(CH<sub>3</sub>)<sub>2</sub>**

---

H	0.02540400	-0.00000400	1.59928200
H	-0.38264100	1.48436400	-0.91445200
H	-0.38261100	-1.48435800	-0.91445500
F	-2.58446300	-0.00000700	0.30433700
O	2.17499300	-0.00000100	-0.39986500
C	2.73819600	1.18034300	0.18805300
H	2.27017600	2.04059000	-0.30786000
H	2.52838400	1.21297300	1.27269200
H	3.82898200	1.20705100	0.02564300
Pb	-0.53065200	0.00000100	-0.04326900
C	2.73820600	-1.18034100	0.18805100
H	2.27019300	-2.04059200	-0.30786000
H	3.82899300	-1.20704000	0.02563600
H	2.52840200	-1.21297300	1.27269100

---

---

**ClH<sub>3</sub>Pb•••OH<sub>2</sub>**

---

H	0.48556600	1.66201100	-0.00241300
H	0.40561900	-0.87660200	-1.46707300
H	0.40633600	-0.87447800	1.46779400
O	2.97590700	0.06946000	0.00941100
H	3.46220800	0.90379300	-0.03030000
H	3.65736400	-0.61394000	-0.03988300
Cl	-2.39792500	0.06006100	-0.00063200
Pb	0.10415100	-0.02167700	0.00008900

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**ClH<sub>3</sub>Pb•••SH<sub>2</sub>**

---

H	-0.16165900	1.46491100	-0.85151800
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H	-0.18637700	-0.00007200	1.67996300
H	-0.16165900	-1.46483800	-0.85164300
S	-3.32331000	0.00000000	-0.09073000
H	-3.48021700	0.97572900	0.83013600
H	-3.48020800	-0.97573600	0.83013000
Cl	2.67753800	-0.00000100	0.02420000
Pb	0.18445000	0.00000000	-0.00727800

**ClH<sub>3</sub>Pb...NH<sub>3</sub>**

H	-0.39359600	1.64511700	-0.44100600
H	-0.39360700	-0.44063400	1.64521000
H	-0.39360100	-1.20447600	-1.20421000
Cl	2.41389300	-0.00000500	0.00000500
N	-2.93423500	-0.00000600	0.00000600
H	-3.32684100	0.24407200	-0.91053800
H	-3.32681800	0.66650400	0.66667400
H	-3.32679500	-0.91061700	0.24390400
Pb	-0.11384500	0.00000200	-0.00000200

**ClH<sub>3</sub>Pb...PH<sub>3</sub>**

H	-0.14492000	1.62687000	0.45396700
H	-0.14492500	-1.20654900	1.18195800
H	-0.14499600	-0.42030000	-1.63584600
Cl	2.70647200	-0.00001600	-0.00005400
P	-3.37627100	-0.00000500	-0.00001600
H	-4.12388100	1.16691200	0.32549000
H	-4.12386300	-0.86550800	0.84767400
H	-4.12359600	-0.30152200	-1.17354300
Pb	0.21268600	0.00000500	0.00001800

**ClH<sub>3</sub>Pb...CO**

H	-0.25159400	0.91556700	-1.41571800
H	-0.25159700	0.76827700	1.50075600

---

H	-0.25154900	-1.68385000	-0.08503600
Cl	2.60764200	0.00002000	0.00000200
O	-4.31739300	0.00001300	0.00000300
C	-3.16907800	0.00001600	-0.00000100
Pb	0.12168800	-0.00000700	-0.00000100

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---

**ClH<sub>3</sub>Pb...NCH**

---

H	0.25030300	0.64542100	-1.56580100
H	0.25011800	-1.67882700	0.22395100
H	0.25024900	1.03328000	1.34191700
Cl	-2.58449300	0.00010900	-0.00006700
H	5.13228400	0.00040200	-0.00030300
N	2.87358300	-0.00009300	0.00009000
C	4.05392500	0.00017200	-0.00012200
Pb	-0.07786800	-0.00003100	0.00001800

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**ClH<sub>3</sub>Pb...OHCH<sub>3</sub>**

---

H	-0.36188400	-0.88492900	1.33190700
H	-0.28176700	-0.50874100	-1.56864400
H	0.08938800	1.80361900	0.22915000
Cl	2.60446400	-0.31692900	0.01908800
O	-2.61531600	0.49020200	-0.07711900
C	-3.32108300	-0.76532300	0.02372700
H	-2.86512000	-1.43116300	-0.71997400
H	-3.20728200	-1.20855800	1.02568600
H	-4.38777600	-0.63975100	-0.21414200
H	-3.02377500	1.11806700	0.53522300
Pb	0.12940700	0.09523900	-0.00572100

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---

**ClH<sub>3</sub>Pb...OCH<sub>2</sub>**

---

H	-0.10697600	-0.97239100	-1.47440800
H	-0.50690400	1.52719400	0.00005300
H	-0.10696700	-0.97245800	1.47437400

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Cl	2.55414300	0.32327700	-0.00000400
H	-4.52731000	0.58197800	-0.00000500
H	-2.96253000	1.65595600	0.00000600
C	-3.42179700	0.64544800	-0.00000200
O	-2.72913300	-0.36827500	-0.00000600
Pb	0.08724500	-0.10051800	0.00000100

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**ClH<sub>3</sub>Pb...C<sub>2</sub>H<sub>4</sub>**

---

H	-0.27317000	-0.00008700	1.67962300
H	-0.25742200	-1.46172900	-0.85546300
H	-0.25743400	1.46181500	-0.85531600
C	-3.19956400	0.67611300	0.02196200
H	-3.06875300	1.24309400	0.94804800
H	-3.34385800	1.24437200	-0.90064900
C	-3.19956200	-0.67612400	0.02196000
H	-3.34385600	-1.24437900	-0.90065300
H	-3.06875600	-1.24310300	0.94804700
Pb	0.09724700	0.00000200	-0.00735900
Cl	2.59021900	-0.00000600	0.01625200

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---

**ClH<sub>3</sub>Pb...O(CH<sub>3</sub>)<sub>2</sub>**

---

H	0.20419600	-0.00001300	1.57825200
H	-0.10158500	1.47982900	-0.93947000
H	-0.10157200	-1.47979300	-0.93951500
Cl	-2.80215900	-0.00001100	0.23650600
O	2.39529000	-0.00000400	-0.34990300
C	2.94925100	1.18039800	0.24710200
H	2.48989500	2.04078700	-0.25662000
H	2.72178300	1.21283300	1.32818600
H	4.04247200	1.20635600	0.10242100
Pb	-0.31007300	0.00000400	-0.07602200
C	2.94925200	-1.18041000	0.24709500
H	2.48989300	-2.04079700	-0.25662800

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H	4.04247200	-1.20636700	0.10240900
H	2.72179100	-1.21284800	1.32818100

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---

**CNH<sub>3</sub>Pb•••OH<sub>2</sub>**

---

H	0.47359700	1.65109500	-0.00006500
H	0.39858800	-0.86913600	-1.45755300
H	0.39858100	-0.86902000	1.45762600
O	3.01709200	0.07082400	-0.00000600
H	3.50817300	0.90328500	-0.00000100
H	3.70102000	-0.61188100	-0.00002600
Pb	0.04952500	-0.02013100	0.00000200
C	-2.17948600	0.04826200	-0.00000500
N	-3.37154500	0.08432100	-0.00000800

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---

**CNH<sub>3</sub>Pb•••SH<sub>2</sub>**

---

H	-0.13393000	1.45467200	-0.84424200
H	-0.15682900	-0.00122100	1.66749100
H	-0.13379900	-1.45355900	-0.84631100
S	-3.38866200	0.00002000	-0.08967300
H	-3.54636400	0.97585600	0.83061000
H	-3.54657000	-0.97520900	0.83121700
Pb	0.25827000	-0.00002500	-0.00699900
C	2.47781400	0.00006600	0.01992200
N	3.67014800	0.00011300	0.03576800

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---

**CNH<sub>3</sub>Pb•••NH<sub>3</sub>**

---

H	1.29605900	1.02184000	-0.53525500
H	0.48323200	-1.36002400	0.96293700
H	-1.41356500	0.83522200	0.56094500
N	0.94552000	1.28503200	2.55594800
H	0.21415000	1.82628500	3.01977600
H	1.72335300	1.93034400	2.40917500
H	1.27073500	0.60363800	3.24364700

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Pb	0.01690400	0.02297100	0.04569200
C	-0.68905600	-0.93646900	-1.86266100
N	-1.06348000	-1.44533500	-2.87480800

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---

**CNH<sub>3</sub>Pb•••PH<sub>3</sub>**

---

H	0.11235100	-1.45117000	-0.83924800
H	0.11234700	-0.00122800	1.67637600
H	0.11235200	1.45239700	-0.83712100
P	3.45759200	0.00000000	-0.00000300
H	4.21048400	1.04742700	-0.60378100
H	4.21048600	-1.04660700	-0.60519900
H	4.21046700	-0.00081800	1.20899500
Pb	-0.29086500	0.00000000	0.00000100
C	-2.51034400	0.00000100	-0.00000200
N	-3.70276400	0.00000000	-0.00000400

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**CNH<sub>3</sub>Pb•••CO**

---

H	0.22534400	1.67424600	0.00144300
H	0.22581200	-0.83553100	-1.45054900
H	0.22597000	-0.83812200	1.44894500
O	4.37225600	-0.00071300	0.00014000
C	3.22353800	0.00029800	-0.00000500
Pb	-0.18807300	0.00012400	-0.00003200
C	-2.40213700	-0.00036900	0.00008700
N	-3.59451000	-0.00065800	0.00016800

---

---

**CNH<sub>3</sub>Pb•••NCH**

---

H	0.23323500	-0.84044000	-1.45677200
H	0.23323700	-0.84139500	1.45622000
H	0.23321900	1.68182800	0.00055100
H	5.17401200	-0.00001200	0.00001200
N	2.91489300	-0.00000300	-0.00000400
C	4.09576000	-0.00000800	0.00000300

---



Pb	-0.14193100	0.00000200	0.00000000
C	-2.37425700	-0.00000700	0.00000100
N	-3.56694800	-0.00001100	0.00000200

---

**CNH<sub>3</sub>Pb...OHCH<sub>3</sub>**

---

H	-0.34388700	0.89260600	-1.30785100
H	-0.26898100	0.46542500	1.56611300
H	0.10320100	-1.79603500	-0.25837300
O	-2.65284900	-0.47563400	0.07868300
C	-3.31557200	0.80109800	-0.02098900
H	-2.79569500	1.47064700	0.67625000
H	-3.24199900	1.21416000	-1.03976000
H	-4.37206800	0.72688600	0.27777900
H	-3.11827100	-1.10300600	-0.49143900
Pb	0.19225400	-0.09539800	0.00317100
C	2.39654900	0.27444900	-0.00959000
N	3.57283000	0.47196100	-0.01838800

---

**CNH<sub>3</sub>Pb...OCH<sub>2</sub>**

---

H	0.09583400	-0.97070900	1.46401200
H	0.48395300	1.51317700	0.00008700
H	0.09583500	-0.97055000	-1.46410600
H	4.54077800	0.63316600	-0.00003800
H	2.95398700	1.67215300	0.00000500
C	3.43354500	0.67049100	-0.00002000
O	2.76239900	-0.35660800	-0.00002800
Pb	-0.14796500	-0.09739400	0.00000100
C	-2.34670100	0.27255600	0.00001900
N	-3.52250600	0.47195000	0.00002800

---

**CNH<sub>3</sub>Pb...C<sub>2</sub>H<sub>4</sub>**

---

H	-0.25282600	-0.00001500	1.66575000
H	-0.23343900	-1.45136800	-0.84935000

---

H	-0.23344100	1.45138100	-0.84932400
C	-3.25859400	0.67564600	0.02487500
H	-3.11181100	1.24303300	0.94825300
H	-3.41619700	1.24403500	-0.89551500
C	-3.25859500	-0.67564300	0.02487500
H	-3.41619900	-1.24403300	-0.89551400
H	-3.11181300	-1.24303000	0.94825300
Pb	0.16503600	0.00000000	-0.00793200
C	2.38454900	0.00000100	0.01561100
N	3.57695100	0.00000200	0.02653400

**CNH<sub>3</sub>Pb···O(CH<sub>3</sub>)<sub>2</sub>**

H	0.18099600	-0.00000200	1.56206400
H	-0.11926000	1.46904400	-0.93889800
H	-0.11931100	-1.46908100	-0.93888600
O	2.41563700	0.00001200	-0.35231900
C	2.94998200	1.17853600	0.26100000
H	2.50313600	2.03966700	-0.25292100
H	2.69320200	1.21021800	1.33592900
H	4.04729900	1.20974800	0.14864600
Pb	-0.37899500	-0.00001000	-0.07457300
C	-2.59927700	0.00002200	0.20184900
N	-3.78304200	0.00004700	0.34894800
C	2.94998000	-1.17850400	0.26102400
H	2.50311100	-2.03963800	-0.25287100
H	4.04729400	-1.20972900	0.14865900
H	2.69320300	-1.21015400	1.33595300

17. Nitrogen Bonded Complexes

**F<sub>3</sub>N···OH<sub>2</sub>**

N	-0.50950400	0.02088900	-0.36131500
F	-0.42131600	1.13737500	0.44475200
F	-1.88728600	-0.16412600	-0.42787600

---

F	-0.14597600	-0.99179400	0.52468900
O	2.47470600	0.06020400	-0.28398000
H	3.41859600	0.23538700	-0.38904300
H	2.44148600	-0.69634200	0.31600300

---

---

**F<sub>3</sub>N•••SH<sub>2</sub>**

---

N	-1.10856200	0.00001300	-0.37254400
F	-0.88243300	1.07367300	0.47858300
F	-2.49247700	0.00216400	-0.45657100
F	-0.88558500	-1.07588900	0.47653000
H	2.09688800	0.97568600	0.58176100
H	2.09508200	-0.97141200	0.58653100
S	2.61952600	-0.00024400	-0.19046000

---

---

**F<sub>3</sub>N•••NH<sub>3</sub>**

---

N	0.56488600	-0.00000100	-0.38539500
F	0.29094400	-1.07398600	0.44954700
F	1.95683600	-0.00006600	-0.37836300
F	0.29104400	1.07405700	0.44948400
N	-2.59724500	0.00001100	-0.28232100
H	-2.54079500	-0.81569200	0.32849600
H	-3.54133500	0.00009200	-0.66929500
H	-2.54077900	0.81548800	0.32879700

---

---

**F<sub>3</sub>N•••NCH**

---

N	0.87712100	0.00000100	0.33340800
F	0.74274600	-1.07302000	-0.52997900
F	0.74270900	1.07299900	-0.53000300
F	2.25591500	0.00002700	0.55517400
N	-2.17549900	-0.00002600	0.16238000
C	-3.35801100	0.00001300	0.15431100
H	-4.43561600	0.00004600	0.14688400

---

---

**F<sub>3</sub>N...CO**

---

N	0.96062800	-0.00001800	-0.34209500
F	0.80653500	-1.07361500	0.52036100
F	2.33608900	-0.00091600	-0.54076500
F	0.80782200	1.07435100	0.51960100
C	-2.36346600	0.00112300	-0.18194000
O	-3.51220100	-0.00062400	-0.12580800

---

---

**F<sub>3</sub>N...OCH<sub>2</sub>**

---

N	0.92292200	-0.00000500	0.39064600
F	0.56893700	-1.07400700	-0.41397800
F	0.56892800	1.07401400	-0.41395200
F	2.30698200	0.00000200	0.24954500
O	-2.06160800	-0.00002200	0.77935900
C	-2.56200900	0.00001200	-0.33770700
H	-1.93574400	0.00003600	-1.25540700
H	-3.66341100	0.00002000	-0.48228000

---

---

**F<sub>3</sub>N...C<sub>2</sub>H<sub>4</sub>**

---

N	0.85872800	0.00000000	0.30450600
F	0.76648300	1.07406000	-0.56582200
F	2.21828700	0.00000000	0.59895600
F	0.76648400	-1.07405300	-0.56583100
C	-2.48602800	0.67462600	0.16642500
H	-2.31145700	1.24267800	1.08392400
H	-2.65866700	1.24294800	-0.75114500
C	-2.48600700	-0.67463300	0.16643200
H	-2.65863000	-1.24297000	-0.75113100
H	-2.31141900	-1.24267000	1.08393800

---

---

**F<sub>3</sub>N...OHCH<sub>3</sub>**

---

N	-1.01391100	-0.05678400	0.38368800
F	-0.70319700	-1.02131600	-0.55795100

---

F	-2.39770400	0.03334900	0.23489300
F	-0.59904400	1.10212800	-0.25824800
C	2.47807700	0.16410000	-0.45794500
H	1.95083300	-0.35980900	-1.26502900
H	3.55449200	-0.06230700	-0.53215000
H	2.32303600	1.24903300	-0.57968800
O	1.91551700	-0.31973300	0.77132500
H	2.37592400	0.11638600	1.49988100

---

**F<sub>3</sub>N...O(CH<sub>3</sub>)<sub>2</sub>**

---

N	-1.21587300	-0.22443200	-0.23631600
F	-1.21882000	1.12837400	-0.51269000
F	-2.58245100	-0.48870300	-0.14667100
F	-0.85294300	-0.23415200	1.10639500
O	1.60772000	0.07913200	-0.57428300
C	1.96669200	-1.25910300	-0.24469200
H	3.06490000	-1.38997300	-0.25100900
H	1.51777400	-1.91092800	-1.00588200
H	1.58076900	-1.53916300	0.75347700
C	2.13106000	0.99317600	0.38467800
H	1.81052300	1.99850500	0.08089600
H	3.23597400	0.95226300	0.41175500
H	1.74081400	0.77315600	1.39602100

---

**F<sub>3</sub>N...FH**

---

N	-0.46771100	0.00000000	-0.32389900
F	-1.84499100	0.00000100	-0.52727500
F	-0.31832300	1.07340300	0.53808900
F	-0.31832500	-1.07340400	0.53808800
F	2.46942200	-0.00000100	-0.28090700
H	3.38392800	0.00000400	-0.14466800

---

18. Phosphorus Bonded Complexes

---

**F<sub>3</sub>P•••OH<sub>2</sub>**

---

F	-0.09767100	1.23889500	0.59306400
F	-2.00878400	-0.03496500	-0.20087200
F	-0.03720900	-1.21106800	0.59508400
O	2.46002600	-0.01744600	-0.33231300
H	2.81078100	0.79707500	0.05346300
H	2.62919500	-0.68801200	0.34427800
P	-0.38848100	0.00631700	-0.44164900

---

---

**F<sub>3</sub>P•••SH<sub>2</sub>**

---

F	-0.60221500	1.22210800	0.60493300
F	-2.52133100	0.00000000	-0.26501300
F	-0.60221500	-1.22210800	0.60493200
H	2.41705800	0.97444300	0.70178600
H	2.41704700	-0.97440900	0.70182500
P	-0.89638400	0.00000000	-0.43898600
S	2.63397000	-0.00000200	-0.20765600

---

---

**F<sub>3</sub>P•••NH<sub>3</sub>**

---

F	-0.08888900	1.22867200	0.60310200
F	-2.00212400	-0.00000900	-0.23020200
F	-0.08887400	-1.22866300	0.60310800
H	2.90137100	0.81842800	-0.59649800
H	2.90128600	-0.81858500	-0.59624900
H	2.52549700	0.00014800	0.76889300
P	-0.36897000	0.00000000	-0.44315600
N	2.40362600	0.00000100	-0.24469600

---

---

**F<sub>3</sub>P•••NCH**

---

F	-0.46494300	-1.22306100	0.61146800
F	-0.46494000	1.22306200	0.61146900
F	-2.38129900	0.00000100	-0.25737600

---

---

N	2.27811900	0.00000600	-0.28745200
C	3.43807600	-0.00000300	-0.06303600
H	4.49589800	-0.00001200	0.14335700
P	-0.75137000	-0.00000100	-0.42953500

---

---

**F<sub>3</sub>P...CO**

---

F	0.50979800	-1.22154100	0.57811900
F	2.47069000	-0.00000300	-0.20291400
F	0.50980500	1.22154300	0.57811900
C	-2.52351300	0.00001000	-0.29183200
O	-3.63973100	-0.00000500	-0.01770200
P	0.85641900	-0.00000100	-0.44582000

---

---

**F<sub>3</sub>P...OCH<sub>2</sub>**

---

F	-0.30453500	-1.22009500	0.52244900
F	-0.30451200	1.22010800	0.52239600
F	-2.33734400	0.00001400	-0.01436600
O	2.05078800	-0.00004300	-0.74641700
C	2.62596800	0.00002600	0.33703000
H	2.06153400	0.00010400	1.29139800
H	3.73314100	0.00000900	0.39793400
P	-0.76261800	-0.00001100	-0.46763200

---

---

**F<sub>3</sub>P...C<sub>2</sub>H<sub>4</sub>**

---

F	0.45195300	-0.99107100	0.92328100
F	2.38093300	-0.15091600	-0.30700300
F	0.56603100	1.36424900	0.27948100
C	-2.66247900	-0.60218300	-0.47195800
H	-2.94109000	-0.59474200	-1.52911600
H	-2.46781500	-1.57308000	-0.00835000
C	-2.56914100	0.54314800	0.23747000
H	-2.29143300	0.53501000	1.29458400
H	-2.76578400	1.51480000	-0.22311500

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---

P	0.75103900	-0.10187500	-0.41259400
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---

**F<sub>3</sub>P...OHCH<sub>3</sub>**

---

F	-0.32093800	1.26462200	0.33335400
F	-2.40962300	0.07552500	-0.00137600
F	-0.43800900	-1.15328800	0.70602600
C	2.58859600	0.18957000	0.42226500
H	2.33683200	1.24245800	0.59314300
H	3.67847000	0.09269600	0.29959400
H	2.25399000	-0.40555600	1.28650800
O	1.89466300	-0.19927700	-0.78176800
H	2.14149500	-1.11299300	-0.98114500
P	-0.83883600	-0.06943600	-0.45464000

---

---

**F<sub>3</sub>P...PH<sub>3</sub>**

---

F	-0.66343300	1.22337800	0.59032100
F	-2.59668500	-0.00312000	-0.24547700
F	-0.65847500	-1.22021400	0.59259100
H	3.61005800	1.03474800	-0.38503900
H	3.59071500	-1.05549500	-0.36488000
H	2.82432800	0.01251900	1.26275900
P	-0.97471600	0.00002300	-0.44449600
P	2.65753200	0.00049900	-0.15215500

---

---

**F<sub>3</sub>P...O(CH<sub>3</sub>)<sub>2</sub>**

---

F	-0.91389300	1.37911400	-0.25473000
F	-2.63901100	-0.31267400	-0.07489200
F	-0.58052300	-0.57998300	1.18199300
C	2.11181300	1.05168200	0.42675700
H	1.61174500	2.00456300	0.21553500
H	3.20316900	1.16597500	0.30508700
H	1.88847700	0.73578800	1.46109400
O	1.60389000	0.09674000	-0.51248000

---



---

P	-1.02236000	-0.24771800	-0.36111000
C	2.20919100	-1.18363200	-0.31328600
H	2.02766700	-1.54783500	0.71379100
H	1.75118800	-1.87230300	-1.03626200
H	3.29684000	-1.13075400	-0.49492200

---

---

**FH<sub>2</sub>P•••SH<sub>2</sub>**

---

F	-2.66961300	0.02999800	0.08258200
H	2.33319300	0.50197500	-1.16376000
H	2.57454000	1.02765300	0.70233600
P	-1.00639100	-0.03375500	-0.16374700
S	2.22523800	-0.09690800	0.04139400
H	-0.70598400	-0.88944500	0.93927500
H	-0.68317200	1.14668700	0.57281000

---

---

**FH<sub>2</sub>P•••NH<sub>3</sub>**

---

F	2.03583200	-0.00000200	-0.07988400
N	-2.26231600	0.00000200	-0.03429100
H	-2.61901700	0.81617000	0.46364600
H	-2.61899800	-0.81618200	0.46363500
H	-2.70836000	-0.00000700	-0.95243800
H	0.07893300	1.03948900	-0.76815000
H	0.07893400	-1.03956300	-0.76806900
P	0.35348200	0.00000600	0.16802400

---

---

**FH<sub>2</sub>P•••NCH**

---

F	-2.51277900	0.00000000	-0.09294200
N	1.93772500	0.00000100	-0.10226100
C	3.11263900	0.00000000	0.01823200
H	4.18483400	-0.00000200	0.12865700
H	-0.52926400	-1.03406300	-0.74263200
H	-0.52926500	1.03406500	-0.74263000
P	-0.85008100	0.00000000	0.18663500

---

---

**FH<sub>2</sub>P...CO**

---

F	-2.56647500	-0.00015500	0.07255600
H	-0.59402000	1.03385300	0.76543400
H	-0.59363900	-1.03247900	0.76685200
C	2.05692400	0.00046100	0.12791400
O	3.19189900	-0.00032200	-0.05088500
P	-0.90605300	-0.00001100	-0.16971300

---

---

**FH<sub>2</sub>P...OCH<sub>2</sub>**

---

F	0.75842300	1.10745000	-0.10166000
O	-1.66040900	-0.75792900	-0.07754700
C	-2.25018200	0.30706200	0.06800400
H	-1.69718000	1.26192700	0.17385900
H	-3.35963600	0.35068900	0.09836400
H	1.02536700	-0.99434500	-1.09244200
H	2.72639500	-0.09173800	-0.33089700
P	1.41757400	-0.41816800	0.15189400

---

---

**FH<sub>2</sub>P...C<sub>2</sub>H<sub>4</sub>**

---

F	-2.45568800	0.12245000	0.00000400
C	2.13657500	-0.66467900	-0.00000300
H	2.10920700	-1.23299800	0.93329100
H	2.10922900	-1.23299600	-0.93329800
C	2.23649100	0.68515800	0.00000500
H	2.28501900	1.25107100	-0.93405900
H	2.28500100	1.25105800	0.93407700
H	-0.45779600	0.73979700	-1.03533100
H	-0.45781000	0.73964400	1.03543700
P	-0.80067000	-0.18270000	-0.00001100

---

---

**FH<sub>2</sub>P...OHCH<sub>3</sub>**

---

F	-2.52805000	0.25505100	-0.05292200
---	-------------	------------	-------------

---

---

C	2.39721600	0.58267100	0.02494500
H	2.24798100	1.15215000	-0.90088200
H	3.47456300	0.40737200	0.16824300
H	1.99674800	1.16015600	0.87438900
O	1.68359600	-0.65804700	-0.14674700
H	1.84610200	-1.20068600	0.63774300
H	-0.40851900	0.79478400	-0.84014800
H	-0.86715100	-1.22382700	-0.73341200
P	-0.89262300	-0.10780400	0.15297800

---

---

**FH<sub>2</sub>P...PH<sub>3</sub>**

---

F	2.68931300	-0.00007800	0.04667700
H	-2.70584500	-1.04984500	-0.75212400
H	-2.70643400	1.04902900	-0.75286100
H	-3.20130300	0.00006600	0.99970000
H	0.74102600	-1.03520800	0.80847600
H	0.74117500	1.03504000	0.80888200
P	1.01507900	0.00008400	-0.13676800
P	-2.15324100	0.00002400	0.03462400

---

---

**FH<sub>2</sub>P...C<sub>2</sub>H<sub>2</sub>**

---

F	-2.49291594	0.04819023	0.00128828
C	2.14363429	-0.59214201	0.31027599
H	2.07413592	-1.54382204	0.79386572
C	2.23467449	0.61430235	-0.30581785
H	2.31484731	1.56021370	-0.79908987
H	-0.40870928	0.66886710	-1.10264654
H	-0.40764395	0.66677616	1.10204649
P	-0.86269483	0.03535750	-0.00058923

---

---

**FH<sub>2</sub>P...O(CH<sub>3</sub>)<sub>2</sub>**

---

F	-2.85900100	0.10094400	0.16752900
O	1.32227300	0.01264700	-0.41765800

---

---

C	1.90549400	-1.16515300	0.15113700
H	2.99129100	-1.19086000	-0.04587400
H	1.41774200	-2.02467000	-0.32488000
H	1.73227100	-1.19793900	1.24257200
C	1.90547100	1.19251900	0.14387000
H	1.40997800	2.05182600	-0.32618400
H	2.98864400	1.22743500	-0.06774700
H	1.74730100	1.22528800	1.23752300
H	-1.01639600	0.95181700	-0.95879700
H	-0.75505500	0.49950200	1.05283500
P	-1.21524900	-0.18108500	-0.11639900

---

---

**ClH<sub>2</sub>P...OH<sub>2</sub>**

---

H	3.33638200	-0.74424100	-0.26027200
H	3.54679500	0.76766000	-0.22926000
P	0.14216600	-0.20498900	-0.05686000
H	0.41315000	0.46172400	1.17050600
H	0.40223100	0.95384300	-0.84239500
Cl	-1.97020800	0.06225500	0.01602100
O	2.95781000	0.07218900	0.09274500

---

---

**ClH<sub>2</sub>P...SH<sub>2</sub>**

---

H	2.91462900	-0.71780400	-1.02245100
H	3.13396000	1.15787400	-0.52436300
P	-0.47263900	-0.19918200	-0.09022300
S	2.83181600	0.00675200	0.11378500
H	-0.20569500	0.16204300	1.26201500
H	-0.18532200	1.10912200	-0.57727400
Cl	-2.58100300	0.06873200	0.02322700

---

---

**ClH<sub>2</sub>P...NH<sub>3</sub>**

---

N	-2.86133600	-0.00001200	0.06959000
H	-3.22885300	-0.81616600	-0.42072100

---

---

H	-3.22888100	0.81632600	-0.42039400
H	-3.28873500	-0.00020400	0.99672300
H	-0.41453900	-1.03809800	0.73485000
H	-0.41450200	1.03803400	0.73499100
P	-0.18041500	0.00002500	-0.20888200
Cl	1.95947500	-0.00001100	0.06003900

---

---

**ClH<sub>2</sub>P...NCH**

---

N	-2.57057400	0.00005000	0.12268600
C	-3.74779300	0.00006700	0.02225100
H	-4.82182600	0.00008000	-0.06948000
H	0.00495200	-1.03361200	0.68583300
H	0.00491000	1.03473400	0.68405200
P	0.29669900	-0.00023800	-0.24929400
Cl	2.40248500	0.00009500	0.08510000

---

---

**ClH<sub>2</sub>P...CO**

---

H	-0.07826500	1.03318800	0.72183900
H	-0.07825900	-1.03316800	0.72184700
C	2.74059000	0.00001300	0.16236800
O	3.87328200	-0.00001200	-0.03182000
P	-0.36098500	0.00000500	-0.21884000
Cl	-2.46226500	-0.00000500	0.06583900

---

---

**ClH<sub>2</sub>P...OCH<sub>2</sub>**

---

O	1.97217200	-0.70394300	0.17540500
C	2.50130200	0.36002700	-0.12566000
H	1.89647900	1.26883100	-0.32183100
H	3.60491800	0.45108700	-0.21256600
H	-0.64539800	-1.31625600	1.14095500
H	-2.48828600	-1.05888200	0.22510200
P	-1.11394500	-0.98998800	-0.16322100
Cl	-0.96727800	1.11626000	0.05690400

---

---

**ClH<sub>2</sub>P...C<sub>2</sub>H<sub>4</sub>**

---

C	2.75774300	-0.62502000	-0.00000800
H	2.74381700	-1.19370700	0.93349300
H	2.74383400	-1.19368900	-0.93352100
C	2.81854500	0.72652000	0.00000500
H	2.84910500	1.29382200	-0.93411200
H	2.84908700	1.29380500	0.93413400
H	0.02476800	0.67875500	-1.03477000
H	0.02476800	0.67864000	1.03484900
P	-0.28057600	-0.25258200	-0.00001200
Cl	-2.38143900	0.09541800	0.00000800

---

---

**ClH<sub>2</sub>P...OHCH<sub>3</sub>**

---

C	2.93107300	-0.65209400	-0.02239000
H	2.71366800	-1.24962900	0.87187400
H	4.02204400	-0.54231600	-0.12223100
H	2.52663100	-1.16785000	-0.90899200
O	2.29150200	0.62331300	0.18078800
H	2.51089800	1.18630400	-0.57489900
H	0.05051100	-0.78086400	0.73964000
H	-0.31506800	1.25810900	0.76892500
P	-0.37299100	0.20975300	-0.19106700
Cl	-2.46072200	-0.17200000	0.04586600

---

---

**ClH<sub>2</sub>P...PH<sub>3</sub>**

---

H	3.30867700	1.04775700	-0.75626400
H	3.30895100	-1.04843600	-0.75516800
H	3.86601600	0.00063800	0.97552700
H	-0.24858400	1.03452400	0.78587200
H	-0.24863500	-1.03452500	0.78595600
P	-0.48929400	-0.00003200	-0.16440500
P	2.78127800	0.00001400	0.05127200

---

Cl	-2.60977600	0.00001800	0.03888700
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---

**ClH<sub>2</sub>P•••O(CH<sub>3</sub>)<sub>2</sub>**

---

C	2.40567300	1.17672300	0.15547400
H	1.97189600	2.03937000	-0.36704000
H	3.50566700	1.20640700	0.06640600
H	2.12289000	1.20779900	1.22341500
O	1.88348300	0.00000100	-0.47100200
H	-0.52915100	1.03705100	-0.88243100
H	-0.52916000	-1.03700100	-0.88250300
P	-0.67804100	-0.00000800	0.08087200
Cl	-2.81811300	0.00000300	0.03580000
C	2.40567300	-1.17672100	0.15547600
H	1.97188900	-2.03936800	-0.36703200
H	3.50566600	-1.20640900	0.06640200
H	2.12289400	-1.20779100	1.22341900

---

19. Arsenic Bonded Complexes

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**F<sub>3</sub>As•••OH<sub>2</sub>**

---

F	-0.11341900	-1.30704900	0.74832000
F	1.98029600	-0.00001200	0.02872900
F	-0.11339700	1.30705600	0.74831900
O	-2.41878700	-0.00000100	-0.29115500
H	-2.60763700	-0.76263100	0.27561500
H	-2.60766800	0.76264800	0.27557900
As	0.26619100	0.00000100	-0.36212900

---



---

**F<sub>3</sub>As•••SH<sub>2</sub>**

---

F	-0.32324300	1.29889700	0.77278000
F	-2.38992900	0.00000000	-0.07240800
F	-0.32324300	-1.29889700	0.77278000
H	2.52254800	0.97443100	0.71664800
H	2.52254300	-0.97442500	0.71665500

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---

S	2.75436300	0.00000000	-0.18992800
As	-0.66021700	0.00000000	-0.35311600

---

---

**F<sub>3</sub>As•••NH<sub>3</sub>**

---

F	-0.07866400	-1.31348500	0.75794100
F	1.97876700	-0.00044700	-0.00029500
F	-0.07794000	1.31388500	0.75772100
H	-2.83778000	-0.82476400	-0.52573300
H	-2.84122800	0.81863400	-0.53555700
H	-2.43817100	0.00588300	0.83008600
N	-2.34146200	0.00004000	-0.18651400
As	0.24569500	0.00001200	-0.36671200

---

---

**F<sub>3</sub>As•••NCH**

---

F	0.19919100	1.30001700	0.77048800
F	0.19919000	-1.30001700	0.77048700
F	2.27547200	-0.00000100	-0.03903700
N	-2.36150700	0.00000300	-0.32639300
C	-3.49851800	-0.00000200	-0.00867300
H	-4.53591000	-0.00000500	0.28427600
As	0.54523900	0.00000000	-0.34742200

---

---

**F<sub>3</sub>As•••CO**

---

F	-0.21648500	1.29787700	0.73473800
F	-2.34114900	-0.00026700	0.02609100
F	-0.21606300	-1.29767000	0.73481100
C	2.64949500	0.00019800	-0.30189100
O	3.75134300	-0.00011000	0.02324600
As	-0.63468000	0.00000700	-0.35864800

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---

**F<sub>3</sub>As•••OCH<sub>2</sub>**

---

F	-0.04990000	-1.29497800	0.69545000
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F	-0.04990000	1.29499600	0.69541700
F	-2.21911000	0.00000300	0.20559200
O	2.10501700	-0.00001900	-0.71362400
C	2.73406400	0.00001200	0.34185900
H	2.21662800	0.00006000	1.32021200
H	3.84153700	-0.00000800	0.33955300
As	-0.55856000	-0.00000500	-0.37485000

---

---

**F<sub>3</sub>As•••C<sub>2</sub>H<sub>4</sub>**

---

F	0.20356100	-0.99942600	1.12165800
F	2.28980600	-0.12888900	-0.13411600
F	0.34790800	1.49123500	0.39683200
C	-2.77982100	-0.60571400	-0.44072100
H	-3.07424300	-0.62042500	-1.49375000
H	-2.57847700	-1.56602900	0.04210800
C	-2.68171200	0.55461400	0.24510700
H	-2.39130000	0.56780500	1.29861000
H	-2.88754300	1.51639000	-0.23197200
As	0.54937200	-0.08658800	-0.33032400

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---

**F<sub>3</sub>As•••OHCH<sub>3</sub>**

---

F	-0.00131100	-1.19788900	0.79812300
F	2.27426800	-0.32781400	-0.01221200
F	0.49979700	1.36652500	0.73426200
C	-2.88725100	-0.41166200	-0.02976400
H	-2.85104600	-1.07180200	-0.90532700
H	-3.89847000	0.01260500	0.05923900
H	-2.63316400	-0.98903300	0.87103400
O	-1.91705200	0.63168500	-0.27107700
H	-1.90179200	1.21994000	0.49910600
As	0.57544300	-0.00977600	-0.35934600

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---

**F<sub>3</sub>As•••PH<sub>3</sub>**

---

F	0.30414900	-1.27119900	0.77077700
F	2.43868600	-0.05435600	-0.03282000
F	0.39208500	1.32446900	0.73742100
H	-3.55974900	-1.17852300	-0.19094500
H	-3.83667500	0.87841500	-0.50153500
H	-2.92943800	0.19505600	1.26688400
P	-2.77187100	0.00644000	-0.13487300
As	0.71786800	0.00055200	-0.35847600

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---

**F<sub>3</sub>As•••O(CH<sub>3</sub>)<sub>2</sub>**

---

F	-0.64044200	1.54495000	-0.14891400
F	-2.49573900	-0.20217300	0.10013500
F	-0.28625300	-0.56468800	1.35256700
C	2.29439500	1.07678000	0.40039800
H	1.79229600	2.02531600	0.18018700
H	3.37713900	1.16518900	0.21010700
H	2.11990800	0.79525100	1.45240900
O	1.72578400	0.09080300	-0.47963900
C	2.34148200	-1.18872300	-0.27557700
H	2.22760900	-1.51181900	0.77329300
H	1.83468600	-1.90083600	-0.94171600
H	3.41165400	-1.14139200	-0.53738000
As	-0.77524000	-0.19664500	-0.29644900

---

---

**FH<sub>2</sub>As•••OH<sub>2</sub>**

---

F	2.01432700	0.17404800	0.00369800
H	-2.98359000	0.83108000	-0.27683100
H	-2.92783700	-0.69673600	-0.28432000
H	-0.05956300	0.96336100	-1.02891900
H	-0.05244300	0.79894500	1.16199100
O	-2.48934800	0.08239400	0.08342000

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As	0.23664500	-0.12491600	-0.00826000
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**FH<sub>2</sub>As•••SH<sub>2</sub>**

---

F	2.46777600	0.19504100	0.01154600
H	-2.69619000	-0.89475300	0.85992000
H	-2.79109400	1.05332400	0.74705000
S	-2.53056000	0.03702800	-0.10336200
H	0.39579300	0.81529600	-1.15260500
H	0.36395100	0.93643200	1.03670500
As	0.69716700	-0.12903400	0.00178200

---

---

**FH<sub>2</sub>As•••NH<sub>3</sub>**

---

F	2.00963400	0.17496200	-0.00009400
N	-2.38761300	0.08682000	-0.00005000
H	-2.77692600	-0.38412800	0.81738000
H	-2.77699100	-0.38545700	-0.81668100
H	-2.76670900	1.03447500	-0.00080500
H	-0.05007000	0.88416400	1.10304400
H	-0.05005600	0.88290800	-1.10405700
As	0.21355600	-0.12770800	0.00007000

---

---

**FH<sub>2</sub>As•••NCH**

---

F	2.33388300	0.20799700	-0.00003700
N	-2.19518100	0.09471700	-0.00001800
C	-3.37449700	0.04096100	-0.00000600
H	-4.45133000	-0.00785100	0.00000600
H	0.24078100	0.86638600	1.09639600
H	0.24081100	0.86581100	-1.09687500
As	0.56297100	-0.13651800	0.00002900

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---

**FH<sub>2</sub>As•••CO**

---

F	-2.37399700	-0.21480000	0.00002900
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H	-0.27087800	-0.86338900	1.09482800
H	-0.27085300	-0.86385700	-1.09444000
C	2.35777500	-0.10312300	0.00002500
O	3.50404200	-0.02943500	-0.00000300
As	-0.61428100	0.13680800	-0.00002400

---

---

**FH<sub>2</sub>As•••OCH<sub>2</sub>**

---

F	-0.18306900	1.34206800	0.05959800
O	2.00383200	-0.79208300	0.04210000
C	2.68719000	0.22389800	-0.03693300
H	2.21999900	1.22682200	-0.09033100
H	3.79610400	0.16742200	-0.05696400
H	-0.64200200	-0.72658100	1.32352700
H	-2.35563400	0.30074400	0.42666200
As	-1.01589800	-0.24405300	-0.06831800

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---

**FH<sub>2</sub>As•••C<sub>2</sub>H<sub>4</sub>**

---

F	-2.30724600	0.21800800	0.00001000
C	2.38529300	-0.63191000	-0.00000200
H	2.36148500	-1.19997300	0.93374300
H	2.36150800	-1.19995600	-0.93375800
C	2.48430800	0.71893400	0.00001200
H	2.53265100	1.28447300	-0.93418500
H	2.53262800	1.28445600	0.93422000
H	-0.20419600	0.86557600	-1.09855100
H	-0.20420100	0.86545000	1.09865000
As	-0.54037200	-0.13285600	-0.00000800

---

---

**FH<sub>2</sub>As•••OHCH<sub>3</sub>**

---

F	-2.36468500	-0.30019200	0.13139300
C	2.67502500	-0.59561500	-0.02340300
H	2.46546400	-1.23751100	0.84105900
H	3.75721000	-0.40317800	-0.07539300

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---

H	2.33901300	-1.10249700	-0.94267900
O	1.93978300	0.62686700	0.19720400
H	2.16628600	1.24015300	-0.51646200
H	-0.14995700	-0.80440000	1.04294300
H	-0.63760600	1.32011900	0.74695800
As	-0.61292900	0.06811500	-0.11261100

---

---

**FH<sub>2</sub>As•••PH<sub>3</sub>**

---

F	-2.49042700	0.00020300	0.16556300
H	3.11120000	1.05064300	-0.66243500
H	3.11152600	-1.05227800	-0.65958300
H	3.38572100	0.00167200	1.14268500
H	-0.41307800	1.09785300	0.89395400
H	-0.41312700	-1.09606500	0.89619100
P	2.47048100	0.00005000	0.05227300
As	-0.70986700	-0.00013400	-0.11772600

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---

**FH<sub>2</sub>As•••O(CH<sub>3</sub>)<sub>2</sub>**

---

C	2.18967800	1.17896000	0.13586400
H	1.73665200	2.04018800	-0.37189000
H	3.28444500	1.20247800	0.00146500
H	1.94880100	1.21103400	1.21377800
O	1.63998100	-0.00000200	-0.46766600
H	-0.71176900	1.10246800	-0.97016800
H	-0.71174700	-1.10241900	-0.97021000
C	2.18968200	-1.17896200	0.13586400
H	1.73664600	-2.04019400	-0.37187500
H	3.28444700	-1.20248400	0.00144900
H	1.94882200	-1.21102800	1.21378300
As	-0.84831800	0.00000200	0.06733100
F	-2.65753600	-0.00001000	0.01585500

---

---

**ClH<sub>2</sub>As•••OH<sub>2</sub>**

---

H	-3.41977900	0.89778100	-0.27556200
H	-3.39292000	-0.62927300	-0.22503300
H	-0.38214800	0.93090100	-1.03603200
H	-0.38412900	0.77853700	1.15222400
O	-2.91642000	0.15384400	0.08207200
As	-0.13802900	-0.16176300	-0.01121900
Cl	2.08619300	0.12526300	0.00576800

---

---

**ClH<sub>2</sub>As•••SH<sub>2</sub>**

---

H	-3.11535900	-0.86010300	0.84710600
H	-3.18230100	1.09032400	0.76642900
S	-2.96406300	0.08351100	-0.10698900
H	0.06129100	0.67908300	-1.21615200
H	0.03207400	0.98176300	0.95270300
As	0.31915900	-0.17584700	0.01188300
Cl	2.53512200	0.15151100	-0.00178800

---

---

**ClH<sub>2</sub>As•••NH<sub>3</sub>**

---

N	-2.79601600	0.15060000	-0.00001800
H	-3.19986700	-0.30819600	0.81746300
H	-3.19994100	-0.30896000	-0.81703200
H	-3.14507800	1.10998100	-0.00045000
H	-0.37723700	0.86227700	1.10061900
H	-0.37722900	0.86184400	-1.10097700
As	-0.17077600	-0.16022300	0.00002200
Cl	2.08865100	0.11860000	-0.00001300

---

---

**ClH<sub>2</sub>As•••NCH**

---

N	2.64145200	0.13946900	-0.00037500
C	3.82214300	0.11233800	0.00016500
H	4.89989500	0.08795800	0.00064300
H	0.10268300	0.82186900	-1.09597700

---

---

H	0.10291200	0.82393500	1.09419200
As	-0.17712300	-0.18944400	0.00009000
Cl	-2.39314400	0.16868100	-0.00001100

---

---

**ClH<sub>2</sub>As...CO**

---

H	-0.06437300	0.82463700	1.09130300
H	-0.06383100	0.81999700	-1.09536800
C	-2.84860200	0.15991700	-0.00080900
O	-3.99527400	0.08827300	0.00042300
As	0.23540600	-0.18898100	0.00018500
Cl	2.43609400	0.17212100	-0.00003400

---

---

**ClH<sub>2</sub>As...OCH<sub>2</sub>**

---

O	2.12786300	-0.86931200	0.10961300
C	2.85945800	0.09687300	-0.07835800
H	2.44363800	1.11684000	-0.20403300
H	3.96286000	-0.01880300	-0.12854700
H	-0.52045500	-0.93219200	1.34271900
H	-2.38825700	-0.33165500	0.36805000
As	-0.95269500	-0.60034200	-0.07290900
Cl	-0.36697000	1.55002100	0.03653200

---

---

**ClH<sub>2</sub>As...C<sub>2</sub>H<sub>4</sub>**

---

C	2.83770800	-0.56609900	-0.00000500
H	2.83010400	-1.13453300	0.93388300
H	2.83012400	-1.13451400	-0.93390400
C	2.89191300	0.78675800	0.00000900
H	2.91976100	1.35384300	-0.93424900
H	2.91974000	1.35382500	0.93427900
H	0.12001700	0.82128900	-1.09638300
H	0.12001700	0.82116600	1.09647700
As	-0.16976400	-0.18904900	-0.00001000
Cl	-2.38325000	0.16668200	0.00001200

---

---

**ClH<sub>2</sub>As•••OHCH<sub>3</sub>**

---

C	-3.04501600	0.69594700	-0.02250000
H	-2.78198900	1.36996600	0.80210800
H	-4.13799800	0.57024600	-0.04930100
H	-2.69498400	1.13130400	-0.97284100
O	-2.38288500	-0.55594600	0.25544200
H	-2.65802000	-1.19196400	-0.42023800
H	-0.16001400	0.87234800	0.89870500
H	0.22956600	-1.28774500	0.87203000
As	0.24205500	-0.15850200	-0.13924300
Cl	2.44404700	0.23754600	0.09153000

---

---

**ClH<sub>2</sub>As•••PH<sub>3</sub>**

---

H	3.55371300	-0.63475900	-1.05035000
H	3.55377000	-0.63514500	1.05006800
H	3.85693700	1.16229400	0.00018300
H	-0.08238800	0.86812300	-1.09501700
H	-0.08238700	0.86798600	1.09513200
P	2.92135800	0.08860800	0.00000900
As	-0.33539000	-0.15361600	-0.00000800
Cl	-2.56189100	0.12421800	0.00000600

---

---

**ClH<sub>2</sub>As•••O(CH<sub>3</sub>)<sub>2</sub>**

---

C	2.58276000	1.17886900	0.13824700
H	2.13149300	2.04025500	-0.37107400
H	3.67856500	1.20598100	0.01190500
H	2.33521900	1.20941500	1.21483000
O	2.03977300	-0.00000100	-0.47075000
H	-0.36652800	1.09975600	-0.97107600
H	-0.36652200	-1.09970200	-0.97113100
Cl	-2.74531700	-0.00000200	0.00904600
C	2.58276100	-1.17887000	0.13824800

---



H	2.13148300	-2.04025800	-0.37106100
H	3.67856400	-1.20598800	0.01189200
H	2.33523400	-1.20940800	1.21483400
As	-0.49086200	0.00000000	0.06618600

## 20. Antimony Bonded Complexes

<b>F<sub>3</sub>Sb•••OH<sub>2</sub></b>			
F	-0.28996600	-1.43724200	0.84828400
F	2.02691000	-0.00000200	0.34350200
F	-0.28996300	1.43724300	0.84828400
O	-2.39484700	0.00000000	-0.20432900
H	-2.52946200	-0.76476300	0.37867800
H	-2.52947600	0.76476500	0.37867100
Sb	0.21950800	0.00000000	-0.34281100

<b>F<sub>3</sub>Sb•••SH<sub>2</sub></b>			
F	-0.06905100	1.41701000	0.88675500
F	-2.38506800	0.00000000	0.22016800
F	-0.06905100	-1.41701000	0.88675500
H	2.55875300	0.97470400	0.74326900
H	2.55875100	-0.97470200	0.74327100
S	2.81679900	0.00000000	-0.15727200
Sb	-0.53878000	0.00000000	-0.33163300

<b>F<sub>3</sub>Sb•••NH<sub>3</sub></b>			
F	-0.22253700	-1.44530500	0.87026500
F	2.04347000	-0.00000200	0.28680600
F	-0.22253400	1.44530700	0.87026500
H	-2.55462200	-0.82214900	0.48100800
H	-3.05512800	0.00003700	-0.86059700
H	-2.55460300	0.82211000	0.48107000
N	-2.37620300	0.00000000	-0.09885600
Sb	0.20416000	0.00000000	-0.34618700

---

**F<sub>3</sub>Sb•••NCH**

---

F	-0.03589000	1.41867700	0.88109800
F	-0.03589600	-1.41867500	0.88109800
F	2.28811000	-0.00000400	0.25804800
N	-2.41845100	0.00000200	-0.33437600
C	-3.53210900	-0.00000100	0.05398300
H	-4.54904300	-0.00000300	0.41215900
Sb	0.44556800	0.00000000	-0.32505100

---

---

**F<sub>3</sub>Sb•••CO**

---

F	0.06044700	1.41344800	0.82818200
F	-2.32170200	0.00017800	0.35650000
F	0.06016100	-1.41357700	0.82817700
C	2.71401100	-0.00011900	-0.29624100
O	3.79869900	0.00006400	0.07999700
Sb	-0.52674100	-0.00000500	-0.33290700

---

---

**F<sub>3</sub>Sb•••OCH<sub>2</sub>**

---

F	0.16856000	-1.40625100	0.81534200
F	0.16854100	1.40621900	0.81541200
F	-2.20815600	-0.00002500	0.49079600
O	2.17116700	0.00003600	-0.67538900
C	2.81394800	-0.00002300	0.37492000
H	2.30810400	-0.00009300	1.35672800
H	3.91967900	-0.00000700	0.34938100
Sb	-0.46355500	0.00000900	-0.34600900

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---

**F<sub>3</sub>Sb•••C<sub>2</sub>H<sub>4</sub>**

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---

F	-0.03076400	-1.08707600	1.25492000
F	2.32536600	-0.07809600	0.12535000
F	0.14305700	1.63828200	0.50008100
C	-2.85298000	-0.58823300	-0.42541300
H	-3.15897500	-0.57545200	-1.47542500
H	-2.64911000	-1.56000600	0.03324000
C	-2.75206000	0.55435900	0.29168500
H	-2.45316800	0.53836700	1.34263600
H	-2.96323300	1.52872100	-0.15654900
Sb	0.44932900	-0.07816400	-0.31107200

---

---

**F<sub>3</sub>Sb•••OHCH<sub>3</sub>**

---

F	-0.22277000	-1.35160200	0.84677400
F	2.28597600	-0.30639000	0.31112600
F	0.25346400	1.47692300	0.88783700
C	-3.00137300	-0.38924200	0.03758300
H	-3.00553000	-1.07632200	-0.81722900
H	-3.98895100	0.08545400	0.12697200
H	-2.74851400	-0.94318700	0.95164000
O	-1.99443100	0.61322400	-0.25262800
H	-1.93795400	1.22520000	0.49974600
Sb	0.48616900	-0.00454600	-0.34073000

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---

**F<sub>3</sub>Sb•••PH<sub>3</sub>**

---

F	0.01859800	-1.39363900	0.86437000
F	2.40596500	-0.05243700	0.28978800
F	0.10489500	1.44035700	0.84713000
H	-3.63530800	-1.14991400	-0.20762400
H	-3.83880100	0.94206400	-0.40539200
H	-2.90749600	0.12700100	1.30993200
P	-2.81166200	0.00516300	-0.10221900
Sb	0.58414500	0.00107600	-0.33676900

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---

**F<sub>3</sub>Sb•••O(CH<sub>3</sub>)<sub>2</sub>**

---

F	-0.43877400	1.72422000	-0.08274000
F	-2.49317000	-0.07576000	0.33963500
F	-0.03736800	-0.63046000	1.49306000
C	2.43836000	1.09989800	0.43198400
H	1.92390300	2.04317000	0.22204200
H	3.51614400	1.19019100	0.22083100
H	2.27776400	0.80646100	1.48172300
O	1.86432700	0.10815300	-0.44917600
C	2.50749000	-1.16583400	-0.26363000
H	2.40714500	-1.49853500	0.78238600
H	2.01039300	-1.88101900	-0.93433300
H	3.57184200	-1.08906800	-0.53803900
Sb	-0.65829600	-0.18044700	-0.28237100

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---

**FH<sub>2</sub>Sb•••OH<sub>2</sub>**

---

F	2.09105600	0.30206800	-0.03467700
H	-2.95265300	1.00148100	-0.19591000
H	-3.14993900	-0.50278800	-0.40047800
H	-0.16543200	0.85699300	-1.34276200
H	-0.17984200	1.15499800	1.08262400
O	-2.59693400	0.14032600	0.06369800
Sb	0.16478100	-0.12454700	0.01292200

---

---

**FH<sub>2</sub>Sb•••SH<sub>2</sub>**

---

F	2.44971700	0.36240200	0.02859400
H	-3.00704700	-0.55679800	1.08470000
H	-2.84162400	1.28703800	0.46055100
S	-2.76504500	0.05763900	-0.09377700
H	0.15539600	1.03622300	-1.18454100
H	0.14072600	0.94450800	1.25143200
Sb	0.54403600	-0.13519300	-0.00723600

---

---

**FH<sub>2</sub>Sb•••NH<sub>3</sub>**

---

F	2.09427600	0.30771400	-0.00006300
N	-2.51632900	0.16059500	-0.00007300
H	-2.96163100	-0.25554300	0.81871400
H	-2.96209700	-0.25676500	-0.81798300
H	-2.76801700	1.14977300	-0.00073000
H	-0.15273800	1.01131500	1.23063600
H	-0.15258800	1.01007200	-1.23173000
Sb	0.15221300	-0.12847900	0.00004300

---

---

**FH<sub>2</sub>Sb•••NCH**

---

F	-2.33919900	0.35596700	-0.00001000
N	2.39283300	0.08542500	0.00001500
C	3.57220800	0.12102800	-0.00001200
H	4.64974700	0.15605700	-0.00002700
H	-0.04708800	0.99398900	-1.22234800
H	-0.04701400	0.99435300	1.22199600
Sb	-0.42521400	-0.13082800	0.00000900

---

---

**FH<sub>2</sub>Sb•••CO**

---

F	2.35611800	0.41396200	0.00000000
H	0.02635400	0.96677100	1.21684500
H	0.02635200	0.96678400	-1.21683000
C	-2.58273900	0.07409900	0.00000300
O	-3.72887900	0.14283000	-0.00000200
Sb	0.47195500	-0.14208700	0.00000000

---

---

**FH<sub>2</sub>Sb•••OCH<sub>2</sub>**

---

F	0.23062900	1.50210600	0.00500500
O	2.14511100	-0.82231800	-0.02533400
C	2.92305200	0.12764400	0.01680200
H	2.55063400	1.16939600	0.03494600
H	4.02012100	-0.03883400	0.03784300

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H	-0.37609400	-0.64240100	1.54038300
H	-2.20527800	0.61367700	0.55210500
Sb	-0.79929900	-0.17270800	-0.04134200

---

---

**FH<sub>2</sub>Sb...C<sub>2</sub>H<sub>4</sub>**

---

F	2.33436200	0.32614200	0.07815000
C	-2.62882900	-0.58352400	0.05069000
H	-2.70606500	-1.18385300	-0.85966200
H	-2.56048300	-1.11881100	1.00210900
C	-2.66832800	0.77053300	0.00822900
H	-2.61666800	1.36853400	0.92174400
H	-2.76376900	1.30569300	-0.94004500
H	0.04193000	0.68959400	1.41816000
H	0.03178800	1.25351600	-0.95994000
Sb	0.41856800	-0.12494100	-0.03214200

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---

**FH<sub>2</sub>Sb...OHCH<sub>3</sub>**

---

F	-2.29013400	-0.67303000	-0.00065100
C	2.92336200	-0.68610600	-0.02039500
H	2.54108500	-1.37991500	0.73772200
H	3.98510600	-0.47605100	0.17753500
H	2.80325400	-1.13600800	-1.01812400
O	2.13104800	0.51702200	0.10691400
H	2.47357700	1.17528400	-0.51436500
H	0.09679300	-0.92849100	-1.14742600
H	0.03565000	-0.76976900	1.29498500
Sb	-0.50809400	0.18730700	-0.00504700

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---

**FH<sub>2</sub>Sb...PH<sub>3</sub>**

---

F	-2.47153700	0.35158500	0.00000100
H	3.46287700	-0.50905400	-1.05427100
H	3.46289200	-0.50912800	1.05422100
H	3.41843600	1.31973600	0.00003900

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H	-0.16857200	0.99617200	-1.21966600
H	-0.16857600	0.99614700	1.21968900
P	2.71443800	0.08398100	0.00000100
Sb	-0.55842700	-0.13172300	-0.00000100

---

---

**FH<sub>2</sub>Sb•••O(CH<sub>3</sub>)<sub>2</sub>**

---

C	2.48313200	1.18232400	0.09247900
H	1.97737700	2.04064100	-0.36812700
H	3.55638600	1.20318600	-0.16026800
H	2.36155700	1.21796800	1.19008700
O	1.87223200	0.00000000	-0.44574100
H	-0.50539300	1.23255700	-1.07495700
H	-0.50538700	-1.23256300	-1.07494500
C	2.48311500	-1.18233200	0.09247900
H	1.97734000	-2.04064200	-0.36811900
H	3.55636700	-1.20321600	-0.16027800
H	2.36154800	-1.21797000	1.19008800
Sb	-0.69721900	0.00000200	0.08525500
F	-2.66633000	-0.00000400	-0.11836800

---

---

**ClH<sub>2</sub>Sb•••OH<sub>2</sub>**

---

Cl	2.25690300	0.20403400	-0.01294800
H	-3.24663500	1.12631000	-0.18191200
H	-3.50349500	-0.36960100	-0.38268600
H	-0.39818300	0.90574600	-1.29360100
H	-0.41120900	1.08189300	1.13759400
O	-2.91051300	0.25232800	0.06076200
Sb	-0.14752400	-0.16140300	0.00891400

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---

**ClH<sub>2</sub>Sb•••SH<sub>2</sub>**

---

Cl	2.61118200	0.27893400	0.01030700
H	-3.34400700	-0.46336100	1.08559500
H	-3.11776400	1.37496900	0.46398000

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S	-3.09416600	0.14509600	-0.09438500
H	-0.08839600	0.93786300	-1.23454200
H	-0.10163500	0.96808800	1.19702800
Sb	0.23075200	-0.19374500	-0.00347300

---

---

**ClH<sub>2</sub>Sb...NH<sub>3</sub>**

---

Cl	2.26954000	0.19935400	0.00003000
N	-2.81495400	0.26928300	-0.00016600
H	-3.27922600	-0.12598200	0.81869800
H	-3.27976200	-0.12694600	-0.81825800
H	-3.02040800	1.26937700	-0.00067700
H	-0.38463500	0.99652200	1.22642200
H	-0.38445000	0.99519200	-1.22761600
Sb	-0.16723600	-0.16239500	0.00004100

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---

**ClH<sub>2</sub>Sb...NCH**

---

Cl	-2.49665800	0.27154300	0.00000200
N	2.72289800	0.16261800	0.00000200
C	3.90079000	0.23603300	0.00000100
H	4.97679400	0.30505500	-0.00000100
H	0.20173200	0.96105800	-1.21872200
H	0.20170400	0.96088000	1.21889100
Sb	-0.10592300	-0.18427000	-0.00000400

---

---

**ClH<sub>2</sub>Sb...CO**

---

Cl	2.51529400	0.32829700	0.00000000
H	-0.21565900	0.92487200	1.21380700
H	-0.21566800	0.92489400	-1.21378500
C	-2.95148500	0.16770700	0.00000500
O	-4.09492400	0.27390200	-0.00000300
Sb	0.15960000	-0.20839700	-0.00000100

---



---

**ClH<sub>2</sub>Sb...OCH<sub>2</sub>**

---

Cl	0.18960900	1.78920100	0.00811900
O	2.16007700	-1.07187000	-0.00030600
C	3.05569900	-0.23231600	-0.00232700
H	2.82512100	0.85102500	-0.01522900
H	4.12308900	-0.53661900	0.00918500
H	-0.37816200	-0.79366800	1.54310700
H	-2.33244900	0.23042600	0.53130200
Sb	-0.84462300	-0.39605400	-0.04294100

---

---

**ClH<sub>2</sub>Sb...C<sub>2</sub>H<sub>4</sub>**

---

Cl	2.49802300	0.24818300	0.02579000
C	-2.98007400	-0.48113600	0.04334100
H	-3.05004700	-1.07655800	-0.87103800
H	-2.96544900	-1.02031600	0.99478200
C	-2.96304900	0.87327400	0.00270100
H	-2.91750700	1.46782300	0.91890900
H	-3.00309200	1.41296300	-0.94707200
H	-0.20239400	0.83497900	1.30958800
H	-0.20773200	1.08151600	-1.11616700
Sb	0.10859900	-0.18181100	-0.01968000

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---

**ClH<sub>2</sub>Sb...OHCH<sub>3</sub>**

---

Cl	-2.48997400	0.51370500	-0.00018700
C	3.14174200	0.90581600	0.02056200
H	2.68685200	1.55842200	-0.73415100
H	4.21860000	0.80747900	-0.18223000
H	2.98036400	1.33841100	1.02016200
O	2.47743800	-0.37286000	-0.10736100
H	2.88937000	-0.99437200	0.50990300
H	0.28799500	0.87483600	1.14028300
H	0.24379200	0.70303200	-1.29472900

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Sb	-0.18916400	-0.30338800	0.00548000
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**ClH<sub>2</sub>Sb•••PH<sub>3</sub>**

---

Cl	-2.63472100	0.26836700	-0.00000600
H	3.81033400	-0.42093000	-1.05316300
H	3.80999400	-0.41974800	1.05402500
H	3.74298600	1.40734200	-0.00060300
H	0.07548400	0.96095200	-1.21683700
H	0.07554400	0.96136500	1.21645400
P	3.05298200	0.16330300	-0.00001900
Sb	-0.24546700	-0.18629000	0.00001000

---

**ClH<sub>2</sub>Sb•••O(CH<sub>3</sub>)<sub>2</sub>**

---

C	2.78929600	1.18249900	0.07337000
H	2.28040500	2.04115200	-0.38326900
H	3.86087500	1.20407800	-0.18602800
H	2.67441600	1.21685900	1.17173100
O	2.17547200	0.00000300	-0.46219800
H	-0.23345600	1.22858800	-1.06355100
H	-0.23346100	-1.22855100	-1.06359700
Cl	-2.82630100	0.00000500	-0.08396200
C	2.78928900	-1.18249800	0.07336900
H	2.28038000	-2.04114600	-0.38325900
H	3.86086400	-1.20409100	-0.18604300
H	2.67442200	-1.21685000	1.17173100
Sb	-0.39201200	-0.00000300	0.10131000

21. Bismuth Bonded Complexes

---

**F<sub>3</sub>Bi•••OH<sub>2</sub>**

---

F	-0.43736900	-1.52014300	0.94871400
F	2.04194900	0.00002600	0.54437500
F	-0.43746000	1.52009700	0.94874200
O	-2.47477200	-0.00002400	-0.17013600

---

---

H	-2.57195500	-0.76473800	0.42188200
H	-2.57196900	0.76471900	0.42184300
Bi	0.17395200	0.00000500	-0.25854400

---

---

**F<sub>3</sub>Bi•••SH<sub>2</sub>**

---

F	-0.13620700	-1.49703600	1.00783000
F	2.33418500	0.00000000	0.37123400
F	-0.13620700	1.49703600	1.00783000
H	-2.62300400	-0.97459000	0.74206300
H	-2.62300300	0.97459000	0.74206400
S	-2.92388800	0.00000000	-0.14702500
Bi	0.40328000	0.00000000	-0.24835900

---

---

**F<sub>3</sub>Bi•••NH<sub>3</sub>**

---

F	-0.36213900	-1.52013000	0.98481200
F	2.07830500	-0.00002400	0.46674200
F	-0.36213600	1.52013000	0.98482500
H	-2.63150700	-0.82056500	0.51277600
H	-3.23861900	-0.00001400	-0.78409900
H	-2.63151300	0.82053600	0.51277900
N	-2.49819500	-0.00001300	-0.08231100
Bi	0.16629800	0.00000400	-0.26015300

---

---

**F<sub>3</sub>Bi•••NCH**

---

F	-0.19815400	1.49780000	1.01453900
F	-0.19814100	-1.49782800	1.01450700
F	2.27080500	-0.00000400	0.36312500
N	-2.52980500	0.00002600	-0.37341900
C	-3.61981700	-0.00001600	0.07591200
H	-4.61525500	-0.00005100	0.49066900
Bi	0.32737600	0.00000300	-0.23929800

---

---

**F<sub>3</sub>Bi•••CO**

---

F	0.26409400	1.49430900	0.94645200
F	-2.26467200	0.00032200	0.50495200
F	0.26356200	-1.49454100	0.94645000
C	2.79123200	-0.00017600	-0.29200600
O	3.87380000	0.00008800	0.08854100
Bi	-0.38680300	-0.00000600	-0.24743300

---

---

**F<sub>3</sub>Bi•••OCH<sub>2</sub>**

---

F	0.34865200	-1.47758400	0.94308900
F	0.34858400	1.47753200	0.94321800
F	-2.18323100	-0.00006400	0.63537200
O	2.30363600	0.00006900	-0.67063300
C	2.95189000	-0.00003800	0.37716800
H	2.45086000	-0.00016300	1.36093200
H	4.05736500	-0.00001800	0.34443800
Bi	-0.35270700	0.00001100	-0.25660700

---

---

**F<sub>3</sub>Bi•••C<sub>2</sub>H<sub>4</sub>**

---

F	-0.21760200	-1.11489500	1.40561700
F	2.30119900	-0.09075100	0.23388400
F	0.01438600	1.76120000	0.59816400
C	-2.92912900	-0.59466700	-0.41214100
H	-3.27244100	-0.60246600	-1.45084900
H	-2.69172300	-1.55490000	0.05540100
C	-2.83104400	0.55930700	0.28853800
H	-2.49953600	0.56111400	1.32995200
H	-3.07857000	1.52359200	-0.16296400
Bi	0.32796900	-0.05680900	-0.23095100

---

---

**F<sub>3</sub>Bi•••OHCH<sub>3</sub>**

---

F	-0.39107200	-1.47261500	0.90352900
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---

---

F	2.25252300	-0.25022400	0.52213500
F	-0.01613900	1.53430800	1.02719000
C	-3.16742500	-0.38176400	0.08658900
H	-3.24359200	-1.07905900	-0.75646700
H	-4.13629300	0.11648200	0.23433500
H	-2.86585200	-0.92994100	0.98932700
O	-2.15922200	0.59428000	-0.28148400
H	-2.05816200	1.22543100	0.45212000
Bi	0.38523400	-0.00120200	-0.25617700

---

---

**F<sub>3</sub>Bi•••PH<sub>3</sub>**

---

F	-0.26965800	-1.43588100	0.98786600
F	2.33483700	-0.13965600	0.45242700
F	-0.04414600	1.55228100	0.95622300
H	-3.63025000	-1.22390900	-0.08118800
H	-4.03309000	0.82009600	-0.46375600
H	-3.00112200	0.25037100	1.30171000
P	-2.92411800	0.00944600	-0.09490100
Bi	0.43779400	0.00266300	-0.25183000

---

---

**F<sub>3</sub>Bi•••O(CH<sub>3</sub>)<sub>2</sub>**

---

F	-0.24104100	1.86356600	0.08266500
F	-2.43969900	-0.04023500	0.47328700
F	0.19126600	-0.71523900	1.59079600
C	2.65646200	1.10723100	0.41276100
H	2.15589700	2.05366300	0.18374400
H	3.73750900	1.17786200	0.21021200
H	2.48115800	0.83439100	1.46578700
O	2.07502600	0.10717800	-0.45521600
C	2.69214000	-1.17330300	-0.22996700
H	2.56380600	-1.48163000	0.82003600
H	2.19643100	-1.89515700	-0.89551500
H	3.76275300	-1.12311800	-0.48671500

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---

Bi	-0.52029100	-0.12048000	-0.21775100
----	-------------	-------------	-------------

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---

**FH<sub>2</sub>Bi•••OH<sub>2</sub>**

---

F	-2.13060400	0.36921200	0.07290700
H	2.94230300	1.09127300	-0.03340000
H	3.29249100	-0.25093500	0.61056600
H	0.19111700	0.63122700	1.58245100
H	0.27585800	1.47160600	-0.79026700
O	2.69952700	0.15482900	-0.03653000
Bi	-0.10991000	-0.09041800	-0.02088300

---

---

**FH<sub>2</sub>Bi•••SH<sub>2</sub>**

---

F	2.38720200	0.42840100	0.03202300
H	-3.17389600	-0.26071400	1.21127400
H	-2.90399900	1.38230300	0.19104700
S	-2.95425900	0.06039700	-0.08260800
H	-0.01202900	1.16710000	-1.19856600
H	-0.01742700	1.03678400	1.31140000
Bi	0.38422500	-0.09816200	-0.00580300

---

---

**FH<sub>2</sub>Bi•••NH<sub>3</sub>**

---

F	2.14677100	0.36456300	-0.00000200
N	-2.65210400	0.19120100	-0.00000200
H	-3.13077600	-0.18732800	0.81820400
H	-3.13080300	-0.18740400	-0.81815700
H	-2.82787500	1.19665600	-0.00004400
H	-0.21003800	1.12435000	1.26399600
H	-0.21003700	1.12434000	-1.26399700
Bi	0.10546200	-0.09265200	0.00000000

---

---

**FH<sub>2</sub>Bi•••NCH**

---

F	-2.31078200	0.41071700	0.00000000
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---

N	2.55995000	0.06111800	0.00000000
C	3.73487500	0.16695900	0.00000000
H	4.80839100	0.26730500	0.00000000
H	0.07759900	1.11079900	-1.25945600
H	0.07759700	1.11078500	1.25947200
Bi	-0.29512600	-0.09174600	0.00000000

---

---

**FH<sub>2</sub>Bi•••CO**

---

F	2.29950700	0.50782800	0.00000200
H	-0.13838700	1.07292700	1.25455100
H	-0.13842100	1.07305600	-1.25442500
C	-2.74663400	0.05129300	-0.00000400
O	-3.88352000	0.20994400	0.00000200
Bi	0.32685800	-0.10486400	-0.00000200

---

---

**FH<sub>2</sub>Bi•••OCH<sub>2</sub>**

---

F	0.55819400	1.61481000	-0.02575300
O	2.36539200	-0.85901000	-0.06062000
C	3.15102000	0.08058000	0.04701200
H	2.78491300	1.12241100	0.10920300
H	4.24545300	-0.10046400	0.08337800
H	-0.15975400	-0.51632900	1.65973100
H	-2.01083200	0.79048000	0.57118900
Bi	-0.57485300	-0.11374400	-0.02396200

---

---

**FH<sub>2</sub>Bi•••C<sub>2</sub>H<sub>4</sub>**

---

F	2.31232900	0.34051200	0.14617200
C	-2.78861400	-0.56709800	0.10324200
H	-2.93034100	-1.19859000	-0.77799900
H	-2.67612500	-1.06587900	1.07047100
C	-2.80055000	0.78511100	0.01046300
H	-2.68340200	1.41488400	0.89609800
H	-2.93995400	1.28682600	-0.95064000

---

---

H	-0.07075300	0.55680100	1.58748100
H	-0.08560500	1.51260900	-0.74135400
Bi	0.29048400	-0.08288400	-0.03713100

---

---

**FH<sub>2</sub>Bi...OHCH<sub>3</sub>**

---

F	2.24152100	0.76065600	0.02057800
C	-3.10738100	0.72974100	0.01515900
H	-2.70079900	1.40153800	-0.74987200
H	-2.98298900	1.19157300	1.00679200
H	-4.17233600	0.54289600	-0.18854300
O	-2.34423300	-0.49587000	-0.08552800
H	-2.72438500	-1.13786600	0.53056600
H	-0.22586900	1.00375500	-1.23858200
H	-0.22977600	0.95432500	1.28106900
Bi	0.36458600	-0.13510400	-0.00281200

---

---

**FH<sub>2</sub>Bi...PH<sub>3</sub>**

---

F	-2.39770700	0.45749300	-0.00000100
H	3.74320500	-0.37877200	-1.05486500
H	3.74305700	-0.37830400	1.05518500
H	3.43241300	1.42486000	-0.00025900
H	0.02601800	1.09250500	-1.25512900
H	0.02605300	1.09263500	1.25499800
P	2.91802100	0.09994700	-0.00000400
Bi	-0.39953900	-0.10204300	0.00000200

---

---

**FH<sub>2</sub>Bi...O(CH<sub>3</sub>)<sub>2</sub>**

---

C	2.74877700	1.18316900	0.08294300
H	2.23236200	2.03940400	-0.37011800
H	3.81730300	1.20721300	-0.18975800
H	2.65107700	1.22264400	1.18328000
O	2.12899500	0.00000100	-0.43985300
H	-0.34027000	1.26827900	-1.17681200

---



---

H	-0.34026000	-1.26828900	-1.17679600
C	2.74874400	-1.18318500	0.08294300
H	2.23228500	-2.03940500	-0.37009700
H	3.81726300	-1.20727300	-0.18978300
H	2.65106800	-1.22264400	1.18328200
Bi	-0.52278100	0.00000300	0.05932700
F	-2.59412100	-0.00000700	-0.14376000

---



---

**ClH<sub>2</sub>Bi...OH<sub>2</sub>**

---

Cl	-2.38464900	0.24376000	0.03114100
H	3.13202900	1.23153400	-0.03551000
H	3.53832400	-0.10454500	0.58955400
H	0.33499500	0.72412600	1.53543900
H	0.39405300	1.41694700	-0.87614200
O	2.90949300	0.29000400	-0.03020900
Bi	0.11884000	-0.11725300	-0.01808500

---



---

**ClH<sub>2</sub>Bi...SH<sub>2</sub>**

---

Cl	2.63706300	0.32408900	0.01402200
H	-3.40083600	-0.15286000	1.21242200
H	-3.08451200	1.48331100	0.19388900
S	-3.17646300	0.16391700	-0.08181900
H	-0.15958100	1.10595100	-1.23575400
H	-0.16208700	1.06312500	1.26979500
Bi	0.15422100	-0.14014100	-0.00445300

---



---

**ClH<sub>2</sub>Bi...NH<sub>3</sub>**

---

Cl	2.40787100	0.23020600	0.00000000
N	-2.85261000	0.31246800	0.00000200
H	-3.34441800	-0.04973700	0.81806000
H	-3.34413500	-0.04873800	-0.81866800
H	-2.99263900	1.32375700	0.00059300
H	-0.34447500	1.12233300	1.25932700

---

---

H	-0.34450900	1.12254700	-1.25911200
Bi	-0.12765500	-0.11531300	-0.00000300

---

---

**ClH<sub>2</sub>Bi...NCH**

---

Cl	-2.55910600	0.30410200	0.00000000
N	2.78391200	0.15572700	-0.00000300
C	3.95583800	0.29185100	0.00000200
H	5.02661900	0.41915200	0.00000600
H	0.22614700	1.09678000	-1.25519100
H	0.22614400	1.09679900	1.25516700
Bi	-0.06260900	-0.12799600	0.00000000

---

---

**ClH<sub>2</sub>Bi...CO**

---

Cl	2.55296800	0.39422000	-0.00000100
H	-0.27596200	1.05454900	1.25068600
H	-0.27595400	1.05445900	-1.25077200
C	-2.99929200	0.17140600	-0.00001200
O	-4.13017900	0.36866000	0.00000600
Bi	0.09865800	-0.15407800	0.00000200

---

---

**ClH<sub>2</sub>Bi...OCH<sub>2</sub>**

---

Cl	0.65117800	1.91575400	-0.00759900
O	2.27314000	-1.22093700	-0.05757600
C	3.23401600	-0.46204300	0.03996100
H	3.09185800	0.63403500	0.10601500
H	4.27073900	-0.85771800	0.06416100
H	-0.22207200	-0.62624000	1.65652200
H	-2.12423200	0.59405800	0.56388700
Bi	-0.64669300	-0.23821900	-0.02458500

---

---

**ClH<sub>2</sub>Bi...C<sub>2</sub>H<sub>4</sub>**

---

Cl	2.55956600	0.25819600	0.08367100
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---

C	-3.03012000	-0.45678300	0.14359700
H	-3.19192900	-1.10919700	-0.71881000
H	-2.93864000	-0.92996300	1.12579800
C	-2.99476100	0.89179000	0.01011200
H	-2.85746100	1.54361400	0.87682900
H	-3.11354800	1.36876500	-0.96627700
H	-0.22106600	0.67439700	1.52647600
H	-0.23982700	1.42669700	-0.86744800
Bi	0.06264000	-0.12016500	-0.04001500

---

---

**ClH<sub>2</sub>Bi•••OHCH<sub>3</sub>**

---

Cl	2.53501300	0.59209800	0.01106000
C	-3.23141300	0.98264800	0.01361200
H	-2.76050200	1.60568500	-0.75585700
H	-3.06185400	1.43610600	1.00239100
H	-4.30951300	0.90089100	-0.18948100
O	-2.59353000	-0.31385800	-0.07886300
H	-3.03512600	-0.91164100	0.54112500
H	-0.32545700	0.95896600	-1.25130500
H	-0.32966400	0.94800200	1.25985600
Bi	0.13088700	-0.22155100	-0.00295800

---

---

**ClH<sub>2</sub>Bi•••PH<sub>3</sub>**

---

Cl	-2.65041600	0.35114800	-0.00000200
H	3.97995900	-0.24833300	-1.05478400
H	3.97931100	-0.24658100	1.05602100
H	3.61680400	1.54677100	-0.00097600
H	0.17176300	1.07175900	-1.25168100
H	0.17183900	1.07219100	1.25126300
P	3.14160100	0.20712500	-0.00001600
Bi	-0.16851400	-0.14785800	0.00000500

---

---

**ClH<sub>2</sub>Bi•••O(CH<sub>3</sub>)<sub>2</sub>**

---

C	2.95949300	1.18343300	0.06836000
H	2.44615300	2.04012200	-0.38734700
H	4.02958000	1.20716000	-0.19748500
H	2.85404600	1.22137200	1.16796200
O	2.34281400	-0.00000200	-0.45969100
H	-0.15213900	1.26336100	-1.17452300
H	-0.15213100	-1.26337800	-1.17449900
Cl	-2.82897300	-0.00000600	-0.08924500
C	2.95947700	-1.18344600	0.06836100
H	2.44611300	-2.04012800	-0.38733200
H	4.02955900	-1.20719500	-0.19749900
H	2.85404500	-1.22137200	1.16796500
Bi	-0.29541000	0.00000300	0.06695300

## 22. Oxygen Bonded Complexes

<b>F<sub>2</sub>O...OH<sub>2</sub></b>			
O	0.42408600	-0.25305100	0.00003100
F	0.53528400	1.16690900	0.00003800
F	1.79445800	-0.66090400	-0.00003700
O	-2.33429500	-0.31482300	-0.00003900
H	-2.84284100	-0.00509600	-0.76085600
H	-2.84316100	-0.00595800	0.76091400

<b>F<sub>2</sub>O...SH<sub>2</sub></b>			
O	1.06163300	-0.28279000	-0.02263000
F	1.13157400	1.14099600	0.01285000
F	2.43912900	-0.65418600	0.00636500
H	-1.98036600	1.06877100	-0.39271100
H	-2.23169200	0.07713800	1.26544900
S	-2.27608300	-0.20405500	-0.05404000

---

**F<sub>2</sub>O...NH<sub>3</sub>**

---

O	-0.47971400	-0.32473500	0.00000300
F	-0.39346300	1.09968700	0.00000000
F	-1.89753900	-0.53453300	-0.00000100
N	2.33984400	-0.30002300	0.00000000
H	2.48818100	0.29532800	-0.81544700
H	3.10144800	-0.97900800	-0.00000500
H	2.48819000	0.29532400	0.81544800

---

---

**F<sub>2</sub>O...NCH**

---

O	0.90040300	-0.27350900	-0.00001700
F	0.98412800	1.14686700	0.00000300
F	2.27827200	-0.65636300	0.00002000
N	-1.94547800	-0.20932600	-0.00003100
C	-3.12453700	-0.12041600	-0.00001400
H	-4.19925500	-0.03867600	0.00023600

---

---

**F<sub>2</sub>O...CO**

---

O	1.00311100	-0.30235800	-0.00001600
F	1.00123600	1.12092300	0.00000100
F	2.39576500	-0.60555700	0.00001100
C	-2.10887100	-0.26673800	-0.00001000
O	-3.24308300	-0.07737500	0.00001000

---

---

**F<sub>2</sub>O...OCH<sub>2</sub>**

---

O	-1.77691600	-0.77989800	-0.00003600
C	-2.45033800	0.24271400	-0.00000500
H	-1.97849800	1.24817700	0.00003100
H	-3.56053700	0.20707500	-0.00001100
O	0.92540300	-0.34823200	-0.00000900
F	0.65180200	1.05250000	0.00004900
F	2.35410600	-0.37322200	-0.00000700

---

---

**F<sub>2</sub>O...C<sub>2</sub>H<sub>4</sub>**

---

C	-2.19299900	-0.12757200	-0.67499300
H	-2.55746500	-0.98756100	-1.24288500
H	-1.83015300	0.73307100	-1.24289800
C	-2.19300600	-0.12762100	0.67504000
H	-1.83016600	0.73298100	1.24301200
H	-2.55747900	-0.98765200	1.24286600
O	0.84876800	-0.28739200	-0.00004100
F	0.91500100	1.13682900	0.00006500
F	2.22957200	-0.65466700	-0.00007000

---

---

**F<sub>2</sub>O...OHCH<sub>3</sub>**

---

C	-2.10042300	0.16465900	-0.63124600
H	-3.13695500	-0.04683500	-0.94136000
H	-1.41809000	-0.17958900	-1.41852600
H	-1.97076300	1.25169500	-0.50102700
O	-1.74245500	-0.56031000	0.55638000
H	-2.33005400	-0.27407800	1.26768700
O	0.92714100	-0.31623200	0.17625800
F	0.85853900	1.10402400	0.27332600
F	2.25045200	-0.51811400	-0.32670300

---

---

**F<sub>2</sub>O...PH<sub>3</sub>**

---

O	-1.16364400	-0.36937600	0.00012300
F	-0.95669300	1.04141700	-0.00001400
F	-2.58509300	-0.46902700	-0.00006400
H	2.28539200	0.75525700	-1.04180700
H	3.60145200	-0.48393500	0.00000100
H	2.28560100	0.75611000	1.04105700
P	2.20085200	-0.21492900	0.00003100

---

---

**F<sub>2</sub>O...O(CH<sub>3</sub>)<sub>2</sub>**

---

C	-1.65122000	1.20088400	0.33469200
---	-------------	------------	------------

---

H	-2.74047900	1.37277000	0.41769900
H	-1.16440300	2.11337900	-0.03400000
H	-1.25157900	0.94920300	1.33465300
O	-1.36746400	0.16566200	-0.60333800
O	1.26831700	0.05862700	-0.33299300
F	1.07352700	-0.51879000	0.95722900
F	2.69291100	0.19946600	-0.38401200
C	-1.95500500	-1.06471900	-0.18789800
H	-3.05546400	-0.97624600	-0.12274100
H	-1.69312500	-1.81854500	-0.94202500
H	-1.56236700	-1.37794700	0.79734400

### 23. Sulfur Bonded Complexes

<b>F<sub>2</sub>S•••OH<sub>2</sub></b>			
S	-0.32197700	-0.36265500	-0.00004100
O	2.32975200	-0.38092100	-0.00000400
H	2.65444800	0.11766800	0.76285000
H	2.65447100	0.11778200	-0.76277500
F	-0.10425300	1.28250000	0.00013100
F	-1.98411500	-0.32534500	-0.00006300

<b>F<sub>2</sub>S•••SH<sub>2</sub></b>			
S	0.83631800	-0.36119400	-0.00002900
H	-2.28757400	0.69654000	-0.97525900
H	-2.28759900	0.69635600	0.97544500
S	-2.33013200	-0.23678200	0.00000500
F	0.66657100	1.28803400	0.00007300
F	2.49745100	-0.37973300	-0.00005200

<b>F<sub>2</sub>S•••NH<sub>3</sub></b>			
S	-0.29241400	-0.39554200	0.00001600
H	2.46906400	0.26160300	0.82054900
H	2.46909100	0.26151100	-0.82049400

N	2.18473200	-0.27389800	0.00005300
H	2.72162900	-1.14134100	0.00011000
F	-0.05788900	1.25568100	-0.00007100
F	-1.97258800	-0.27077100	-0.00001700

---

**F<sub>2</sub>S...NCH**

---

S	-0.73444300	-0.35990700	0.00002400
N	2.06874500	-0.28573000	0.00069800
C	3.23497100	-0.10003500	-0.00040900
H	4.29909500	0.07101900	-0.00144300
F	-2.39598100	-0.36157600	-0.00021400
F	-0.54169100	1.28244300	0.00006000

---

**F<sub>2</sub>S...CO**

---

S	0.81802100	-0.36915600	-0.00015000
C	-2.25674600	-0.27124400	-0.00002300
O	-3.39049300	-0.08508600	0.00041000
F	0.59185000	1.26793200	-0.00000900
F	2.47215800	-0.35519200	-0.00007200

---

**F<sub>2</sub>S...OCH<sub>2</sub>**

---

S	0.74852200	-0.40549400	-0.00000700
O	-1.83818200	-0.74649500	-0.00000400
C	-2.57957200	0.23221500	0.00000600
H	-2.17265100	1.26226300	0.00001200
H	-3.68088500	0.10964900	0.00000800
F	0.28704200	1.19171400	0.00001700
F	2.38629900	-0.11452900	-0.00000800

---

**F<sub>2</sub>S...C<sub>2</sub>H<sub>4</sub>**

---

S	0.65284200	-0.35581200	-0.00002300
C	-2.24457900	-0.14926100	-0.67696000

---



---

H	-2.42139800	-1.06670000	-1.24454100
H	-2.08040900	0.77072700	-1.24377800
C	-2.24456300	-0.14931700	0.67699400
H	-2.08037900	0.77062400	1.24388500
H	-2.42136800	-1.06680300	1.24450400
F	0.51688100	1.29510900	0.00005200
F	2.31566700	-0.39770800	-0.00004200

---



---

**F<sub>2</sub>S•••OHCH<sub>3</sub>**

---

S	-0.77412600	-0.39398100	-0.02849800
C	2.43636600	0.17694900	0.51531300
H	3.52118600	0.08840000	0.35147400
H	2.18357500	-0.23438300	1.50007600
H	2.13237900	1.23391200	0.47447800
O	1.70462800	-0.61502300	-0.44603100
H	1.89315200	-0.26496000	-1.32869200
F	-2.40005000	-0.17846700	0.27559900
F	-0.44433800	1.21615600	-0.28282100

---



---

**F<sub>2</sub>S•••PH<sub>3</sub>**

---

S	0.90124200	-0.37375200	0.00000900
H	-2.85174500	0.63620400	-1.04953400
H	-2.85266400	0.63352900	1.05109200
H	-3.37335900	-1.10964200	-0.00166300
P	-2.31209400	-0.15980800	0.00000300
F	0.69739000	1.27074700	0.00000000
F	2.56253300	-0.35773900	-0.00001000

---



---

**F<sub>2</sub>S•••O(CH<sub>3</sub>)<sub>2</sub>**

---

S	-1.03324100	-0.00006600	-0.39676100
C	1.94632400	-1.18235900	0.03724300
H	3.03744000	-1.21779800	-0.12313800
H	1.46840700	-2.03927900	-0.45393500

---

---

H	1.72924000	-1.20264500	1.11895400
O	1.39755300	-0.00006100	-0.56370600
F	-2.69436400	-0.00003900	-0.19645500
F	-0.69160200	0.00016300	1.23304100
C	1.94622800	1.18239400	0.03702500
H	1.46821500	2.03918500	-0.45428700
H	1.72916700	1.20284700	1.11873700
H	3.03733600	1.21790800	-0.12339200

---

---

**Cl<sub>2</sub>S...OH<sub>2</sub>**

---

S	-0.03322600	-0.53478000	-0.00001000
O	2.73699000	-1.04357300	-0.00002100
H	3.15421300	-0.61795300	0.76176100
H	3.15421600	-0.61758200	-0.76159400
Cl	-2.10345300	-0.40676200	0.00000300
Cl	0.47564500	1.47385600	0.00000600

---

---

**Cl<sub>2</sub>S...SH<sub>2</sub>**

---

S	-0.40862900	-0.47139400	0.00001300
H	2.85738000	0.34826500	0.97415200
H	2.85735100	0.34799100	-0.97438800
Cl	-2.47738500	-0.63223800	-0.00000600
Cl	-0.17555400	1.58749500	-0.00000200
S	2.87020600	-0.58708200	0.00001000

---

---

**Cl<sub>2</sub>S...NH<sub>3</sub>**

---

S	-0.02954800	-0.57324300	0.00003400
H	2.99068400	-0.45228700	0.81832200
H	2.99071200	-0.45237800	-0.81821100
Cl	-2.11535500	-0.33849700	0.00000800
Cl	0.53678900	1.42609300	-0.00008600
N	2.61654100	-0.93395200	0.00007600
H	3.01120800	-1.87491400	0.00013500

---

---

**Cl<sub>2</sub>S...NCH**

---

S	-0.30519100	-0.49292100	-0.00005600
Cl	-2.37647800	-0.61263300	0.00004500
Cl	-0.02856000	1.55448400	0.00000200
N	2.60142400	-0.59478800	-0.00010800
C	3.78303200	-0.56951900	0.00009500
H	4.86052700	-0.54409300	0.00027500

---

---

**Cl<sub>2</sub>S...CO**

---

S	0.38569800	-0.51773600	-0.00046300
Cl	0.02311300	1.51626000	-0.00004800
Cl	2.45117600	-0.56912800	0.00030500
C	-2.79471400	-0.64894800	-0.00043600
O	-3.93322600	-0.49047200	0.00070500

---

---

**Cl<sub>2</sub>S...OCH<sub>2</sub>**

---

S	0.38864800	-0.55163100	0.00001200
O	-2.32896400	-1.05617300	-0.00001900
Cl	2.45686700	-0.37791200	-0.00000300
Cl	-0.16425400	1.44590400	-0.00000400
C	-3.21590600	-0.20916700	0.00000800
H	-2.97903700	0.87446500	0.00002500
H	-4.28660200	-0.49984200	0.00001600

---

---

**Cl<sub>2</sub>S...C<sub>2</sub>H<sub>4</sub>**

---

S	0.26982700	-0.47564100	-0.00003400
Cl	2.34548000	-0.59041600	0.00000800
Cl	-0.00562500	1.57713300	0.00001300
C	-2.75508800	-0.57285000	-0.67656900
H	-2.89117500	-1.49743300	-1.24385100
H	-2.62585200	0.35287800	-1.24330600
C	-2.75505200	-0.57291400	0.67659200

---

---

H	-2.62578700	0.35275900	1.24341100
H	-2.89111100	-1.49755200	1.24379300

---

---

**Cl<sub>2</sub>S...OHCH<sub>3</sub>**

---

S	-0.37188400	-0.47368500	-0.25423500
Cl	-0.00075100	1.54992700	0.02201300
Cl	-2.40666800	-0.53974900	0.16873400
C	2.84220500	-0.54621500	0.67998800
H	3.94243800	-0.49867700	0.65747300
H	2.53348800	-1.47261700	1.18006500
H	2.44236000	0.31525600	1.23880900
O	2.29405900	-0.60777700	-0.65193000
H	2.55227600	0.20146400	-1.11578200

---

---

**Cl<sub>2</sub>S...PH<sub>3</sub>**

---

S	0.48258500	-0.52419300	-0.00000600
H	-3.24323800	0.35108100	-1.04711600
H	-3.24321500	0.35105600	1.04714700
Cl	2.55736400	-0.52777400	0.00000400
Cl	0.08986400	1.51077600	0.00000000
H	-4.00378800	-1.30280500	0.00000400
P	-2.81559900	-0.51488400	0.00000000

---

---

**Cl<sub>2</sub>S...O(CH<sub>3</sub>)<sub>2</sub>**

---

S	-0.65861900	-0.51072200	-0.00000400
Cl	-0.27098800	1.52774600	0.00000900
Cl	-2.74581700	-0.48508300	-0.00000300
C	2.53121000	-0.23295600	1.17924400
H	3.59687000	-0.51932100	1.22728500
H	1.99368700	-0.65734100	2.03734500
H	2.44657800	0.86824000	1.19666200
O	1.92184300	-0.76770800	-0.00000700
C	2.53121700	-0.23292900	-1.17924300

---

H	3.59687600	-0.51929500	-1.22728500
H	1.99369700	-0.65729300	-2.03735600
H	2.44658600	0.86826700	-1.19663400

---

**O<sub>2</sub>S...OH<sub>2</sub>**

---

S	0.64108500	0.00003400	0.39147600
O	0.77012200	1.28533800	-0.37899000
O	0.77063400	-1.28519800	-0.37902300
O	-2.21129300	-0.00016100	0.08928700
H	-2.44671400	-0.76305000	-0.45678100
H	-2.44633900	0.76267100	-0.45702600

---

**O<sub>2</sub>S...SH<sub>2</sub>**

---

S	-1.20072500	0.00000600	-0.39763600
O	-1.27877600	1.28705100	0.37917400
O	-1.27886400	-1.28703400	0.37917300
H	1.89795600	-0.97548600	0.78878600
H	1.89786400	0.97543100	0.78878500
S	2.24230600	-0.00001200	-0.08013500

---

**O<sub>2</sub>S...NH<sub>3</sub>**

---

S	0.62045300	-0.00000200	-0.39788300
O	0.80762600	-1.28265700	0.36549500
O	0.80765600	1.28264900	0.36549500
N	-2.18181700	0.00001100	0.00040900
H	-2.31525200	-0.81898300	0.59535900
H	-2.94631400	0.00006800	-0.67546600
H	-2.31521800	0.81893800	0.59545800

---

**O<sub>2</sub>S...NCH**

---

S	-1.06427700	0.00002800	-0.37086100
O	-1.19699200	1.28658700	0.39800000

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---

O	-1.19768300	-1.28632300	0.39822600
N	1.96193300	-0.00043000	-0.27224600
C	3.06390000	0.00000800	0.15426200
H	4.06891100	0.00040500	0.54412900

---

---

**O<sub>2</sub>S...CO**

---

S	-1.19053600	0.00000000	-0.38052500
O	-1.26494800	1.28901300	0.39279400
O	-1.26494700	-1.28901300	0.39279400
C	2.17745000	-0.00000300	-0.20367900
O	3.27787900	0.00000100	0.12822200

---

---

**O<sub>2</sub>S...OCH<sub>2</sub>**

---

S	-0.99801600	0.02192200	-0.38041800
O	-0.61087500	1.37002500	0.17090300
O	-1.40419600	-1.03133500	0.61284100
C	2.25032200	0.16278100	0.31795200
H	1.68908600	1.00282100	0.77833900
H	3.32960900	0.07081300	0.55324500
O	1.69602400	-0.63882400	-0.42782000

---

---

**O<sub>2</sub>S...C<sub>2</sub>H<sub>4</sub>**

---

S	-1.04388300	0.00004200	-0.39926500
O	-1.21416500	1.28760500	0.36030800
O	-1.21428800	-1.28761400	0.36012100
C	2.25792500	-0.67537900	0.03924200
H	1.95194800	-1.24428500	0.92131100
H	2.56483800	-1.24366300	-0.84306200
C	2.25803600	0.67530300	0.03897500
H	2.56504500	1.24318600	-0.84355500
H	1.95215300	1.24460900	0.92081800

---

---

**O<sub>2</sub>S...OHCH<sub>3</sub>**

---

S	1.09165000	0.00663800	-0.36577100
O	0.77969300	1.38745600	0.14314600
O	1.30290600	-1.07074700	0.66387100
C	-2.16308500	0.30291800	0.39825600
H	-3.22994800	0.07252300	0.54335800
H	-2.06228700	1.31918900	-0.00134600
H	-1.63348400	0.24469200	1.36280500
O	-1.57395200	-0.57666800	-0.58223900
H	-1.63134900	-1.48045500	-0.24025300

---

---

**O<sub>2</sub>S...PH<sub>3</sub>**

---

S	1.29829700	0.00007100	-0.39446500
O	1.37459600	-1.28788500	0.38052200
O	1.37357900	1.28808300	0.38053200
H	-3.23750900	1.04647300	-0.11952700
H	-2.19594900	-0.00012000	1.36313100
H	-3.23869000	-1.04582700	-0.11933300
P	-2.27240000	-0.00021700	-0.06008400

---

---

**O<sub>2</sub>S...O(CH<sub>3</sub>)<sub>2</sub>**

---

S	1.28700800	-0.22673700	-0.35896000
O	1.60098200	1.20437300	-0.01622000
O	1.10009700	-1.17826100	0.79379400
C	-1.50462300	1.22029000	0.46353900
H	-2.57937000	1.44285200	0.58019900
H	-0.97116600	2.11712400	0.12443100
H	-1.09162100	0.88856600	1.43345900
O	-1.31442600	0.21301600	-0.53868300
C	-1.94888400	-1.01159500	-0.15002200
H	-3.03573900	-0.85920900	-0.03084300
H	-1.76414300	-1.73779600	-0.95252100
H	-1.52226300	-1.38894500	0.79640900

---

## 24. Selenium Bonded Complexes

<b>F<sub>2</sub>Se•••OH<sub>2</sub></b>			
O	-2.34870200	-0.32968900	0.00001300
H	-2.65156600	0.18285800	-0.76388700
H	-2.65154000	0.18290500	0.76389300
Se	0.21153200	-0.29350000	-0.00001700
F	-0.10643900	1.45739000	0.00007600
F	1.98428900	-0.09619500	-0.00002600

<b>F<sub>2</sub>Se•••SH<sub>2</sub></b>			
H	2.44303200	0.72283000	0.97589100
H	2.44291500	0.72308100	-0.97576200
Se	-0.59350200	-0.29060800	0.00001500
S	2.47548700	-0.21088600	-0.00005700
F	-0.33003200	1.46740400	-0.00001900
F	-2.37159900	-0.15530200	0.00004800

<b>F<sub>2</sub>Se•••NH<sub>3</sub></b>			
H	-2.48975100	0.34111300	-0.82202700
H	-2.48975000	0.34110900	0.82203000
N	-2.21107500	-0.19539000	0.00000000
H	-2.74106600	-1.06753300	-0.00000200
Se	0.19135800	-0.32122800	-0.00000100
F	-0.12348200	1.43985600	0.00000600
F	1.97813900	-0.03154600	-0.00000300

<b>F<sub>2</sub>Se•••NCH</b>			
N	2.18330300	-0.26528100	0.00001000
C	3.34637500	-0.06729800	0.00000300
H	4.40861300	0.11616600	-0.00000500
Se	-0.50813600	-0.28795200	-0.00001200
F	-0.21571400	1.46006900	0.00005300



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F	-2.28354800	-0.13396400	-0.00001500
---	-------------	-------------	-------------

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---

**F<sub>2</sub>Se•••CO**

---

C	-2.39635000	-0.24852000	0.00007600
O	-3.52857000	-0.05766500	0.00010900
Se	0.57229500	-0.29292400	-0.00000800
F	2.33678800	-0.12181700	-0.00006000
F	0.23528300	1.44535700	-0.00005500

---

---

**F<sub>2</sub>Se•••OCH<sub>2</sub>**

---

O	-1.95700800	-0.69418100	0.00000800
C	-2.74654200	0.24919000	0.00003200
H	-2.38780300	1.29482900	0.00004600
H	-3.83735800	0.06320500	0.00004100
Se	0.53396500	-0.31832900	-0.00001000
F	-0.01810600	1.37613200	0.00002100
F	2.26318100	0.12647500	-0.00002000

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---

**F<sub>2</sub>Se•••C<sub>2</sub>H<sub>4</sub>**

---

C	2.24917700	-0.11305500	0.68068700
H	2.41093700	-1.03427400	1.24665200
H	2.12597300	0.81390500	1.24584600
C	2.24918200	-0.11303600	-0.68067300
H	2.12598200	0.81393900	-1.24580700
H	2.41094500	-1.03424000	-1.24666200
Se	-0.41737300	-0.29244900	-0.00000600
F	-0.22308200	1.47509100	0.00002000
F	-2.20728700	-0.17059500	-0.00001100

---

---

**F<sub>2</sub>Se•••OHCH<sub>3</sub>**

---

C	2.61918700	0.17085300	0.53105200
H	3.69015900	0.06196500	0.30612500

---

H	2.39471500	-0.30304200	1.49377200
H	2.33761900	1.23293200	0.56773000
O	1.82508400	-0.53883300	-0.45323100
H	1.98540600	-0.13304800	-1.31886600
Se	-0.55740500	-0.31491400	-0.02410300
F	-0.13706300	1.40199100	-0.26524300
F	-2.28204000	0.05732200	0.28860700

---

**F<sub>2</sub>Se•••PH<sub>3</sub>**

---

H	3.43593900	-1.09845800	-0.00003100
H	2.91195300	0.66396100	1.05941300
H	2.91193500	0.66401100	-1.05938400
P	2.39502600	-0.12908200	0.00000000
Se	-0.61841100	-0.30869900	0.00000000
F	-2.39256400	-0.08539300	0.00000000
F	-0.29179700	1.44122400	0.00000000

---

**F<sub>2</sub>Se•••O(CH<sub>3</sub>)<sub>2</sub>**

---

C	2.16562900	-1.18758100	0.05514100
H	3.24449900	-1.21109200	-0.16927300
H	1.66305300	-2.04235100	-0.41348600
H	2.00389500	-1.20608400	1.14512900
O	1.58028700	0.00000800	-0.51485400
Se	-0.77902900	0.00000500	-0.31806100
F	-0.34613300	-0.00002700	1.41433000
F	-2.53892900	-0.00000400	0.04634800
C	2.16560900	1.18758400	0.05517700
H	3.24448300	1.21112000	-0.16922400
H	1.66303100	2.04236400	-0.41343100
H	2.00386000	1.20606400	1.14516300

---

**Cl<sub>2</sub>Se•••OH<sub>2</sub>**

---

---

O	2.68138800	-0.96039100	-0.00000100
H	3.07254700	-0.50977100	0.76228500
H	3.07253000	-0.50986500	-0.76235100
Cl	-2.19442500	-0.18675600	-0.00000600
Cl	0.59403700	1.64216200	-0.00000100
Se	-0.01145800	-0.47173900	0.00000600

---

---

**Cl<sub>2</sub>Se•••SH<sub>2</sub>**

---

H	2.90196700	0.38103300	0.97469300
H	2.90166000	0.38124200	-0.97456300
Cl	-2.49868400	-0.44183100	-0.00002800
Cl	0.01808300	1.75695600	0.00000000
Se	-0.29423800	-0.41904500	0.00002600
S	2.89816600	-0.55449300	-0.00003500

---

---

**Cl<sub>2</sub>Se•••NH<sub>3</sub>**

---

H	2.89942900	-0.34295200	0.82057300
H	2.89942400	-0.34295900	-0.82058000
Cl	-2.20189400	-0.11441200	0.00000000
Cl	0.63843600	1.60903200	0.00000000
N	2.52572800	-0.82133100	0.00000000
H	2.89663600	-1.77219700	0.00000300
Se	0.00597700	-0.50591500	0.00000000

---

---

**Cl<sub>2</sub>Se•••NCH**

---

Cl	2.41720600	-0.40803400	0.00002100
Cl	-0.15041000	1.72512100	-0.00005900
N	-2.61070700	-0.58398200	0.00000900
C	-3.78943700	-0.50912300	0.00000700
H	-4.86504800	-0.43741400	0.00000400
Se	0.21591400	-0.43560200	0.00001500

---

---

**Cl<sub>2</sub>Se•••CO**

---

Cl	-0.15273700	1.69998300	-0.00005400
Cl	2.46759100	-0.38080900	-0.00006300
C	-2.83507000	-0.59443800	0.00010500
O	-3.97567400	-0.45622100	0.00012200
Se	0.27833200	-0.44734000	0.00001100

---

---

**Cl<sub>2</sub>Se•••OCH<sub>2</sub>**

---

O	2.35691700	-0.99495000	-0.00002100
Cl	-2.46574200	-0.17638900	0.00005100
Cl	0.33621100	1.63265700	-0.00003800
C	3.26324800	-0.16617900	-0.00003300
H	3.04841400	0.92056300	-0.00004500
H	4.32424100	-0.48658900	-0.00002500
Se	-0.28251300	-0.47746600	0.00000600

---

---

**Cl<sub>2</sub>Se•••C<sub>2</sub>H<sub>4</sub>**

---

Cl	2.38425900	-0.40245400	-0.00000100
Cl	-0.16616300	1.75096700	-0.00000400
C	-2.71618100	-0.53814700	-0.67845200
H	-2.80465900	-1.46915600	-1.24493000
H	-2.64522700	0.39424600	-1.24440200
C	-2.71619600	-0.53812500	0.67844600
H	-2.64525300	0.39428500	1.24436800
H	-2.80468600	-1.46911700	1.24495200
Se	0.17019000	-0.42109800	0.00000400

---

---

**Cl<sub>2</sub>Se•••OHCH<sub>3</sub>**

---

Cl	0.19097300	1.70612900	-0.02610000
Cl	-2.44757100	-0.30764800	0.24256200
C	2.95307400	-0.41973800	0.70864000
H	4.04509000	-0.42216500	0.57147900
H	2.66628100	-1.25746300	1.35579600

---

---

H	2.63037900	0.52608200	1.17068300
O	2.27732700	-0.63899300	-0.55104700
H	2.50656800	0.09370500	-1.14248200
Se	-0.27715400	-0.44364600	-0.16114100

---

---

**Cl<sub>2</sub>Se•••PH<sub>3</sub>**

---

H	3.33593800	0.34263700	1.05379800
H	3.33595100	0.34264800	-1.05378200
Cl	-2.54363700	-0.34128100	0.00000300
Cl	0.10234800	1.70204200	0.00000000
H	3.90134200	-1.40025000	0.00000300
P	2.82641500	-0.46577200	0.00000100
Se	-0.33728100	-0.45386500	-0.00000200

---

---

**Cl<sub>2</sub>Se•••O(CH<sub>3</sub>)<sub>2</sub>**

---

Cl	-0.05198900	1.70709200	-0.00002000
Cl	-2.71214600	-0.29339500	0.00000100
C	2.61534000	-0.20508300	1.18476900
H	3.66475000	-0.54313900	1.22682500
H	2.05686100	-0.60641800	2.04004100
H	2.57665800	0.89748700	1.19760800
O	1.98273200	-0.71478300	0.00001400
Se	-0.49565100	-0.45143600	0.00000700
C	2.61533300	-0.20514800	-1.18477300
H	3.66474400	-0.54320200	-1.22681400
H	2.05685200	-0.60653400	-2.04001900
H	2.57664500	0.89742200	-1.19767600

---

---

**O<sub>2</sub>Se•••OH<sub>2</sub>**

---

Se	0.46656400	0.00000400	-0.28764000
O	0.53567900	-1.39050000	0.60023800
O	0.53562100	1.39051100	0.60023500
H	-2.57565200	0.76325000	0.47540700

---

---

H	-2.57568100	-0.76329700	0.47538900
O	-2.41028100	-0.00002000	-0.09685300

---

---

**O<sub>2</sub>Se•••SH<sub>2</sub>**

---

O	-0.93129400	1.39239600	0.60033000
O	-0.93128500	-1.39239600	0.60033100
H	2.19177800	-0.97537800	0.77964900
H	2.19178600	0.97536800	0.77966900
S	2.55939300	0.00000200	-0.08079600
Se	-0.89509500	-0.00000100	-0.29034900

---

---

**O<sub>2</sub>Se•••NH<sub>3</sub>**

---

O	0.58749900	-1.38605100	0.58696400
O	0.58748800	1.38605300	0.58696600
N	-2.32863700	-0.00000400	0.01106700
H	-2.44207000	-0.82106500	0.60811200
H	-3.10245200	0.00000100	-0.65420400
H	-2.44206300	0.82105400	0.60811700
Se	0.43785700	0.00000100	-0.29502700

---

---

**O<sub>2</sub>Se•••NCH**

---

O	0.93519000	-1.39210500	0.59997900
O	0.93510600	1.39212900	0.59996500
N	-2.31079300	-0.00003400	-0.27502500
C	-3.40131300	-0.00001000	0.17933300
H	-4.39615400	0.00001200	0.59480200
Se	0.76521200	0.00000300	-0.27485800

---

---

**O<sub>2</sub>Se•••CO**

---

O	0.95354200	-1.39582000	0.60345600
O	0.95047500	1.39638900	0.60324300
C	-2.57186300	-0.00098800	-0.21655600

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---

O	-3.66257900	-0.00037200	0.14578700
Se	0.86763700	0.00012800	-0.28001600

---

---

**O<sub>2</sub>Se•••OCH<sub>2</sub>**

---

O	-0.23131900	1.46083500	0.37427700
O	-1.18284800	-1.10384100	0.83626400
C	2.53010200	0.10791900	0.31723500
H	1.98621000	0.94188300	0.80811800
H	3.61467600	-0.00072300	0.51424100
O	1.94759700	-0.67628600	-0.42771500
Se	-0.73673300	0.02840200	-0.27907000

---

---

**O<sub>2</sub>Se•••C<sub>2</sub>H<sub>4</sub>**

---

O	0.93822200	-1.39509500	0.57134600
O	0.91971600	1.39170600	0.58984500
C	-2.60427100	0.67024000	0.03619300
H	-2.22199300	1.25862900	0.87491200
H	-2.99783400	1.21880800	-0.82407300
C	-2.59325200	-0.68038600	0.06160500
H	-2.97731800	-1.26739600	-0.77730500
H	-2.20186100	-1.23060200	0.92177000
Se	0.78590100	0.00319300	-0.29622400

---

---

**O<sub>2</sub>Se•••OHCH<sub>3</sub>**

---

O	0.38740000	1.47670000	0.43452900
O	1.08027400	-1.18628700	0.79533100
C	-2.54942400	0.29050300	0.24134100
H	-3.52144500	-0.10971100	0.56717300
H	-2.71220300	1.08530900	-0.49645600
H	-2.00083600	0.70534400	1.10154500
O	-1.77683500	-0.73045100	-0.43084400
H	-1.65743600	-1.46749500	0.18842000
Se	0.81358100	0.04599600	-0.27061300

---

---

<b>O<sub>2</sub>Se•••PH<sub>3</sub></b>			
O	-0.46523400	1.35383400	0.61678700
O	-1.45176400	-1.25480500	0.59024200
H	3.92758700	-0.66113500	-0.04280100
H	2.37910800	-0.29768600	1.32917800
H	2.91989700	1.18210200	-0.04461100
P	2.57931900	-0.20078700	-0.07832400
Se	-0.95824700	0.05871500	-0.28597500

---



---

<b>O<sub>2</sub>Se•••O(CH<sub>3</sub>)<sub>2</sub></b>			
O	-1.25731800	-1.41793700	0.17237500
O	-0.74890100	1.17296100	1.01786400
C	1.85456300	-1.22638900	0.44443800
H	2.93681100	-1.43544500	0.48225200
H	1.30550300	-2.12347800	0.13280700
H	1.50237400	-0.90389300	1.44011700
O	1.59168300	-0.20869900	-0.53706300
Se	-0.99781100	0.15375900	-0.25815000
C	2.21224800	1.03029100	-0.15785200
H	1.98731700	1.75683600	-0.94976400
H	1.80497600	1.38928300	0.80342200
H	3.30402700	0.89487000	-0.07665200

---

## 25. Tellurium Bonded Complexes

---

<b>F<sub>2</sub>Te•••OH<sub>2</sub></b>			
O	2.41636000	-0.26932700	-0.00001500
H	2.70232800	0.25409200	0.76423200
H	2.70227900	0.25441600	-0.76405800
Te	-0.16873500	-0.27401700	-0.00000500
F	0.29557200	1.61244300	0.00000600
F	-2.06904600	0.15366400	0.00001500

---



---

**F<sub>2</sub>Te•••SH<sub>2</sub>**

---

S	2.60272300	-0.17916000	0.00000100
H	2.57977400	0.75544900	0.97609900
H	2.57977500	0.75545500	-0.97608700
Te	-0.47720000	-0.27388200	-0.00000100
F	-0.05710300	1.62130200	-0.00000100
F	-2.38609000	0.11175400	0.00000400

---

---

**F<sub>2</sub>Te•••C<sub>2</sub>H<sub>2</sub>**

---

C	-2.50251400	-0.11215400	-0.61937400
H	-2.57679900	-0.09212300	-1.69371500
C	-2.50250900	-0.11213900	0.61938900
H	-2.57675300	-0.09214400	1.69373400
Te	0.28367200	-0.25173100	-0.00000400
F	0.04803300	1.66694100	-0.00000300
F	2.22227000	-0.04249500	0.00001200

---

---

**F<sub>2</sub>Te•••NH<sub>3</sub>**

---

H	-2.59313500	0.42544600	-0.82068200
H	-2.59297900	0.42585800	0.82047100
N	-2.33046100	-0.12179700	0.00000700
H	-2.88917400	-0.97626500	0.00027400
Te	0.16152800	-0.29575400	-0.00000400
F	-0.28480100	1.60228500	-0.00000400
F	2.06136200	0.21512900	0.00001300

---

---

**F<sub>2</sub>Te•••O(CH<sub>3</sub>)<sub>2</sub>**

---

C	2.38062800	0.07863900	1.18954100
H	3.45712500	-0.15507200	1.19716500
H	1.88363700	-0.39289700	2.04569600
H	2.22269900	1.16831800	1.21188700
O	1.78015400	-0.48320600	-0.00010200
Te	-0.66298600	-0.29173700	-0.00006200

---

---

F	-0.07890300	1.56573800	0.00032800
F	-2.52781300	0.30611000	0.00006600
C	2.38063100	0.07915000	-1.18950300
H	1.88364300	-0.39201900	-2.04586200
H	2.22270100	1.16883800	-1.21138100
H	3.45712900	-0.15455600	-1.19722400

---

---

**F<sub>2</sub>Te•••CO**

---

C	2.44776700	-0.23124500	0.00000600
O	3.57518100	-0.01828100	-0.00000500
Te	-0.44253000	-0.27424000	0.00000100
F	0.07701900	1.58835500	0.00000200
F	-2.32996500	0.16655500	-0.00000400

---

---

**F<sub>2</sub>Te•••OCH<sub>2</sub>**

---

O	2.09015000	-0.64937500	-0.00000200
C	2.89837700	0.28141900	0.00000000
H	2.55596200	1.33075200	-0.00002400
H	3.98252500	0.06624300	0.00002500
Te	-0.43450000	-0.29015600	0.00000000
F	0.25825100	1.52775500	0.00000200
F	-2.26446800	0.38309100	0.00000000

---

---

**F<sub>2</sub>Te•••OHCH<sub>3</sub>**

---

C	2.79609900	0.19458700	0.54384300
H	3.85984200	0.09382200	0.28616300
H	2.59392100	-0.31218500	1.49441200
H	2.50723300	1.25218800	0.61430100
O	1.98116400	-0.48950600	-0.44892200
H	2.13136900	-0.05970600	-1.30562200
Te	-0.46204000	-0.28947200	-0.01609200
F	0.10801500	1.55337900	-0.27543900
F	-2.29603500	0.31628400	0.28386800

---

---

**F<sub>2</sub>Te•••PH<sub>3</sub>**

---

H	-2.95788500	0.70524400	-1.06949800
H	-2.95798400	0.70529400	1.06941200
H	-3.48103000	-1.07835600	-0.00002500
P	-2.46597600	-0.08448400	-0.00000200
Te	0.48566000	-0.29743700	0.00000500
F	-0.01939300	1.58393100	0.00000700
F	2.36742100	0.23849200	-0.00002100

---

---

**F<sub>2</sub>Te•••NCH**

---

N	-2.27785600	-0.24023100	0.00000300
C	-3.43714000	-0.02745200	0.00000600
H	-4.49695700	0.17060900	0.00000800
Te	0.39792800	-0.26862100	-0.00000100
F	2.30628500	0.12282200	-0.00000100
F	-0.04267200	1.61540300	0.00000000

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---

**Cl<sub>2</sub>Te•••OH<sub>2</sub>**

---

O	-2.65965000	-0.85045000	0.00000000
H	-3.02873000	-0.38018600	-0.76299900
H	-3.02872900	-0.38017700	0.76299400
Cl	2.33805400	0.06164500	0.00000000
Cl	-0.74188700	1.80426200	0.00000000
Te	0.00384300	-0.46454700	0.00000000

---

---

**Cl<sub>2</sub>Te•••SH<sub>2</sub>**

---

S	2.95597700	-0.50686500	0.00000100
H	2.96707100	0.42948600	0.97470500
H	2.96707000	0.42950900	-0.97468000
Cl	-2.62276900	-0.20215600	-0.00000500
Cl	0.22014400	1.91951500	0.00001000
Te	-0.23817600	-0.42200500	-0.00000200

---

---

**Cl<sub>2</sub>Te•••NH<sub>3</sub>**

---

H	-2.91510300	-0.17017600	-0.82019800
H	-2.91510600	-0.17019000	0.82020400
Cl	2.34344200	0.10281900	-0.00000100
Cl	-0.72987900	1.79330800	0.00000000
N	-2.56951800	-0.67090900	-0.00000100
H	-2.99082600	-1.60120600	-0.00000900
Te	-0.01197900	-0.49223500	0.00000000

---

---

**Cl<sub>2</sub>Te•••NCH**

---

Cl	-2.54106700	-0.16771300	0.00000100
Cl	0.34174600	1.89268800	0.00000000
N	2.61081100	-0.54549400	0.00000200
C	3.78672800	-0.44896100	0.00000000
H	4.86090600	-0.35553800	-0.00000100
Te	-0.16285600	-0.43186200	-0.00000100

---

---

**Cl<sub>2</sub>Te•••CO**

---

Cl	-0.37316900	1.85995300	0.00000000
Cl	2.57791500	-0.12569400	-0.00000100
C	-2.84586300	-0.55093800	-0.00000600
O	-3.98494000	-0.40649600	0.00000200
Te	0.22065400	-0.44086200	0.00000100

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---

**Cl<sub>2</sub>Te•••OCH<sub>2</sub>**

---

O	-2.39317000	-0.92483700	-0.00000200
Cl	2.56089200	0.05330700	0.00006400
Cl	-0.50708700	1.80869400	-0.00013100
C	-3.30953200	-0.10325900	-0.00007900
H	-3.10270900	0.98303800	-0.00014200
H	-4.36255700	-0.44366100	-0.00008400
Te	0.22217600	-0.46490700	0.00003500

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---

**Cl<sub>2</sub>Te...C<sub>2</sub>H<sub>4</sub>**

---

Cl	-2.51220200	-0.17343200	-0.00008100
Cl	0.31568600	1.91853000	0.00027900
C	2.69133800	-0.46189800	0.68204800
H	2.79131900	-1.39262100	1.24736100
H	2.63754600	0.47262000	1.24626200
C	2.69134000	-0.46171900	-0.68207500
H	2.63754000	0.47294800	-1.24604100
H	2.79131600	-1.39229300	-1.24763300
Te	-0.11178900	-0.42857000	-0.00006100

---

---

**Cl<sub>2</sub>Te...OHCH<sub>3</sub>**

---

Cl	0.37833200	1.86331500	-0.07417300
Cl	-2.56697400	-0.04532800	0.27181100
C	3.06731800	-0.30719800	0.72449800
H	4.14558100	-0.34647000	0.51250800
H	2.80538000	-1.08601100	1.45029300
H	2.78631200	0.68000600	1.11982300
O	2.30993200	-0.61130500	-0.47655400
H	2.50838900	0.07555200	-1.13298000
Te	-0.22927100	-0.45183100	-0.11238600

---

---

**Cl<sub>2</sub>Te...PH<sub>3</sub>**

---

H	3.36057800	0.38332000	1.06373600
H	3.36078700	0.38294100	-1.06366400
Cl	-2.63865700	-0.08301400	-0.00000600
Cl	0.31000900	1.86586900	-0.00031500
H	3.84025600	-1.40524800	0.00040000
P	2.83646700	-0.39724000	0.00012300
Te	-0.26003100	-0.45598000	0.00006000

---

---

**Cl<sub>2</sub>Te•••O(CH<sub>3</sub>)<sub>2</sub>**

---

Cl	0.14535500	1.87486800	0.00001900
Cl	-2.79611200	-0.06252400	0.00000600
C	2.73028200	-0.15773600	1.18854700
H	3.77649900	-0.50370700	1.21214100
H	2.17755400	-0.56459600	2.04440800
H	2.69186400	0.94361000	1.20427800
O	2.08476900	-0.65973800	-0.00001100
Te	-0.41674000	-0.44981600	-0.00000800
C	2.73028000	-0.15766600	-1.18854000
H	3.77649800	-0.50362800	-1.21214700
H	2.17755800	-0.56448800	-2.04442500
H	2.69184200	0.94367900	-1.20421800

---

---

**O<sub>2</sub>Te•••OH<sub>2</sub>**

---

O	0.24765100	-1.52804500	0.78521000
O	0.24757000	1.52804800	0.78521200
H	-2.57543200	0.76434100	0.39889700
H	-2.57544900	-0.76441700	0.39888100
O	-2.46595000	-0.00003300	-0.18819600
Te	0.40224500	0.00000600	-0.22799200

---

---

**O<sub>2</sub>Te•••SH<sub>2</sub>**

---

O	0.60615800	-1.52949900	0.78387100
O	0.60612300	1.52949800	0.78387400
H	-2.38600500	0.97515600	0.73220400
H	-2.38601000	-0.97516200	0.73221600
S	-2.78488300	-0.00000700	-0.11571100
Te	0.76215200	0.00000200	-0.23375000

---

---

**O<sub>2</sub>Te•••NH<sub>3</sub>**

---

O	0.38030200	-1.52425100	0.77769200
O	0.38030100	1.52425200	0.77769200

---

---

N	-2.33747800	0.00000000	-0.01929600
H	-2.46568900	-0.82523400	0.57081700
H	-3.07135100	0.00000200	-0.72897400
H	-2.46568700	0.82523100	0.57082100
Te	0.35154300	0.00000000	-0.24462800

---

---

**O<sub>2</sub>Te...NCH**

---

O	0.80607600	-1.53001500	0.77308600
O	0.80486000	1.53036100	0.77287700
N	-2.56479100	-0.00049300	-0.25671100
C	-3.65671200	-0.00016100	0.19333400
H	-4.65302300	0.00013700	0.60564200
Te	0.60883400	0.00002900	-0.23723800

---

---

**O<sub>2</sub>Te...CO**

---

O	0.70565500	-1.53524200	0.79099900
O	0.69748100	1.53602700	0.79072000
C	-2.86960800	-0.00265100	-0.27108500
O	-3.93900500	-0.00116500	0.14998200
Te	0.72124200	0.00036400	-0.23513600

---

---

**O<sub>2</sub>Te...OCH<sub>2</sub>**

---

O	0.10395600	1.54246300	0.57924600
O	-1.07800200	-1.23167400	1.00043700
C	2.72549400	0.02246300	0.29453700
H	2.22199400	0.86377100	0.81462200
H	3.80997500	-0.13480000	0.44876800
O	2.09161400	-0.72827500	-0.44677700
Te	-0.60241300	0.04761800	-0.23257400

---

---

**O<sub>2</sub>Te...C<sub>2</sub>H<sub>4</sub>**

---

O	-0.83043800	1.56970800	0.62976500
---	-------------	------------	------------

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---

O	-0.41218300	-1.45036500	0.92395100
C	2.94611700	-0.54348300	-0.17355900
H	2.53506100	-1.35823000	0.42934700
H	3.49770000	-0.81271400	-1.07883100
C	2.78230300	0.74740700	0.18945700
H	3.19253800	1.56425200	-0.41084600
H	2.23818600	1.01857600	1.09881100
Te	-0.69025100	-0.04981100	-0.24160800

---

---

**O<sub>2</sub>Te•••OHCH<sub>3</sub>**

---

O	0.12630500	1.57052900	0.66771600
O	0.75659600	-1.40303500	0.90393100
C	-2.76004700	0.26410000	0.14623200
H	-3.64795900	-0.22219500	0.57511700
H	-3.06194800	0.91060300	-0.68629400
H	-2.23913000	0.86362700	0.90899300
O	-1.86990900	-0.73291700	-0.42017600
H	-1.68256400	-1.39593300	0.26798200
Te	0.67476800	0.05351300	-0.21451800

---

---

**O<sub>2</sub>Te•••PH<sub>3</sub>**

---

O	-0.03448900	1.37563400	0.82726300
O	-1.43547000	-1.34939100	0.74700600
H	4.21364100	-0.69273800	-0.11653200
H	2.69724300	-0.41081100	1.31697400
H	3.14652900	1.12119000	-0.03516000
P	2.85232800	-0.27083400	-0.09178100
Te	-0.79005100	0.07374800	-0.23812900

---

---

**O<sub>2</sub>Te•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	1.01596600	1.63026700	0.29709900
O	0.46028100	-1.21852500	1.22191400
C	-2.10212400	1.22780000	0.43651600

---



H	-3.17675200	1.45635100	0.35366200
H	-1.49826600	2.11299100	0.20216200
H	-1.86512500	0.87694800	1.45508400
O	-1.75951500	0.21361300	-0.53374100
Te	0.83751400	-0.12637000	-0.20812100
C	-2.40672800	-1.03390300	-0.21007500
H	-3.49867500	-0.88646400	-0.18984900
H	-2.14305300	-1.74588900	-1.00345700
H	-2.04960500	-1.40894500	0.76385000

## 26. Polonium Bonded Complexes

<b>F<sub>2</sub>Po•••OH<sub>2</sub></b>			
O	2.50172500	-0.26165000	-0.00028100
H	2.79670600	0.25589000	0.76451000
H	2.79543400	0.26165000	-0.76165400
Po	-0.12450800	-0.19865400	-0.00004300
F	0.43107600	1.76023400	0.00011400
F	-2.11411000	0.26894800	0.00022200

<b>F<sub>2</sub>Po•••SH<sub>2</sub></b>			
S	2.75355400	-0.17530900	0.00000300
H	2.72678200	0.76018500	0.97554700
H	2.72680000	0.76013200	-0.97559400
Po	-0.35335300	-0.19858300	0.00000000
F	0.15036500	1.77352000	0.00000000
F	-2.35356600	0.22265700	0.00000000

<b>F<sub>2</sub>Po•••NH<sub>3</sub></b>			
H	2.95619800	-0.46737500	0.82387700
H	2.54186000	0.89917500	-0.00004300
N	2.46378300	-0.12123000	0.00000200
H	2.95622100	-0.46745100	-0.82382700
F	0.41986600	1.75772400	-0.00000100
F	-2.11324200	0.33149200	0.00000300
Po	-0.12452800	-0.21331800	0.00000000

<b>F<sub>2</sub>Po•••NCH</b>			
N	2.40201700	-0.24068100	-0.00000300
C	3.56024900	-0.02479800	-0.00000700
H	4.61944800	0.17724800	-0.00001300
F	-2.29423400	0.19387400	0.00000300

F	0.19825300	1.77899600	-0.00002700
Po	-0.28489600	-0.19166100	0.00000300

---

**F<sub>2</sub>Po•••OCH<sub>2</sub>**

---

O	-2.23388200	-0.63842900	0.00000700
C	-3.05513900	0.28167000	-0.00001100
H	-2.72465100	1.33479700	-0.00002200
H	-4.13578000	0.04990900	-0.00001900
F	-0.46326200	1.67257200	0.00000900
F	2.23847900	0.50851800	-0.00000900
Po	0.32244500	-0.20948900	0.00000100

---

**F<sub>2</sub>Po•••C<sub>2</sub>H<sub>2</sub>**

---

C	-2.57686700	-0.11347000	-0.62056100
H	-2.68652900	-0.08918900	-1.69217000
C	-2.57688000	-0.11345400	0.62056800
H	-2.68649000	-0.08915500	1.69218100
Po	0.19460600	-0.17490900	-0.00000100
F	-0.02436300	1.83953700	-0.00000700
F	2.24087200	-0.03595100	0.00000600

---

**F<sub>2</sub>Po•••OHCH<sub>3</sub>**

---

C	2.96622100	0.19624300	0.55817600
H	4.03031400	0.10008200	0.30028600
H	2.76597500	-0.31857800	1.50494500
H	2.67306100	1.25216700	0.63550900
O	2.15215900	-0.48200800	-0.44064300
H	2.31568300	-0.05200300	-1.29454800
F	0.32099000	1.69962900	-0.27349900
F	-2.26887300	0.43921300	0.29573500
Po	-0.34843700	-0.20896000	-0.01393100

---

**F<sub>2</sub>Po•••PH<sub>3</sub>**

---

H	3.13141100	0.71560000	1.06898200
H	3.13145000	0.71562000	-1.06889300
H	3.68117800	-1.05910800	0.00003400
P	2.65100500	-0.08100000	0.00002800
F	0.26088000	1.72452700	0.00003000
F	-2.33087000	0.38767900	0.00000700
Po	-0.36999100	-0.21627300	-0.00001000

---

**F<sub>2</sub>Po•••O(CH<sub>3</sub>)<sub>2</sub>**

---

C	2.59811600	0.08165600	1.18840600
H	3.67614200	-0.14551900	1.19129700
H	2.10902100	-0.39478300	2.04656500
H	2.43251600	1.17015000	1.21372400

O	1.99462200	-0.48070000	-0.00008100
Po	-0.51136100	-0.21043100	-0.00004800
F	0.17237400	1.71153900	0.00034700
F	-2.46300000	0.43037900	0.00006500
C	2.59814000	0.08216900	-1.18831300
H	2.10906200	-0.39390000	-2.04668800
H	2.43254000	1.17067300	-1.21316600
H	3.67616600	-0.14500600	-1.19128000

<b>F<sub>2</sub>Po•••CO</b>			
C	2.53310200	-0.21988100	0.00000000
O	3.66175400	-0.01592100	-0.00000300
Po	-0.31326600	-0.19915000	0.00000100
F	0.27332800	1.74239700	0.00000100
F	-2.29314300	0.27707800	-0.00000500

<b>Cl<sub>2</sub>Po•••OH<sub>2</sub></b>			
O	2.64065200	-0.81070900	0.00015900
H	3.02176900	-0.34919800	0.76295600
H	3.02179500	-0.34941800	-0.76275900
Po	-0.00308800	-0.35911000	0.00004900
Cl	0.84173100	1.97563300	-0.00025500
Cl	-2.42463700	0.22139900	-0.00007500

<b>Cl<sub>2</sub>Po•••SH<sub>2</sub></b>			
S	2.97824800	-0.49662100	-0.00000700
H	3.01200500	0.43973300	0.97483400
H	3.01198700	0.43975000	-0.97483000
Po	-0.17584200	-0.32614100	0.00000300
Cl	0.36825100	2.09540900	0.00000100
Cl	-2.65679500	-0.06821200	-0.00000700

<b>Cl<sub>2</sub>Po•••NH<sub>3</sub></b>			
H	2.95009100	-0.12924800	0.81805700
H	2.95006700	-0.12897000	-0.81794000
N	2.61023400	-0.63756900	-0.00002300
H	3.05432500	-1.55717000	-0.00018500
Cl	0.83942300	1.96590400	0.00012500
Cl	-2.43920500	0.26280900	-0.00001000
Po	-0.00035500	-0.37630700	-0.00002100

<b>Cl<sub>2</sub>Po•••NCH</b>			
N	-2.61336200	-0.53067200	0.00000400
C	-3.78872000	-0.43806400	0.00000500
H	-4.86332600	-0.34745800	0.00000700
Cl	2.58968100	-0.05985700	-0.00000400

---

Cl	-0.44162900	2.08206800	0.00000000
Po	0.11157500	-0.32960800	0.00000000

---

---

**Cl<sub>2</sub>Po•••OCH<sub>2</sub>**

---

O	-2.42267000	-0.89185600	-0.00002300
C	-3.35762100	-0.08977000	0.00005600
H	-3.17276900	0.99990600	0.00013200
H	-4.40083900	-0.45716400	0.00005100
Cl	-0.64944700	1.98612300	-0.00001600
Cl	2.59574400	0.20434900	0.00002900
Po	0.16682900	-0.35842000	-0.00000700

---

---

**Cl<sub>2</sub>Po•••C<sub>2</sub>H<sub>4</sub>**

---

C	-2.66385700	-0.45317100	-0.68502400
H	-2.74897900	-1.38576400	-1.25009800
H	-2.65250600	0.48440400	-1.24698500
C	-2.66385800	-0.45315800	0.68502800
H	-2.65250800	0.48442800	1.24697000
H	-2.74898200	-1.38573900	1.25012000
Po	0.07273500	-0.32778900	0.00000300
Cl	-0.42196000	2.10162800	-0.00002100
Cl	2.57840400	-0.05604500	0.00000300

---

---

**Cl<sub>2</sub>Po•••OHCH<sub>3</sub>**

---

C	3.15342500	-0.26774500	0.74424200
H	4.22702600	-0.34457900	0.52042800
H	2.88127500	-1.00611000	1.50754300
H	2.90007200	0.74343500	1.09427600
O	2.37320700	-0.60747200	-0.43473500
H	2.58871800	0.03935200	-1.12575700
Cl	0.53750900	2.02983100	-0.08358000
Cl	-2.60897500	0.11758600	0.29451500
Po	-0.18200500	-0.35085600	-0.07821400

---

---

**Cl<sub>2</sub>Po•••PH<sub>3</sub>**

---

H	3.41573600	0.38476800	1.06796600
H	3.41580600	0.38490500	-1.06777200
H	3.83568000	-1.42518300	-0.00000600
P	2.87611600	-0.37634400	0.00003100
Cl	0.47612900	2.04119300	0.00017000
Cl	-2.66913300	0.07223600	-0.00004400
Po	-0.19676100	-0.35271000	-0.00003300

---

---

**Cl<sub>2</sub>Po•••O(CH<sub>3</sub>)<sub>2</sub>**

---

C	2.85397700	-0.14842200	1.18865700
H	3.89830600	-0.49995600	1.20373000

---

H	2.30478400	-0.55659900	2.04603400
H	2.81930600	0.95281500	1.20832200
O	2.19845600	-0.64230000	-0.00000800
Po	-0.33149100	-0.34540600	0.00000300
Cl	0.32911300	2.04999100	0.00000600
Cl	-2.80174900	0.07594300	-0.00001000
C	2.85397100	-0.14840700	-1.18867100
H	2.30477100	-0.55657100	-2.04605000
H	2.81930200	0.95283000	-1.20832000
H	3.89829900	-0.49994300	-1.20375500

---

**Cl<sub>2</sub>Po...CO**

---

C	2.78192700	-0.51633400	0.00000100
O	3.92369900	-0.40191400	0.00000000
Po	-0.14958000	-0.34178400	0.00000000
Cl	0.51311300	2.04072200	-0.00000200
Cl	-2.60231400	0.01946500	0.00000000

---

**O<sub>2</sub>Po...OH<sub>2</sub>**

---

O	2.74334000	-0.36069500	-0.00003600
H	3.70279000	-0.46551200	0.00016000
H	2.57173800	0.59939200	0.00000100
Po	-0.19864900	-0.13633200	0.00000300
O	0.69622300	1.59614700	0.00000200
O	-2.13806500	0.17929900	-0.00001400

---

**O<sub>2</sub>Po...SH<sub>2</sub>**

---

S	3.15462000	-0.20620100	-0.06901700
H	3.35102200	-0.21599100	1.26715500
H	2.46959100	0.96507400	-0.02398300
Po	-0.46457400	-0.12910500	-0.00636300
O	0.26241600	1.68344900	0.00027500
O	-2.42120200	-0.00908000	0.04916800

---

**O<sub>2</sub>Po...NH<sub>3</sub>**

---

H	3.38288600	-0.57614800	0.81627700
H	2.69482700	0.67214200	0.00002800
N	2.81462000	-0.34506500	0.00000600
H	3.38290900	-0.57612000	-0.81625800
O	0.52611100	1.68700500	0.00000000
O	-2.16569100	0.01519900	0.00001700
Po	-0.19102800	-0.12764300	-0.00000300

---

**O<sub>2</sub>Po...NCH**

---

N	-2.76551900	-0.47826600	-0.00003400
C	-3.87682400	-0.07941300	0.00005100

---

H	-4.89051900	0.28888900	0.00012900
O	2.30112100	-0.35253900	0.00011200
O	-0.02412400	1.81689200	0.00002100
Po	0.34874000	-0.09737300	-0.00001500

---

**O<sub>2</sub>Po•••OCH<sub>2</sub>**

---

O	-2.52726900	-0.79849800	0.00000400
C	-3.22170300	0.21770500	-0.00001400
H	-2.75323400	1.22137500	-0.00005300
H	-4.32746200	0.14121900	0.00001200
O	-0.41103600	1.66459800	0.00001000
O	2.33758700	0.06856700	-0.00001600
Po	0.37162700	-0.12078800	0.00000200

---

**O<sub>2</sub>Po•••C<sub>2</sub>H<sub>4</sub>**

---

C	3.07461600	-0.17693800	0.67626800
H	3.44550300	-1.03411300	1.24543700
H	2.71982200	0.69382600	1.23485400
C	3.07461600	-0.17692200	-0.67626600
H	2.71982300	0.69385700	-1.23483000
H	3.44550300	-1.03408200	-1.24545600
Po	-0.37502200	-0.11193700	-0.00000200
O	0.12092400	1.77389400	0.00001300
O	-2.33645200	-0.24809800	0.00000500

---

**O<sub>2</sub>Po•••OHCH<sub>3</sub>**

---

C	3.84233100	-0.23756400	0.00000900
H	4.29041400	0.21356600	-0.89964600
H	4.05015400	-1.31513000	0.00000200
H	4.29038400	0.21354900	0.89968700
O	2.41316700	-0.09046500	-0.00001400
H	2.17733400	0.85615300	-0.00000800
O	0.22682100	1.68895000	0.00000100
O	-2.43684300	-0.02936200	0.00000400
Po	-0.47008900	-0.13209200	0.00000000

---

**O<sub>2</sub>Po•••PH<sub>3</sub>**

---

H	3.30130900	0.73021000	1.04869000
H	3.30130800	0.73005400	-1.04878300
H	4.41345100	-0.72350000	0.00006100
P	3.08497000	-0.20515700	0.00002300
O	0.40098100	1.59760800	-0.00011500
O	-2.43044000	0.15203700	-0.00009500
Po	-0.48874900	-0.13876900	0.00001600

---

**O<sub>2</sub>Po•••O(CH<sub>3</sub>)<sub>2</sub>**

---

C	2.78476500	-1.17665000	0.02953500
H	3.88430900	-1.20789300	-0.06078600
H	2.35398100	-2.04600800	-0.48609000
H	2.49343900	-1.18874200	1.09383100
O	2.26579300	-0.00378800	-0.61690400
Po	-0.58479100	-0.00070800	-0.11500200
O	0.07906700	0.01057500	1.71757500
O	-2.56463700	-0.00034700	-0.05654100
C	2.78476500	1.17692000	0.01509100
H	2.35398100	2.03988300	-0.51116400
H	2.49343800	1.20207400	1.07915900
H	3.88430900	1.20705200	-0.07560500

---

---

**O<sub>2</sub>Po•••CO**

---

C	2.97886700	-0.48297000	0.00000100
O	4.01423500	0.01479500	0.00000300
Po	-0.41325200	-0.13231600	0.00000000
O	0.44502100	1.61979800	-0.00000200
O	-2.35426200	0.11695600	0.00000200

---

## 27. Fluorine Bonded Complexes

---

**CNF•••OH<sub>2</sub>**

---

F	-0.17001200	0.00073500	0.03330100
O	2.75205100	-0.00200800	-0.01301500
H	3.36030500	-0.75258300	-0.01621100
H	3.33616300	0.76750700	-0.01661500
C	-1.45177100	-0.00010300	0.00251500
N	-2.63887700	-0.00069400	-0.02540700

---

---

**CNF•••SH<sub>2</sub>**

---

F	0.97728600	-0.01255300	-0.03063700
H	-2.90673300	0.99539600	0.74106300
H	-2.92694100	-0.95354500	0.77907900
S	-2.54097400	0.00036500	-0.09410800
C	2.26040500	-0.00036200	0.00323200
N	3.44732300	0.00963600	0.03456100

---

---

**CNF...NH<sub>3</sub>**

---

F	-0.23803800	-0.00234100	0.00020900
N	2.90350800	0.00037300	0.00007400
H	3.30285600	-0.93623800	0.06676300
H	3.29570600	0.53031500	0.77886000
H	3.29377400	0.41371200	-0.84727900
C	-1.52015200	-0.00026600	0.00003600
N	-2.70766200	0.00175100	-0.00013700

---

---

**CNF...NCH**

---

C	3.44648500	0.00144600	0.00016200
H	4.52439200	0.00355300	0.00062500
N	2.26397400	-0.00086100	-0.00042700
F	-0.73054500	-0.00233300	0.00021500
C	-2.01261900	-0.00004900	0.00003800
N	-3.20007200	0.00215500	-0.00011100

---

---

**CNF...OCH<sub>2</sub>**

---

F	0.83411600	0.22252800	-0.00505600
O	-2.00512300	-0.10332300	0.02390800
C	-3.22633500	-0.02047700	-0.01186800
H	-3.74331700	0.96274600	-0.01372000
H	-3.87157500	-0.92439500	-0.04512100
C	2.10013200	0.01806700	-0.00243300
N	3.27229200	-0.17143800	-0.00016000

---

---

**CNF...C<sub>2</sub>H<sub>4</sub>**

---

C	-2.57614900	-0.67052100	-0.00552600
H	-2.59556000	-1.23871800	0.92820900
H	-2.58309800	-1.23864700	-0.93948200
C	-2.55119700	0.67876400	-0.00532100
H	-2.53702200	1.24661100	-0.93936700
H	-2.54948200	1.24755800	0.92821300

---



---

F	0.72857300	-0.00672300	0.02115200
C	2.01241600	-0.00237300	0.00150800
N	3.19965500	0.00121100	-0.01598600

---

---

**CNF•••OHCH<sub>3</sub>**

---

F	-0.80623400	-0.24040900	-0.02878200
O	2.02344500	-0.66711900	0.00926500
H	2.77096400	-1.27775900	0.04545100
C	2.55003200	0.66864800	0.00069300
H	1.68401300	1.34180400	-0.04163400
H	3.12414100	0.88927100	0.91593400
H	3.18447900	0.85397200	-0.88193200
C	-2.06480800	0.00539800	-0.00238300
N	-3.22948400	0.23558100	0.02246300

---

---

**CNF•••PH<sub>3</sub>**

---

F	1.05740700	-0.01629500	-0.13278200
H	-3.23199900	-0.93854800	1.09556000
H	-3.45569400	-0.04551900	-0.77381900
H	-3.22185500	1.13821600	0.92506600
P	-2.54369900	0.03975600	0.31916500
C	2.33096900	-0.03642400	-0.29263300
N	3.50893600	-0.05504200	-0.44049200

---

---

**CNF•••CO**

---

F	0.00000000	-0.82761000	0.00000000
C	-0.00974300	2.42934200	0.00000000
O	-0.03318200	3.57899400	0.00000000
C	0.01660700	-2.11141500	0.00000000
N	0.03203900	-3.29871800	0.00000000

---

---

**CNF•••O(CH<sub>3</sub>)<sub>2</sub>**

---

F	1.12735000	-0.00094700	-0.15514300
O	-1.74530600	0.00011100	-0.56770200
C	-1.96367900	-1.17092500	0.21283500
H	-1.77872900	-2.03466200	-0.43928400
H	-1.27326000	-1.20740900	1.07707400
H	-3.00300800	-1.21142100	0.58888500
C	-1.96281500	1.17145600	0.21261000
H	-1.27235700	1.20760700	1.07683100
H	-1.77724900	2.03493300	-0.43967900
H	-3.00210700	1.21278200	0.58867000
C	2.40226100	-0.00022200	-0.00469200
N	3.58120100	0.00056500	0.13727000

---

---

**NCF•••OH<sub>2</sub>**

---

F	0.14465600	-0.00888800	0.00031000
O	-2.62901900	-0.00138800	-0.00987800
H	-3.25990000	-0.73205300	0.03540200
H	-3.18603500	0.78681700	0.03283600
N	1.45791700	-0.00072000	0.00111700
C	2.66179400	0.00689600	0.00002900

---

---

**NCF•••SH<sub>2</sub>**

---

F	0.91427800	-0.00353300	0.00449200
H	-2.76654100	0.97175600	0.77290600
H	-2.75977600	-0.97772800	0.76617000
S	-2.43173100	0.00118200	-0.10311500
N	2.22917700	-0.00005200	0.00446900
C	3.43354500	0.00320200	0.00650800

---

---

**NCF...NH<sub>3</sub>**

---

F	-0.19081300	0.00173200	-0.00044800
N	2.73273400	-0.00032200	-0.00007000
H	3.13111400	0.86017100	-0.37702000
H	3.12506300	-0.76027800	-0.55666000
H	3.12384200	-0.10560900	0.93651700
N	-1.50528900	0.00012200	-0.00004000
C	-2.70913700	-0.00141200	0.00032600

---

---

**NCF...NCH**

---

C	0.00000000	0.00000000	-3.32884900
H	0.00000000	0.00000000	-4.40679300
N	0.00000000	0.00000000	-2.14645200
F	0.00000000	0.00000000	0.68634800
N	0.00000000	0.00000000	2.00031200
C	0.00000000	0.00000000	3.20428900

---

---

**NCF...FH**

---

F	0.00000000	0.00000000	-0.12310400
F	0.00000000	0.00000000	2.60790700
H	0.00000000	0.00000000	3.53273200
N	0.00000000	0.00000000	-1.43628000
C	0.00000000	0.00000000	-2.64033200

---

---

**NCF...OCH<sub>2</sub>**

---

F	0.79026300	-0.00036400	0.00006400
O	-1.91988700	-0.00264800	0.00007500
C	-3.14426000	0.00177100	-0.00006900
H	-3.72302900	0.95002100	-0.00012500
H	-3.72987300	-0.94226300	-0.00012900
N	2.10323100	0.00027400	-0.00001600
C	3.30709500	0.00069200	-0.00006600

---

---

**NCF...C<sub>2</sub>H<sub>4</sub>**

---

C	2.43262600	-0.67412100	0.00000400
H	2.44004000	-1.24221500	-0.93394300
H	2.43815200	-1.24225000	0.93394300
C	2.42361200	0.67562600	0.00000700
H	2.42148200	1.24375400	0.93396300
H	2.42337400	1.24376200	-0.93394500
F	-0.66037400	0.00079300	0.00019000
N	-1.97620200	-0.00092700	-0.00014600
C	-3.18061600	-0.00212100	-0.00012800

---

---

**NCF...OHCH<sub>3</sub>**

---

F	-0.78686100	-0.27355100	-0.00026000
O	1.90766000	-0.64277000	0.00070200
H	2.61174000	-1.30402600	-0.00258500
C	2.52190000	0.65557100	-0.00011700
H	1.70148300	1.38481200	0.00488000
H	3.14265100	0.81562400	0.89696900
H	3.13424500	0.81842900	-0.90246900
N	-2.06633300	0.02552600	-0.00007100
C	-3.23945300	0.29619500	0.00018800

---

---

**NCF...PH<sub>3</sub>**

---

F	0.99828000	-0.00020000	-0.00018100
H	-3.20689200	1.07028300	0.55238700
H	-3.20974400	-1.01226600	0.64969900
H	-3.20798000	-0.05526800	-1.20246700
P	-2.44379300	-0.00012200	0.00006800
N	2.31313900	-0.00001000	-0.00000100
C	3.51750200	0.00015900	0.00016500

---

---

**NCF...CO**

---

F	0.00000000	0.78551800	0.00000000
---	------------	------------	------------

---

---

C	0.00198500	-2.31440800	0.00000000
O	0.00406900	-3.46410200	0.00000000
N	-0.00332900	2.10030300	0.00000000
C	-0.00352600	3.30458000	0.00000000

---

---

**NCCCF•••OH<sub>2</sub>**

---

F	-1.16891200	-0.00041400	0.01803100
O	-4.08050600	-0.00225400	-0.01331400
H	-4.65903900	0.77154600	-0.01293100
H	-4.69467700	-0.74807400	-0.01316700
C	0.11352400	-0.00033200	0.01049800
C	1.34207700	-0.00024200	0.00309200
C	2.72571500	-0.00002400	-0.00512600
N	3.91858200	0.00026800	-0.01149200

---

---

**NCCCF•••SH<sub>2</sub>**

---

F	0.35657900	0.00169900	-0.01565300
H	4.27755200	-0.97353000	0.72610200
H	4.27352400	0.97621500	0.72340100
S	3.81909200	-0.00073100	-0.08922800
C	-0.92767600	0.00069600	-0.00814700
C	-2.15590800	-0.00049700	-0.00065200
C	-3.53960800	-0.00087400	0.00901000
N	-4.73237200	-0.00031900	0.01682300

---

---

**NCCCF•••NH<sub>3</sub>**

---

F	1.12009200	-0.00186800	-0.00076000
N	4.24764700	0.00119000	-0.00034400
H	4.63989200	-0.73434200	0.58811700
H	4.63773700	0.87783500	0.34675000
H	4.64777100	-0.13726800	-0.92872100
C	-0.16227200	-0.00123100	-0.00001100
C	-1.39099600	-0.00059800	0.00054500

---

---

C	-2.77459300	0.00053900	0.00022300
N	-3.96751400	0.00142800	-0.00020500

---

---

**NCCCF•••NCH**

---

F	0.64369300	-0.00479600	0.00009800
C	-0.63855700	-0.00268900	0.00001700
C	-1.86715700	-0.00043700	-0.00033500
C	-3.25071100	0.00161500	-0.00006700
N	-4.44360900	0.00335100	0.00018900
N	3.60676600	-0.00028200	0.00001200
C	4.78934600	0.00385700	0.00001200
H	5.86714900	0.00760200	-0.00005500

---

---

**NCCCF•••OCH<sub>2</sub>**

---

F	-0.51753800	0.00070100	-0.02348600
O	-3.32584900	-0.00010600	0.07257100
C	-4.54596500	-0.00044600	-0.02891200
H	-5.12673900	0.94540000	-0.07742500
H	-5.12620100	-0.94661600	-0.07755500
C	0.76465900	0.00040700	-0.01462100
C	1.99310300	0.00016600	-0.00708200
C	3.37669800	-0.00021200	0.00261100
N	4.56951500	-0.00053200	0.01054400

---

---

**NCCCF•••C<sub>2</sub>H<sub>4</sub>**

---

C	-3.84044400	0.67511100	0.00000600
H	-3.84184400	1.24335300	-0.93386000
H	-3.84252200	1.24335700	0.93386700
C	-3.84281600	-0.67435000	0.00000900
H	-3.84689400	-1.24258500	0.93387100
H	-3.84621500	-1.24258900	-0.93385200
F	-0.59737300	-0.00041200	0.00052200
C	0.68708300	-0.00029800	0.00024800

---

---

C	1.91529300	-0.00029000	-0.00001800
C	3.29919200	-0.00003000	-0.00033100
N	4.49199800	0.00018800	-0.00060200

---

---

**NCCCF•••OHCH<sub>3</sub>**

---

F	0.49658900	-0.08452800	0.00156500
O	3.29316300	-0.68499000	-0.00067400
H	4.05387100	-1.28026200	-0.00164400
C	3.78916000	0.66226000	-0.00051500
H	2.90722700	1.31563600	0.00093600
H	4.39000700	0.87849500	0.89840400
H	4.38780300	0.87949500	-0.90065900
C	-0.78550300	-0.04452800	0.00090000
C	-2.01316600	-0.00444300	0.00031300
C	-3.39621800	0.03853000	-0.00044300
N	-4.58845000	0.07662900	-0.00103700

---

---

**NCCCF•••PH<sub>3</sub>**

---

F	0.29064600	-0.00022400	-0.00495800
H	4.60069200	-0.83753300	0.88831500
H	4.62160400	1.16656200	0.31925000
H	4.67507200	-0.32862600	-1.13062700
C	-0.99358500	-0.00013400	-0.00294800
C	-2.22182600	-0.00012100	-0.00078000
C	-3.60572200	0.00003200	0.00135100
N	-4.79854400	0.00023600	0.00317300
P	3.86689500	0.00008600	-0.00268500

---

---

**NCCCF•••CO**

---

F	-0.57866900	0.00460100	-0.00125700
C	-3.77967300	0.00354400	0.00242500
O	-4.92955000	-0.00581700	-0.00064000
C	0.70584100	0.00244500	-0.00060100

---

C	1.93400000	0.00054000	-0.00022100
C	3.31796500	-0.00166300	0.00034000
N	4.51080300	-0.00343800	0.00068200

---

**NCCCF•••FH**

---

F	-1.20412900	0.11800500	0.00002400
C	0.07813600	0.06972900	-0.00001200
C	1.30552600	0.02413400	0.00030600
C	2.68832200	-0.03044800	-0.00022300
N	3.88021600	-0.07765000	-0.00031000
F	-3.98317500	-0.09068900	0.00208700
H	-4.90767300	-0.08277600	-0.01725800

---

28. Chlorine Bonded Complexes

---

**ClCl•••OH<sub>2</sub>**

---

O	-2.90348000	-0.00111700	-0.07445300
H	-3.28542500	0.76131300	0.38096000
H	-3.28772100	-0.76341900	0.37922600
Cl	-0.14822900	0.00159600	-0.03105200
Cl	1.90122800	-0.00094700	0.02137200

---

**ClCl•••SH<sub>2</sub>**

---

H	2.82025900	-0.97043900	0.83895800
H	2.81882300	0.98058200	0.82902300
Cl	-0.40983400	-0.00213500	-0.03216300
S	2.70574500	0.00027100	-0.09294600
Cl	-2.46846000	0.00128300	0.02152400

---

**ClCl•••NH<sub>3</sub>**

---

N	2.75131300	0.00000700	-0.00002400
H	3.12587600	-0.82673100	0.46509100
H	3.12575200	0.81613900	0.48355800
H	3.12625000	0.01069700	-0.94841400
Cl	0.20085400	-0.00001900	0.00000000
Cl	-1.88538800	0.00000900	-0.00000400

---

**ClCl•••NCH**

---

C	0.01152100	-3.70281800	0.00000000
H	0.01125500	-4.78058300	0.00000000
N	0.01076400	-2.52116400	0.00000000
Cl	0.00000000	0.28844200	0.00000000

---



---

Cl	-0.00916100	2.33777200	0.00000000
----	-------------	------------	------------

---

---

**ClCl••CO**

---

C	0.00000000	0.00000000	-2.69738800
O	0.00000000	0.00000000	-3.84685600
Cl	0.00000000	0.00000000	0.35884500
Cl	0.00000000	0.00000000	2.40345900

---

---

**ClCl••OCH<sub>2</sub>**

---

O	2.41652800	-0.54408200	0.00002500
C	2.88245700	0.59042100	0.00013000
H	2.22530900	1.48529800	0.00024200
H	3.97839500	0.76273800	0.00020200
Cl	-0.25944800	-0.27293200	0.00002600
Cl	-2.26000400	0.18834900	-0.00011000

---

---

**ClCl••C<sub>2</sub>H<sub>4</sub>**

---

C	2.65285500	-0.67704400	0.00001400
H	2.65745200	-1.24380200	-0.93464700
H	2.65700800	-1.24379300	0.93468100
C	2.65286000	0.67703900	0.00001400
H	2.65701800	1.24378700	0.93468100
H	2.65746200	1.24379600	-0.93464700
Cl	-0.21577800	0.00000500	-0.00049100
Cl	-2.28205900	-0.00000200	0.00047700

---

---

**ClCl••OHCH<sub>3</sub>**

---

O	2.26198500	-0.63690000	-0.08245700
H	2.52866400	-1.12390000	0.70951900
C	2.78845400	0.70049000	0.01818500
H	2.47294500	1.22112600	-0.89437600
H	2.37927300	1.23150700	0.89292000
H	3.88897200	0.69502900	0.06741200
Cl	-0.35200500	-0.25419100	-0.03844000
Cl	-2.35955200	0.18763200	0.02520900

---

---

**ClCl••FH**

---

F	-0.91837800	2.87637800	0.00000000
H	-1.81003400	3.12485900	0.00000000
Cl	0.00000000	0.12389100	0.00000000
Cl	0.59267300	-1.83049400	0.00000000

---

---

**ClCl••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	1.87333000	-0.00000100	-0.47189200
C	2.30147000	1.17773300	0.21890500

---

H	1.93081600	2.03739600	-0.35391500
H	1.88298600	1.20528900	1.24147100
H	3.40406700	1.21466500	0.27498300
Cl	-0.66096200	-0.00000100	-0.21190700
Cl	-2.69433600	0.00000000	0.14268300
C	2.30147400	-1.17772900	0.21890500
H	1.88299600	-1.20528700	1.24147400
H	1.93082000	-2.03739600	-0.35390900
H	3.40407200	-1.21466200	0.27498000

---

**FCI•••OH<sub>2</sub>**

---

F	-1.99234700	-0.00001500	0.02885500
O	2.23464100	0.00000300	-0.09108900
H	2.57056800	-0.76402700	0.39824300
H	2.57081200	0.76386000	0.39834500
Cl	-0.29925800	0.00001600	-0.01926900

---

**FCI•••SH<sub>2</sub>**

---

F	2.51048100	-0.00001200	0.03140900
H	-2.11924600	0.97683800	0.82816400
H	-2.11913100	-0.97693400	0.82807600
Cl	0.79569500	0.00001300	-0.02243400
S	-1.99267300	-0.00000100	-0.09734700

---

**FCI•••NH<sub>3</sub>**

---

F	-1.97307900	0.00005400	0.00002900
N	2.04897000	0.00000900	0.00001200
H	2.40450500	-0.64396600	-0.70575500
H	2.40417700	-0.28904400	0.91076800
H	2.40380200	0.93348900	-0.20485500
Cl	-0.22338600	-0.00006000	-0.00002900

---

**FCI•••NCH**

---

C	0.00000000	0.00000000	3.02062600
H	0.00000000	0.00000000	4.09847500
N	0.00000000	0.00000000	1.84033000
F	0.00000000	0.00000000	-2.45647500
Cl	0.00000000	0.00000000	-0.76448600

---

**FCI•••CO**

---

---

F	0.00000000	0.00000000	2.50078400
C	0.00000000	0.00000000	-1.94009700
O	0.00000000	0.00000000	-3.08836000
Cl	0.00000000	0.00000000	0.81414100

---

---

**FCI•••OCH<sub>2</sub>**

---

F	-2.35115500	0.24931200	-0.00025200
O	1.72177500	-0.56941300	-0.00022300
C	2.34169900	0.49130600	-0.00006100
H	1.81453000	1.46669400	0.00011300
H	3.44922000	0.50083400	0.00034200
Cl	-0.70163200	-0.15316900	0.00023300

---

---

**FCI•••C<sub>2</sub>H<sub>4</sub>**

---

C	1.94715400	0.68017500	-0.00000900
H	1.96002800	1.24514500	0.93518400
H	1.96023400	1.24515600	-0.93519200
C	1.94715300	-0.68017500	-0.00000900
H	1.96023300	-1.24515600	-0.93519200
H	1.96002700	-1.24514500	0.93518300
F	-2.32871800	0.00000000	0.00012700
Cl	-0.60281800	0.00000000	-0.00006000

---

---

**FCI•••OHCH<sub>3</sub>**

---

F	-2.43716300	0.27307300	0.03764300
O	1.56794600	-0.65196200	-0.10011300
H	1.75006300	-1.18087300	0.69032500
C	2.27728200	0.60133600	0.02259900
H	2.04492500	1.16922300	-0.88602800
H	1.93656100	1.16857800	0.90271300
H	3.36307400	0.43035500	0.07930500
Cl	-0.78631900	-0.14336800	-0.02704700

---

---

**FCI•••FH**

---

F	-2.02551000	0.04065200	0.00002000
Cl	-0.34555200	-0.02770500	-0.00001700
F	2.36598700	-0.07079600	0.00001300
H	2.81009300	0.74226800	-0.00000900

---

---

**FCI•••O(CH<sub>3</sub>)<sub>2</sub>**

---

F	-2.73522300	-0.00000100	0.18306000
O	1.24903900	-0.00000200	-0.45654100
C	1.76166900	1.18421300	0.17515000
H	1.31948800	2.03964600	-0.34999400
H	1.47438200	1.20893700	1.24080600
H	2.86071200	1.21239200	0.08446600

---

Cl	-1.04852500	-0.00001000	-0.12044800
C	1.76171300	-1.18419400	0.17515500
H	1.47440300	-1.20893700	1.24080400
H	1.31958700	-2.03964600	-0.35000300
H	2.86076000	-1.21231800	0.08449600

---

**NCCI•••OH<sub>2</sub>**

---

O	-2.87688600	-0.00011500	-0.00013100
H	-3.47157500	0.76128600	0.00252000
H	-3.46972000	-0.76296200	0.00250900
Cl	0.00516400	0.00030700	-0.00059800
C	1.65645400	-0.00006000	0.00043700
N	2.84712500	-0.00032400	0.00050900

---

**NCCI•••SH<sub>2</sub>**

---

H	2.96758200	-0.97659300	0.81785000
H	2.96820700	0.97397500	0.82034200
Cl	-0.68100800	0.00041700	-0.02785100
S	2.76908000	-0.00003000	-0.09292300
C	-2.33319400	-0.00010400	0.00942000
N	-3.52353800	-0.00048100	0.03793200

---

**NCCI•••NH<sub>3</sub>**

---

N	2.93064600	-0.00013600	-0.00007800
H	3.32636100	0.63261100	0.69614300
H	3.32420000	0.28543800	-0.89743500
H	3.32250400	-0.92105700	0.20001800
Cl	-0.02129600	0.00044700	0.00021300
C	-1.67612500	-0.00005800	-0.00005400
N	-2.86697400	-0.00047000	-0.00021000

---

**NCCI•••NCH**

---

C	-0.00388900	-3.67527600	0.00000000
H	-0.00361800	-4.75296700	0.00000000
N	-0.00413000	-2.49358500	0.00000000
Cl	0.00000000	0.48192600	0.00000000
C	0.00300000	2.13320200	0.00000000
N	0.00540800	3.32396600	0.00000000

---

**NCCI•••CO**

---

C	0.05395700	2.68821700	0.00000000
O	0.07443300	3.83724600	0.00000000
Cl	0.00000000	-0.56806600	0.00000000
C	-0.05037300	-2.21844400	0.00000000
N	-0.08813900	-3.40849800	0.00000000

---

**NCCI•••OCH<sub>2</sub>**

---

O	-2.39078300	-0.51298300	-0.00028100
C	-2.95917900	0.57272100	-0.00004200
H	-2.38956600	1.52660800	0.00113500
H	-4.06618700	0.64721500	-0.00081800
Cl	0.47230200	-0.25654100	0.00028800
C	2.08927800	0.08461200	0.00002800
N	3.25318400	0.33532000	-0.00041200

---

---

**NCCI•••C<sub>2</sub>H<sub>4</sub>**

---

C	2.76897300	-0.67527600	0.00046100
H	2.77407100	-1.24328900	-0.93361000
H	2.77281900	-1.24325500	0.93455700
C	2.76885200	0.67539000	0.00043800
H	2.77259300	1.24340000	0.93451600
H	2.77384400	1.24337600	-0.93364900
Cl	-0.48318900	-0.00012400	-0.00104300
C	-2.13625400	0.00020600	0.00051100
N	-3.32693500	-0.00000600	0.00106600

---

---

**NCCI•••OHCH<sub>3</sub>**

---

O	2.22461200	-0.59056500	-0.07434000
H	2.80096600	-1.22909000	0.36560100
C	2.84330100	0.70544900	0.01423900
H	2.17533500	1.40141400	-0.50927500
H	2.95199200	1.03377100	1.06083400
H	3.82767700	0.71899100	-0.48030000
Cl	-0.58342600	-0.26284200	0.00203400
C	-2.19689200	0.09374100	0.00259500
N	-3.35901100	0.35323100	0.00318300

---

---

**NCCI•••FH**

---

Cl	-0.01210600	0.00292500	0.00000000
F	2.92178000	-0.00340100	0.00000000
H	3.84696100	0.00579500	-0.00000100
C	-1.66180100	-0.00046300	0.00000000
N	-2.85233900	-0.00316200	0.00000000

---

---

**NCCI•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	1.87553400	0.00000000	-0.46715500
C	2.27981100	1.17475100	0.23701800
H	1.94053500	2.03705700	-0.35187300
H	1.82076800	1.21013600	1.24284100
H	3.37901000	1.21133000	0.34365900
Cl	-0.91083600	-0.00000500	-0.23740500
C	-2.53629300	-0.00000100	0.06856300

---

N	-3.70582100	0.00000500	0.29260400
C	2.27982000	-1.17474500	0.23702200
H	1.94054800	-2.03705500	-0.35186500
H	3.37901900	-1.21131700	0.34366000
H	1.82078000	-1.21012900	1.24284600

### 29. Bromine Bonded Complexes

<b>FBr...OH<sub>2</sub></b>			
F	1.99052100	-0.00000700	0.03938200
O	-2.34726100	-0.00000300	-0.08350000
H	-2.67948600	0.76540900	0.40760800
H	-2.67946900	-0.76543200	0.40759300
Br	0.17778100	0.00000300	-0.01433300

<b>FBr...SH<sub>2</sub></b>			
F	2.38721500	-0.00001400	0.03968000
H	-2.39821200	0.97718300	0.82864000
H	-2.39816400	-0.97724300	0.82858300
Br	0.55411700	0.00000600	-0.01445100
S	-2.25516700	-0.00000200	-0.09428500

<b>FBr...NH<sub>3</sub></b>			
F	-1.94466300	0.10488000	0.45696700
Br	-0.13653600	0.00735600	0.03208800
N	2.12371400	-0.11451800	-0.49905200
H	2.25372500	-0.12124900	-1.51048700
H	2.53596200	-0.96505900	-0.11619300
H	2.62502700	0.68654600	-0.11573600

<b>FBr...NCH</b>			
F	-2.03316100	-0.41175500	1.00672000
Br	-0.43302000	-0.08766400	0.21442500
N	1.80189900	0.36491700	-0.89221300
C	2.84147100	0.57532500	-1.40703300

---

H	3.79204400	0.76767600	-1.87768400
---	------------	------------	-------------

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---

**FBr...OCH<sub>2</sub>**

---

F	-2.24787500	0.31418900	-0.00000300
O	1.93916200	-0.52772400	-0.00000100
C	2.60523500	0.50671300	0.00000000
H	2.11949300	1.50210700	0.00000900
H	3.71051000	0.46136200	-0.00001000
Br	-0.47839500	-0.10313300	0.00000100

---

---

**FBr...C<sub>2</sub>H<sub>4</sub>**

---

C	2.11984800	0.68319200	0.00000400
H	2.14587900	1.24663100	0.93562400
H	2.14592300	1.24663500	-0.93561300
C	2.11984800	-0.68319200	0.00000300
H	2.14592300	-1.24663500	-0.93561300
H	2.14587900	-1.24663100	0.93562300
F	-2.24500200	0.00000000	0.00003500
Br	-0.39476500	0.00000000	-0.00001100

---

---

**FBr...OHCH<sub>3</sub>**

---

F	-2.31642900	0.33882900	0.04888000
O	1.80221800	-0.61503500	-0.08989100
H	1.98451600	-1.15804500	0.69190000
C	2.55940900	0.61539900	0.02371900
H	2.32472700	1.19450400	-0.87674500
H	2.25609500	1.18477200	0.91523100
H	3.63719900	0.39826500	0.05418900
Br	-0.54653900	-0.09831600	-0.01850500

---

---

**FBr...O(CH<sub>3</sub>)<sub>2</sub>**

---

F	2.58512200	0.00000100	0.23043800
---	------------	------------	------------

---

---

O	-1.53315300	0.00000000	-0.42088500
C	-2.08235400	-1.18801000	0.18130700
H	-1.61293700	-2.04155200	-0.32209800
H	-1.85120900	-1.21267600	1.25985300
H	-3.17368300	-1.20812500	0.02775300
Br	0.77893900	-0.00000200	-0.08038700
C	-2.08233800	1.18801800	0.18130500
H	-1.61292600	2.04155300	-0.32211600
H	-3.17366900	1.20813700	0.02776900
H	-1.85117500	1.21269300	1.25984700

---

---

**FBr...FH**

---

Br	0.00000000	0.21507900	0.00000000
H	0.48225900	-3.00864000	0.00000000
F	0.23902700	1.99741100	0.00000000
F	-0.29261100	-2.49953600	0.00000000

---

---

**FBr...CO**

---

F	0.00000000	0.00000000	2.31575000
Br	0.00000000	0.00000000	0.50397500
C	0.00000000	0.00000000	-2.09309400
O	0.00000000	0.00000000	-3.24028800

---

---

**ClBr...OH<sub>2</sub>**

---

O	-2.86180900	-0.00002400	-0.06565000
H	-3.22691200	0.76351300	0.40290200
H	-3.22662500	-0.76382000	0.40270500
Br	-0.15364200	0.00003100	-0.02171500
Cl	2.04267600	-0.00003400	0.02821300

---

---

**ClBr...SH<sub>2</sub>**

---

H	-2.86928100	0.97620200	0.84869700
---	-------------	------------	------------

---



H	-2.86927400	-0.97617700	0.84872100
Br	0.24120400	0.00000000	-0.02905400
S	-2.77830600	-0.00000200	-0.08104100
Cl	2.45584100	0.00000000	0.03624300

---

**ClBr...NH<sub>3</sub>**

---

Br	0.20459400	0.00000300	0.00000200
N	2.66131400	-0.00000300	0.00000000
H	3.02506700	-0.82137500	0.48297500
H	3.02509100	0.82895500	0.46981600
H	3.02505400	-0.00760600	-0.95282400
Cl	-2.05089300	-0.00000300	-0.00000200

---

**ClBr...NCH**

---

Br	0.00000000	0.00000000	-0.15631200
N	0.00000000	0.00000000	2.58175300
C	0.00000000	0.00000000	3.76248600
H	0.00000000	0.00000000	4.84045700
Cl	0.00000000	0.00000000	-2.35392400

---

**ClBr...OCH<sub>2</sub>**

---

O	-2.46879400	-0.47128000	-0.00006000
C	-3.01652200	0.62817200	0.00003900
H	-2.42506500	1.56649600	0.00013900
H	-4.12119600	0.71402500	0.00003400
Br	0.14821500	-0.18613600	-0.00001400
Cl	2.30636600	0.24914400	0.00003200

---

**ClBr...C<sub>2</sub>H<sub>4</sub>**

---

C	0.00000000	-2.65552300	0.67957800
H	-0.93538500	-2.66685900	1.24486600
H	0.93538500	-2.66686600	1.24486600

---

---

C	0.00000000	-2.65552300	-0.67957800
H	0.93538500	-2.66686600	-1.24486600
H	-0.93538500	-2.66685900	-1.24486600
Br	0.00000000	0.08911700	0.00000000
Cl	0.00000000	2.31850700	0.00000000

---

---

**ClBr•••OHCH<sub>3</sub>**

---

O	2.32771400	-0.56983900	-0.06780900
H	2.57087300	-1.07142600	0.72390200
C	2.94064800	0.73580100	0.02038200
H	2.64488900	1.26974600	-0.89060600
H	2.57601300	1.29036400	0.89923000
H	4.03769800	0.65224600	0.05445300
Br	-0.21749000	-0.18073600	-0.02656300
Cl	-2.38134900	0.25463100	0.03311300

---

---

**ClBr•••O(CH<sub>3</sub>)<sub>2</sub>**

---

O	-2.00018800	-0.00000200	-0.41264200
C	-2.49054300	-1.18317600	0.23706000
H	-2.06636300	-2.03968400	-0.30145300
H	-2.16663700	-1.20768800	1.29246600
H	-3.59233000	-1.21373800	0.18564500
Br	0.46613800	-0.00001200	-0.14605400
C	-2.49046100	1.18321500	0.23704500
H	-2.06619800	2.03968700	-0.30146100
H	-3.59224400	1.21386500	0.18560500
H	-2.16657500	1.20770400	1.29245800
Cl	2.66017800	0.00000300	0.18912600

---

---

**ClBr...FH**

---

Br	0.00000000	0.12834700	0.00000000
H	1.43486100	3.30259000	0.00000000
F	0.57804900	2.95068300	0.00000000
Cl	-0.39043000	-2.02063900	0.00000000

---

---

**ClBr...CO**

---

Br	0.00000000	0.00000000	0.20187000
C	0.00000000	0.00000000	-2.75249100
O	0.00000000	0.00000000	-3.90106200
Cl	0.00000000	0.00000000	2.39164700

---

---

**BrBr...OH<sub>2</sub>**

---

O	3.43584500	0.00001300	-0.05450900
H	3.80278500	-0.76311900	0.41288200
H	3.80276700	0.76318100	0.41283800
Br	0.66743400	-0.00001100	-0.02802100
Br	-1.67007100	0.00000600	0.01688800

---

---

**BrBr...SH<sub>2</sub>**

---

H	-3.46351500	0.97582200	0.86135100
H	-3.46351300	-0.97583300	0.86134000
Br	-0.30164300	0.00000100	-0.04079700
S	-3.39569600	-0.00000100	-0.07045300
Br	2.05187600	-0.00000100	0.02378400

---

---

**BrBr...NH<sub>3</sub>**

---

Br	0.71728700	0.00000400	0.00000200
N	3.23339000	-0.00000600	-0.00000100
H	3.60029700	-0.81825600	0.48597800
H	3.60032800	0.82999100	0.46560900
H	3.60027700	-0.01177300	-0.95162300

---

---

Br	-1.67256200	-0.00000200	-0.00000100
----	-------------	-------------	-------------

---

---

**BrBr•••NCH**

---

Br	0.00000000	0.00000000	-0.39770700
N	0.00000000	0.00000000	-3.18994000
C	0.00000000	0.00000000	-4.37110900
H	0.00000000	0.00000000	-5.44899300
Br	0.00000000	0.00000000	1.94071300

---

---

**BrBr•••OCH<sub>2</sub>**

---

O	-3.07939100	-0.42054800	-0.00000100
C	-3.54276700	0.71635700	-0.00000700
H	-2.88210600	1.60781400	-0.00001400
H	-4.63798000	0.88775500	-0.00000600
Br	-0.39055800	-0.25004100	0.00000100
Br	1.91661000	0.15206000	0.00000100

---

---

**BrBr•••C<sub>2</sub>H<sub>4</sub>**

---

C	0.00000000	-3.25392500	0.67877800
H	-0.93526100	-3.26257100	1.24445800
H	0.93526100	-3.26257200	1.24445800
C	0.00000000	-3.25392500	-0.67877800
H	0.93526100	-3.26257200	-1.24445800
H	-0.93526100	-3.26257100	-1.24445800
Br	0.00000000	-0.43893600	0.00000000
Br	0.00000000	1.92743300	0.00000000

---

---

**BrBr•••OHCH<sub>3</sub>**

---

O	2.94299300	-0.52962800	-0.05287100
H	3.20821000	-0.99815400	0.75155700
C	3.46525300	0.81436900	0.01800200
H	3.14629700	1.31157300	-0.90604900

---

H	3.05288400	1.36025700	0.88136700
H	4.56523500	0.80881300	0.06670300
Br	0.32398800	-0.24033100	-0.03256800
Br	-1.98993300	0.15085400	0.01889300

---

**BrBr...O(CH<sub>3</sub>)<sub>2</sub>**

---

O	-2.60281700	-0.00001000	-0.39907100
C	-3.05300900	-1.18133000	0.27869800
H	-2.66061400	-2.03884500	-0.28219800
H	-2.66789600	-1.20559100	1.31367600
H	-4.15622400	-1.21533000	0.29399800
Br	-0.07639900	-0.00000800	-0.19792600
C	-3.05285500	1.18138300	0.27867900
H	-2.66030000	2.03883600	-0.28219900
H	-4.15606600	1.21555800	0.29393100
H	-2.66778400	1.20558500	1.31367400
Br	2.26001600	-0.00000500	0.11785200

---

**BrBr...FH**

---

Br	0.00000000	0.64477900	0.00000000
H	0.91805800	4.08506000	0.00000000
Br	-0.06297800	-1.68167700	0.00000000
F	0.14290700	3.57848800	0.00000000

---

**BrBr...CO**

---

Br	0.00000000	0.00000000	-0.35580800
C	0.00000000	0.00000000	-3.39401600
O	0.00000000	0.00000000	-4.54293400
Br	0.00000000	0.00000000	1.97602400

30. Iodine Bonded Complexes

---

**FI...OH<sub>2</sub>**

---

F	-2.09645600	-0.00000400	0.04437200
O	2.48034700	0.00000000	-0.07434400
H	2.84236200	-0.76672700	0.39367900
H	2.84240700	0.76669200	0.39370000
I	-0.12565000	0.00000100	-0.01116900

---

**FI••SH<sub>2</sub>**

---

F	-2.43008300	-0.00000100	0.04319000
S	2.51365100	-0.00000100	-0.09277600
H	2.67611400	-0.97741200	0.82699800
H	2.67610700	0.97742600	0.82698500
I	-0.44716800	0.00000000	-0.01053400

---

**FI••NH<sub>3</sub>**

---

F	-0.15699200	-0.87336200	1.91815600
N	0.17575000	0.97790400	-2.14770600
H	-0.68240500	0.84323300	-2.68284000
H	0.94299000	0.56338300	-2.67727900
H	0.34826300	1.98121800	-2.08036800
I	-0.00804100	-0.04477200	0.09832100

---

**FI••NCH**

---

F	0.00000000	0.00000000	-2.33884400
N	0.00000000	0.00000000	2.20778100
C	0.00000000	0.00000000	3.38585700
H	0.00000000	0.00000000	4.46400500
I	0.00000000	0.00000000	-0.36196300

---

**FI••OCH<sub>2</sub>**

---

F	2.30325000	0.34709100	0.00000200
O	-2.14056500	-0.49343700	-0.00000500
C	-2.85175400	0.51184100	0.00000800

---

---

H	-2.40946100	1.52664300	0.00001900
H	-3.95276400	0.41449700	0.00000700
I	0.37486800	-0.07902800	-0.00000100

---

---

**FI•••C<sub>2</sub>H<sub>4</sub>**

---

C	0.00000000	-2.31783200	0.68484200
H	-0.93582900	-2.35491400	1.24750100
H	0.93582900	-2.35491500	1.24750100
C	0.00000000	-2.31783200	-0.68484200
H	0.93582900	-2.35491500	-1.24750100
H	-0.93582900	-2.35491400	-1.24750100
F	0.00000000	2.31047200	0.00000000
I	0.00000000	0.31017700	0.00000000

---

---

**FI•••OHCH<sub>3</sub>**

---

F	-2.36391800	0.36683800	0.05504300
O	2.01953300	-0.58514200	-0.08164500
H	2.23061200	-1.15956400	0.67008700
C	2.81872200	0.62182500	0.02485600
H	2.55948700	1.22832400	-0.85034500
H	2.57269000	1.17570300	0.94299400
H	3.88839700	0.36922500	-0.00055400
I	-0.43480200	-0.07481200	-0.01421800

---

---

**FI•••C<sub>2</sub>H<sub>2</sub>**

---

C	-2.55204100	-0.61844700	0.00000700
C	-2.55206300	0.61844200	-0.00000400
F	2.26580500	0.00000200	-0.00000100
H	-2.60695300	-1.69419600	-0.00000300
H	-2.60698200	1.69419100	0.00000700

---

---

I	0.29144000	0.00000000	0.00000000
---	------------	------------	------------

---

---

**FI•••O(CH<sub>3</sub>)<sub>2</sub>**

---

F	2.61050700	-0.00000600	0.24640800
O	-1.78661800	0.00000200	-0.38845300
C	-2.37341600	-1.18942600	0.17924200
H	-1.88383200	-2.04328200	-0.30384300
H	-2.19771600	-1.21990200	1.26783900
H	-3.45489000	-1.20016500	-0.03153200
C	-2.37346200	1.18940300	0.17924800
H	-1.88386400	2.04328200	-0.30378300
H	-3.45492500	1.20013300	-0.03158200
H	-2.19781900	1.21985000	1.26785500
I	0.64816400	0.00000500	-0.05898000

---

---

**FI•••FH**

---

F	2.10860800	0.06324700	0.00000400
I	0.15433700	-0.01586100	-0.00000100
F	-2.66976800	-0.05345100	0.00000300
H	-3.12943900	0.75248400	-0.00000400

---

---

**CIH•••OH<sub>2</sub>**

---

Cl	-2.23440500	-0.00000900	0.03054500
O	2.88473000	-0.00000800	-0.05672700
H	3.26329200	-0.76546800	0.39926300
H	3.26335100	0.76539500	0.39930800
I	0.15812100	0.00000500	-0.01630200

---

---

**CIH•••SH<sub>2</sub>**

---

Cl	-2.57792100	-0.00000300	0.03998500
S	2.92193400	-0.00002100	-0.07712200

---



---

H	3.03724900	-0.97672000	0.85011600
H	3.03714600	0.97703700	0.84976000
I	-0.16982400	0.00000100	-0.02161700

---

---

**ClH...NH<sub>3</sub>**

---

Cl	-2.25570200	-0.00001100	0.00001500
N	2.72863600	-0.00001300	0.00002400
H	3.09505600	-0.45480800	-0.83669400
H	3.09506000	-0.49726900	0.81222500
H	3.09513600	0.95197200	0.02453700
I	0.18794800	0.00000700	-0.00000900

---

---

**ClH...NCH**

---

Cl	0.00000000	0.00000000	-2.47524900
N	0.00000000	0.00000000	2.63263600
C	0.00000000	0.00000000	3.81213600
H	0.00000000	0.00000000	4.89030600
I	0.00000000	0.00000000	-0.07759100

---

---

**ClH...OCH<sub>2</sub>**

---

Cl	2.45029700	0.27720000	0.00000500
O	-2.55447200	-0.41681300	0.00000300
C	-3.17286900	0.64664300	0.00000200
H	-2.64269300	1.61965400	-0.00004000
H	-4.27937100	0.65443400	0.00004300
I	0.08943400	-0.14211000	-0.00000200

---

---

**ClH...C<sub>2</sub>H<sub>4</sub>**

---

C	0.00000000	-2.74041400	0.68182100
H	-0.93576600	-2.76145200	1.24619600
H	0.93576600	-2.76145600	1.24619700

---

---

C	0.00000000	-2.74041400	-0.68182100
H	0.93576600	-2.76145600	-1.24619700
H	-0.93576600	-2.76145200	-1.24619600
Cl	0.00000000	2.46547900	0.00000000
I	0.00000000	0.03806900	0.00000000

---

---

**ClI...OHCH<sub>3</sub>**

---

Cl	-2.51585100	0.28327000	0.03644300
O	2.42303800	-0.51842500	-0.05888500
H	2.67477100	-1.05502400	0.70779700
C	3.12116200	0.74890700	0.02329800
H	2.81800300	1.31552800	-0.86484700
H	2.82940600	1.30351800	0.92810500
H	4.20922700	0.58913600	0.00559700
I	-0.14855100	-0.13801500	-0.02009200

---

---

**ClI...FH**

---

Cl	2.24747400	0.04202900	-0.00058900
I	-0.12739000	-0.02183600	0.00034300
F	-3.09320300	-0.03222600	-0.00098600
H	-3.61657800	0.73283800	0.00072500

---

---

**ClI...O(CH<sub>3</sub>)<sub>2</sub>**

---

Cl	2.76347600	0.00000200	0.20233700
O	-2.14875700	-0.00000100	-0.36398800
C	-2.69909400	-1.18723600	0.23788900
H	-2.23485200	-2.04237500	-0.26819900
H	-2.46460000	-1.21583400	1.31592200
H	-3.79139900	-1.20597500	0.08980300
C	-2.69908000	1.18724500	0.23788000
H	-2.23482600	2.04237400	-0.26821600
H	-3.79138400	1.20599700	0.08979300
H	-2.46458600	1.21584900	1.31591200

---

---

I	0.36946500	-0.00000200	-0.10674400
---	------------	-------------	-------------

---

---

**ClI•••C<sub>2</sub>H<sub>2</sub>**

---

C	-2.98701700	-0.61769200	0.00000500
C	-2.98701700	0.61769200	-0.00000100
Cl	2.41188800	0.00000000	-0.00000200
H	-3.02006600	-1.69405000	-0.00000200
H	-3.02006500	1.69405000	0.00000600
I	0.01664600	0.00000000	0.00000000

---

---

**BrI•••OH<sub>2</sub>**

---

Br	-1.92250200	0.00000500	0.01822300
O	3.39641800	0.00000900	-0.04397200
H	3.77762100	-0.76479000	0.41047600
H	3.77755100	0.76487700	0.41042000
I	0.61435900	-0.00000600	-0.02088500

---

---

**BrI•••SH<sub>2</sub>**

---

Br	-2.24598900	0.00001200	0.02649500
S	3.45596800	0.00000700	-0.06443900
H	3.54948800	-0.97642600	0.86528900
H	3.54931000	0.97668900	0.86504900
I	0.30595000	-0.00001500	-0.03069100

---

---

**BrI•••NH<sub>3</sub>**

---

Br	-1.58358100	-0.59529300	0.94560400
N	2.63603500	0.99092700	-1.57405300
H	3.21100200	0.19882600	-1.86242700
H	3.20998500	1.59504100	-0.98515800
H	2.38719600	1.51726700	-2.41203700
I	0.53141400	0.19976700	-0.31732300

---

---

**BrI...NCH**

---

Br	0.00000000	0.00000000	-2.14108500
N	0.00000000	0.00000000	3.17097300
C	0.00000000	0.00000000	4.35103100
H	0.00000000	0.00000000	5.42916300
I	0.00000000	0.00000000	0.40011000

---

---

**BrI...OCH<sub>2</sub>**

---

Br	2.13240800	0.17093200	0.00000700
O	-3.08769600	-0.35275400	0.00001400
C	-3.63707600	0.74723800	0.00000500
H	-3.04617700	1.68512900	-0.00012700
H	-4.74119700	0.82806500	0.00013200
I	-0.38345100	-0.19164600	-0.00000800

---

---

**BrI...C<sub>2</sub>H<sub>4</sub>**

---

C	0.00000100	3.26708400	0.68080800
H	0.93568100	3.28348200	1.24565300
H	-0.93567900	3.28349000	1.24565300
C	0.00000100	3.26708400	-0.68080800
H	-0.93567900	3.28349000	-1.24565300
H	0.93568100	3.28348200	-1.24565300
Br	0.00000100	-2.14231500	0.00000000
I	-0.00000100	0.42720900	0.00000000

---

---

**BrI...OHCH<sub>3</sub>**

---

Br	-2.19635600	0.17170700	0.02060400
O	2.95748900	-0.46481700	-0.04331700
H	3.23094200	-0.97034900	0.73666000
C	3.57861200	0.84147600	0.02177300
H	3.25115800	1.37433600	-0.87873400
H	3.24649500	1.39517300	0.91340300

---

H	4.67485300	0.74897000	0.01617500
I	0.32712200	-0.18656900	-0.02439200

---

**BrI...FH**

---

Br	-1.93470500	0.02375400	0.00012400
I	0.58642500	-0.02627600	-0.00015100
F	3.60842100	-0.01845500	0.00044500
H	4.15835600	0.72734500	-0.00032900

---

**BrI...O(CH<sub>3</sub>)<sub>2</sub>**

---

Br	2.43519600	-0.00000200	0.12919300
O	-2.66976800	0.00000000	-0.34148300
C	-3.18911400	-1.18596900	0.28656800
H	-2.74737600	-2.04159700	-0.23876900
H	-2.90489400	-1.21339800	1.35284200
H	-4.28749500	-1.20898100	0.19084900
C	-3.18914400	1.18595000	0.28657700
H	-2.74743600	2.04159400	-0.23876000
H	-4.28752700	1.20893000	0.19086700
H	-2.90491600	1.21338200	1.35284900
I	-0.10801000	0.00000500	-0.14789900

---

**BrI...C<sub>2</sub>H<sub>2</sub>**

---

C	-3.51240200	-0.61745500	0.00000400
C	-3.51240200	0.61745500	0.00000000
Br	2.08888200	0.00000000	-0.00000100
H	-3.53918900	-1.69383800	-0.00000200
H	-3.53918800	1.69383800	0.00000600
I	-0.45063500	0.00000000	0.00000000

---

---

**FAt•••OH<sub>2</sub>**

---

F	-2.13943100	-0.00002700	0.04624700
O	2.54225200	-0.00000700	-0.06804700
H	2.92799400	-0.76718500	0.37953600
H	2.92818400	0.76702000	0.37963100
At	-0.08163900	0.00000500	-0.00742400

---

---

**FAt•••SH<sub>2</sub>**

---

F	-2.38604300	0.00000500	0.04431000
S	2.66623600	0.00000000	-0.09202600
H	2.85079800	-0.97757800	0.82363100
H	2.85077900	0.97760800	0.82360300
At	-0.31631700	-0.00000100	-0.00674800

---

---

**FAt•••NH<sub>3</sub>**

---

F	-2.16319100	-0.00002200	-0.00000100
N	2.46365600	-0.00001400	-0.00000100
H	2.83485000	0.47058200	0.82567900
H	2.83486000	0.47973200	-0.82039500
H	2.83479500	-0.95039200	-0.00528200
At	-0.07389900	0.00000400	0.00000000

---

---

**FAt•••NCH**

---

F	0.00000000	0.00000000	2.31325300
N	0.00000000	0.00000000	-2.31848600
C	0.00000000	0.00000000	-3.49593500
H	0.00000000	0.00000000	-4.57413600
At	0.00000000	0.00000000	0.24658700

---

---

**FAt•••OCH<sub>2</sub>**

---

F	2.28244500	0.37264500	-0.00000300
O	-2.27712900	-0.46557900	0.00000500

---

C	-3.02438400	0.51360300	-0.00000300
H	-2.61932900	1.54356900	-0.00001500
H	-4.12060200	0.37483200	0.00000400
At	0.26542700	-0.05446100	0.00000000

---

**FAt•••C<sub>2</sub>H<sub>4</sub>**

---

C	0.00000000	-2.41723500	0.68704800
H	-0.93616300	-2.46783200	1.24810300
H	0.93616300	-2.46783600	1.24810300
C	0.00000000	-2.41723500	-0.68704800
H	0.93616300	-2.46783600	-1.24810300
H	-0.93616300	-2.46783200	-1.24810300
F	-0.00000100	2.30356300	0.00000000
At	0.00000000	0.21348300	0.00000000

---

**FAt•••OHCH<sub>3</sub>**

---

F	-2.32713600	0.39914500	0.05755100
O	2.18134200	-0.56263000	-0.07612700
H	2.41713900	-1.15818500	0.65107100
C	2.99994100	0.63261200	0.02508900
H	2.72178100	1.25657900	-0.83183000
H	2.78904500	1.17331100	0.95958600
H	4.06451500	0.36601900	-0.03772600
At	-0.31174900	-0.05323100	-0.00941800

---

**FAt•••C<sub>2</sub>H<sub>2</sub>**

---

C	-2.61574700	-0.61935500	0.00001000
C	-2.61574700	0.61935500	-0.00000700
F	2.25826800	0.00000000	-0.00000100
H	-2.70014600	-1.69358700	-0.00000400
H	-2.70014400	1.69358700	0.00000800
At	0.19370400	0.00000000	0.00000000

---

---

**FAt•••O(CH<sub>3</sub>)<sub>2</sub>**

---

F	2.53112500	0.00000600	0.26662500
O	-2.00070200	0.00000000	-0.36800800
C	-2.60546900	-1.18958700	0.18134900
H	-2.10746700	-2.04376500	-0.29253800
H	-2.45621600	-1.22384200	1.27380500
H	-3.68149700	-1.19593300	-0.05562700
C	-2.60545800	1.18959500	0.18134600
H	-2.10744000	2.04376700	-0.29253500
H	-3.68148300	1.19595600	-0.05564000
H	-2.45621400	1.22384700	1.27380300
At	0.48213400	-0.00000200	-0.04097600

---

---

**FAt•••FH**

---

F	-2.13713200	0.06487300	0.00000400
F	2.69685100	-0.04964500	0.00000400
H	3.17632500	0.74535300	-0.00000200
At	-0.09663300	-0.01038100	-0.00000100

---

---

**ClAt•••OH<sub>2</sub>**

---

Cl	-2.35858100	-0.00002300	0.03189700
O	2.82246800	-0.00002400	-0.04976600
H	3.21572600	-0.76649200	0.39234500
H	3.21587500	0.76630200	0.39245800
At	0.13040600	0.00000900	-0.01092800

---

---

**ClAt•••SH<sub>2</sub>**

---

Cl	-2.61190400	-0.00000400	0.04119600
S	2.95175700	-0.00000500	-0.07512400
H	3.09634100	-0.97731600	0.84785000
H	3.09639300	0.97732100	0.84784500
At	-0.10610000	0.00000200	-0.01404700

---



---

**ClAt...NH<sub>3</sub>**

---

Cl	-2.38885400	0.00000300	0.00000100
N	2.71764500	0.00000300	0.00000200
H	3.08785200	0.46988300	0.82675900
H	3.08785400	0.48106800	-0.82029600
H	3.08787900	-0.95091800	-0.00645600
At	0.14498100	-0.00000100	0.00000000

---

---

**ClAt...NCH**

---

Cl	0.00000000	0.00000000	-2.53066000
N	0.00000000	0.00000000	2.60718800
C	0.00000000	0.00000000	3.78558700
H	0.00000000	0.00000000	4.86388200
At	0.00000000	0.00000000	-0.03301800

---

---

**ClAt...OCH<sub>2</sub>**

---

Cl	2.51285400	0.30325100	-0.00000600
O	-2.57207800	-0.37072100	0.00000700
C	-3.23999900	0.66349500	0.00000000
H	-2.75578900	1.65944100	-0.00000600
H	-4.34469600	0.61550600	0.00000000
At	0.05174800	-0.09935800	0.00000100

---

---

**ClAt...C<sub>2</sub>H<sub>4</sub>**

---

C	0.00000000	-2.70748700	0.68484300
H	-0.93629100	-2.74431000	1.24732800
H	0.93629000	-2.74431200	1.24732800
C	0.00000000	-2.70748700	-0.68484300
H	0.93629000	-2.74431200	-1.24732800
H	-0.93629100	-2.74431000	-1.24732800
Cl	0.00000000	2.53504700	0.00000000
At	0.00000000	0.00436800	0.00000000

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---

**ClAt...OHCH<sub>3</sub>**

---

Cl	-2.56167400	0.31947200	0.03823800
O	2.47130800	-0.47450200	-0.05222600
H	2.74203100	-1.03195300	0.69292000
C	3.20115400	0.77747300	0.02432700
H	2.88402500	1.36094300	-0.84771800
H	2.94786000	1.32454400	0.94480300
H	4.28331200	0.59019300	-0.02823200
At	-0.09748400	-0.10051200	-0.01341100

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---

**ClAt...C<sub>2</sub>H<sub>2</sub>**

---

C	-2.92478100	-0.61863600	0.00000800
C	-2.92478100	0.61863600	-0.00000400
Cl	2.48262400	0.00000000	-0.00000100
H	-2.98512000	-1.69434200	-0.00000300
H	-2.98512000	1.69434200	0.00000700
At	-0.01337700	0.00000000	0.00000000

---

---

**ClAt...O(CH<sub>3</sub>)<sub>2</sub>**

---

Cl	2.76008900	0.00001200	0.22663300
O	-2.26179900	-0.00000100	-0.33103300
C	-2.83647600	-1.18857400	0.24912000
H	-2.36032500	-2.04340500	-0.24609500
H	-2.63525400	-1.22110000	1.33354100
H	-3.92318600	-1.20002600	0.06575300
C	-2.83638800	1.18862600	0.24910000
H	-2.36014300	2.04341300	-0.24609900
H	-3.92309100	1.20017600	0.06569700
H	-2.63519800	1.22113500	1.33352700
At	0.27114400	-0.00000800	-0.07647200

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---

**ClAt...FH**

---

Cl	-2.35799900	0.04378600	0.00000200
F	3.01252300	-0.02658300	0.00000400
H	3.53602300	0.73928100	-0.00000300
At	0.11102700	-0.01464000	-0.00000100

---

---

**BrAt...OH<sub>2</sub>**

---

Br	-2.13962600	-0.00000300	0.01895200
O	3.22374200	-0.00000900	-0.03633400
H	3.61704600	-0.76593200	0.40641500
H	3.61706000	0.76589300	0.40644000
At	0.49250400	0.00000300	-0.01394700

---

---

**BrAt...SH<sub>2</sub>**

---

Br	2.38332300	-0.00000600	0.02776100
S	-3.36699400	-0.00000300	-0.06063600
H	-3.49069100	0.97696800	0.86552800
H	-3.49067000	-0.97708400	0.86541600
At	-0.26544800	0.00000400	-0.02038100

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---

**BrAt...NH<sub>3</sub>**

---

Br	-0.97035800	-0.64761000	-1.82404600
N	1.39362700	0.93009800	2.61969400
H	0.82393700	1.61321000	3.11987800
H	2.29626900	1.36447000	2.42493900
H	1.55863800	0.14495400	3.25032200
At	0.22974500	0.15333000	0.43186600

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**BrAt...NCH**

---

Br	0.00000000	0.00000000	-2.30014600
N	0.00000000	0.00000000	3.02260900
C	0.00000000	0.00000000	4.20151800

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H	0.00000000	0.00000000	5.27981000
At	0.00000000	0.00000000	0.33950500

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**BrAt•••OCH<sub>2</sub>**

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Br	2.29670100	0.19081600	0.00000000
O	-2.98968500	-0.28996500	0.00000100
C	-3.59282900	0.78275600	0.00000000
H	-3.04845700	1.74754600	0.00000000
H	-4.69880000	0.80492600	0.00000000
At	-0.31956300	-0.13656300	0.00000000

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---

**BrAt•••C<sub>2</sub>H<sub>4</sub>**

---

C	0.00000000	3.12115800	0.68364000
H	0.93624800	3.15177100	1.24675100
H	-0.93624800	3.15177400	1.24675200
C	0.00000000	3.12115800	-0.68364000
H	-0.93624800	3.15177400	-1.24675200
H	0.93624800	3.15177100	-1.24675100
Br	0.00000000	-2.30960000	0.00000000
At	0.00000000	0.36205900	0.00000000

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---

**BrAt•••OHCH<sub>3</sub>**

---

Br	-2.34564900	0.19899200	0.02161300
O	2.88989000	-0.40103400	-0.03600900
H	3.18336800	-0.92694900	0.72319400
C	3.54537600	0.89118800	0.02332400
H	3.20202500	1.44076400	-0.86086400
H	3.25398900	1.43974400	0.93177300
H	4.63740100	0.76828100	-0.01843200
At	0.27564200	-0.13912200	-0.01628200

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**BrAt•••C<sub>2</sub>H<sub>2</sub>**

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C	-3.34163400	-0.61830400	0.00000700
C	-3.34163400	0.61830400	-0.00000300
Br	2.25937800	0.00000000	-0.00000100
H	-3.39234500	-1.69435700	-0.00000300
H	-3.39234500	1.69435700	0.00000700
At	-0.37875200	0.00000000	0.00000000

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**BrAt••O(CH<sub>3</sub>)<sub>2</sub>**

---

Br	2.53525900	0.00000100	0.14938700
O	-2.66828900	0.00000000	-0.29569000
C	-3.21586700	-1.18770100	0.30926300
H	-2.75892200	-2.04278400	-0.20353800
H	-2.97003500	-1.21880900	1.38467500
H	-4.30957400	-1.20317800	0.17210000
C	-3.21585200	1.18770800	0.30926000
H	-2.75889500	2.04278400	-0.20354200
H	-4.30955900	1.20320000	0.17209500
H	-2.97002200	1.21881500	1.38467200
At	-0.10259300	-0.00000100	-0.10918400

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**BrAt••FH**

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Br	-2.14133100	0.02562000	0.00000100
F	3.42737700	-0.00952200	0.00000500
H	3.97021600	0.74231500	-0.00000300
At	0.47211700	-0.01827400	-0.00000100

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