

Synthesis, coordination to Au(I) and photophysical properties of a novel polyfluorinated benzothiazolephosphine ligand

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ELECTRONIC SUPPLEMENTARY INFORMATION

Figure S1. Control of the reaction between C_6F_5NCS and PPh_2H through $^{31}P\{^1H\}$, ^{19}F and 1H NMR.

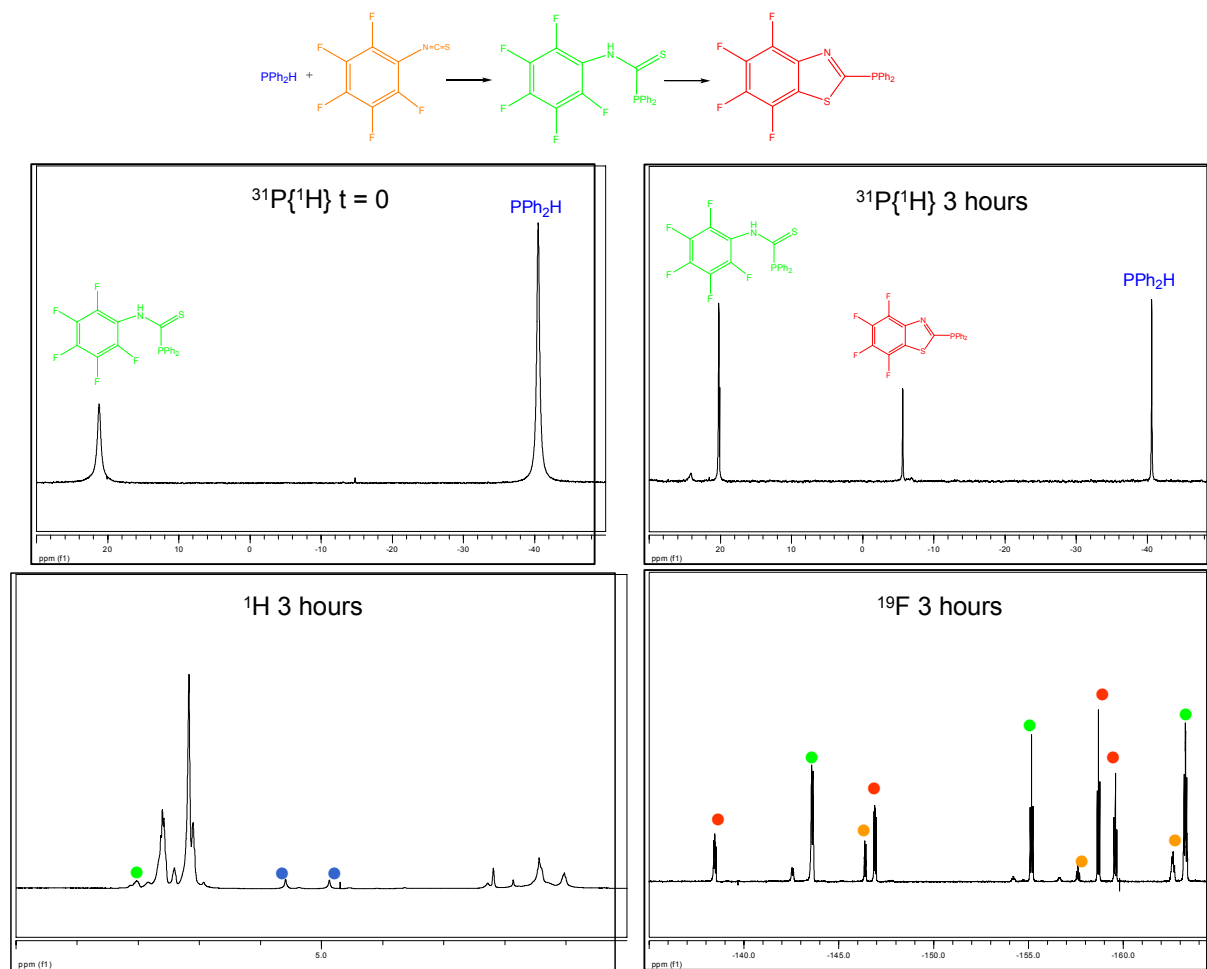


Figure S2. First few theoretical singlet excitations for model **1a** displaying the energy (nm) and oscillator strength

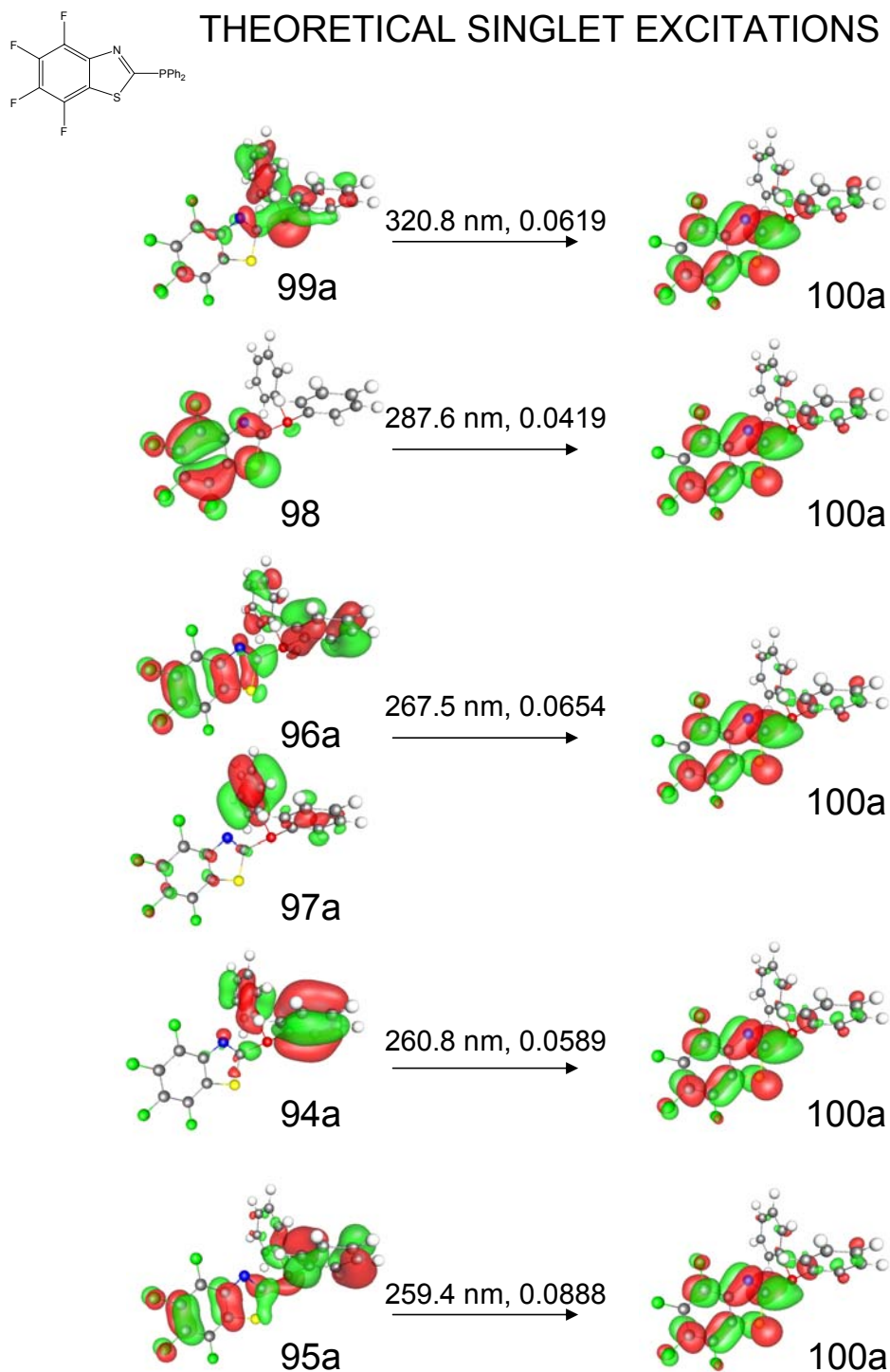


Figure S3. First few theoretical singlet excitations for model **3a** displaying the energy (nm) and oscillator strength

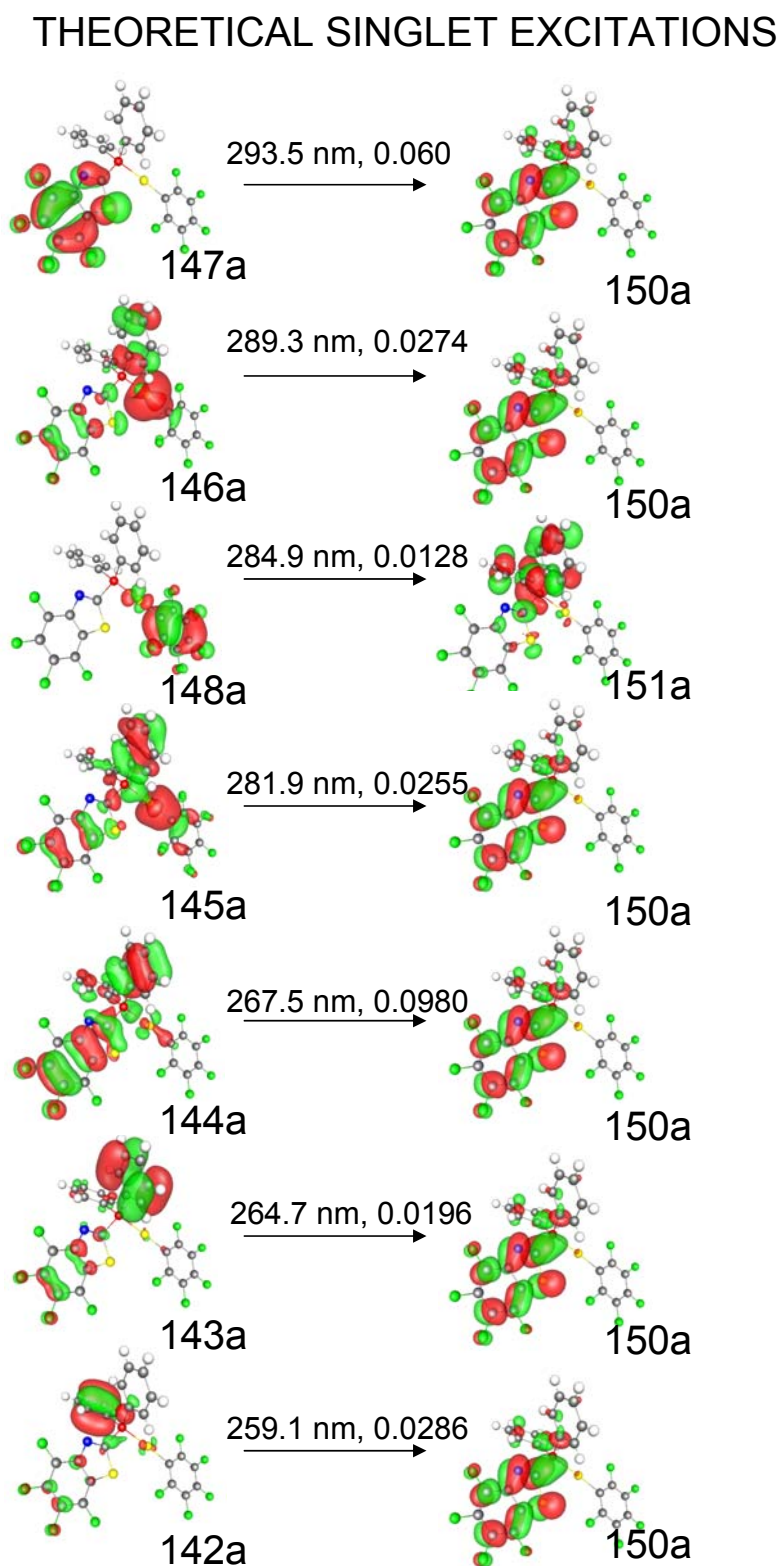
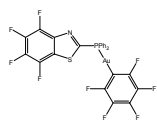


Figure S4. First theoretical triplet excitations for models **1a** and **3a** displaying the energy (nm).

THEORETICAL TRIPLET EXCITATIONS

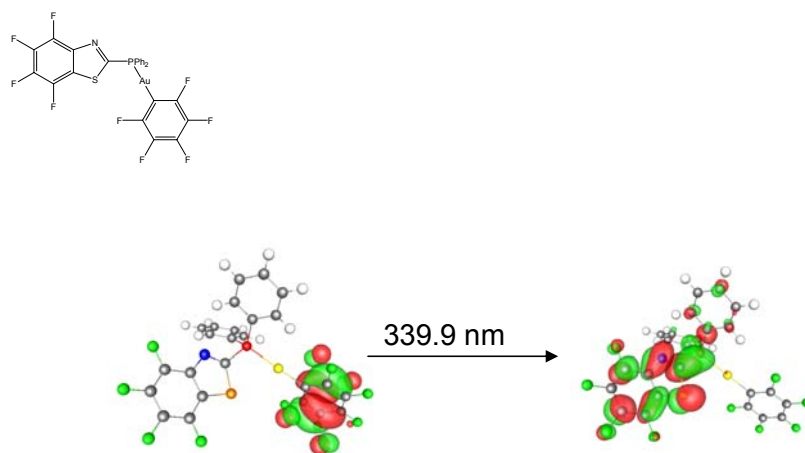
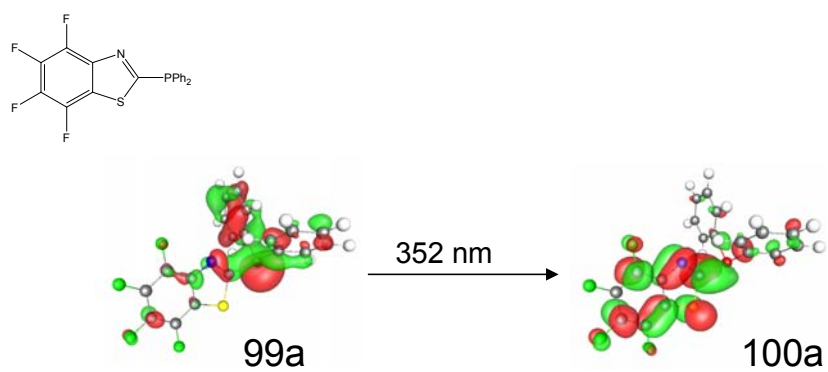


Figure S5. Absorption spectrum (black) of **1** in $5 \cdot 10^{-5}$ M CH_2Cl_2 solution, first few theoretical singlet excitations of model **1a** (blue) and experimental excitation spectrum of **1** (red) in solid state at room temperature.

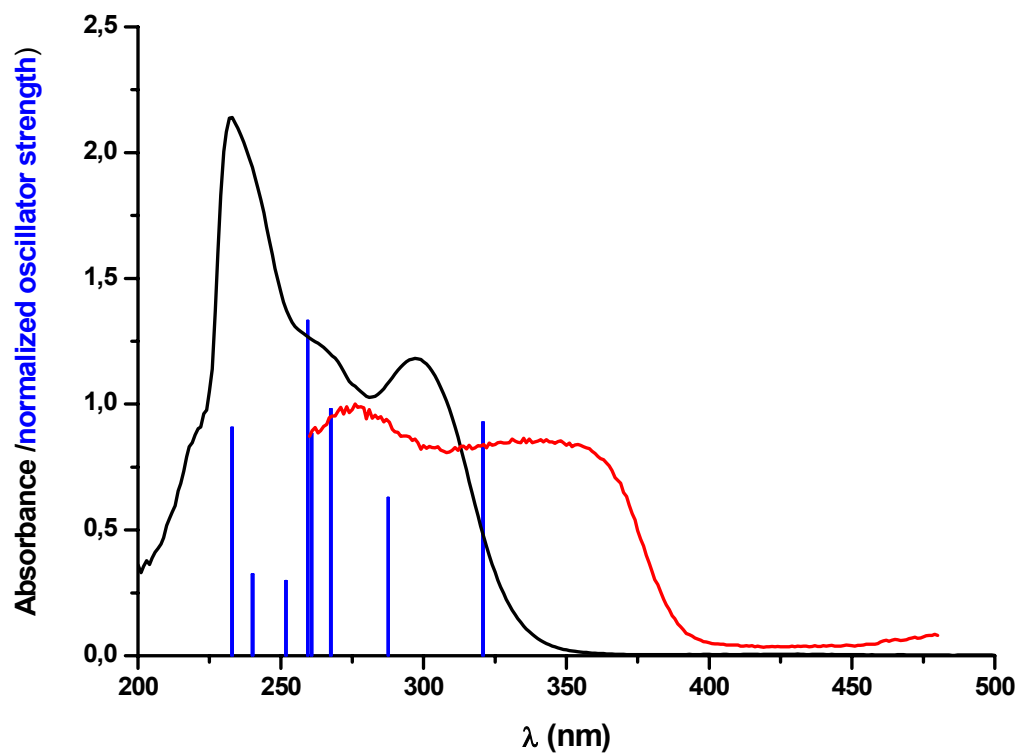


Table S1. Population analysis (contribution from the atoms to the occupied orbitals) for model **1a**. Atoms with labels 1-13 belongs to the C₆F₄(CNS) part of the molecule. Atom 14 is P and 15-33 are phenyl rings.

Contributions from MO no. 94 -0.2697

brutto population

| | | | | | | | | | | |
|------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 c | 0.002 | 0.015 | 0.006 | 0.001 | | | | | | |
| 2 c | 0.000 | 0.000 | 0.009 | 0.002 | | | | | | |
| 4 c | 0.000 | 0.000 | 0.003 | 0.000 | | | | | | |
| 5 c | 0.000 | 0.000 | 0.009 | 0.001 | | | | | | |
| 6 c | 0.000 | 0.000 | 0.002 | 0.000 | | | | | | |
| 7 c | 0.000 | 0.000 | 0.002 | 0.001 | | | | | | |
| 9 f | 0.000 | 0.000 | 0.001 | 0.000 | | | | | | |
| 10 f | 0.000 | 0.000 | 0.003 | 0.000 | | | | | | |
| 13 s | 0.000 | 0.005 | 0.002 | 0.002 | | | | | | |
| 14 p | -0.001 | 0.012 | 0.000 | 0.026 | 0.010 | 0.007 | 0.000 | 0.002 | 0.000 | 0.001 |
| 15 c | 0.000 | 0.276 | 0.000 | 0.047 | | | | | | |
| 16 c | 0.000 | 0.063 | 0.002 | 0.022 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 |
| 17 c | 0.000 | 0.021 | 0.001 | 0.004 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 |
| 18 c | 0.000 | 0.053 | 0.002 | 0.013 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 |
| 20 c | 0.000 | 0.110 | 0.005 | 0.027 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 |
| 22 c | 0.000 | 0.264 | 0.007 | 0.057 | | | | | | |
| 26 c | 0.001 | 0.084 | 0.052 | 0.054 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 27 c | 0.000 | 0.092 | 0.108 | 0.038 | | | | | | |
| 28 c | 0.000 | 0.006 | 0.003 | 0.005 | 0.000 | 0.001 | 0.000 | 0.000 | 0.001 | 0.000 |
| 29 c | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 | 0.000 | 0.001 | 0.000 |
| 31 c | 0.000 | 0.092 | 0.124 | 0.032 | | | | | | |
| 33 c | 0.000 | 0.075 | 0.075 | 0.030 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Contributions from MO no. 95 -0.2659

brutto population

| | | | | | | | | | | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 c | 0.000 | 0.000 | 0.100 | 0.021 | | | | | | |
| 2 c | 0.000 | 0.000 | 0.086 | 0.010 | | | | | | |
| 3 c | 0.000 | 0.000 | 0.008 | 0.001 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 |
| 4 c | 0.000 | 0.001 | 0.135 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| 5 c | 0.000 | 0.000 | 0.082 | 0.011 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.001 |
| 6 c | 0.000 | 0.000 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7 c | 0.000 | 0.002 | 0.128 | 0.013 | | | | | | |
| 8 f | 0.000 | 0.000 | 0.003 | 0.000 | | | | | | |
| 9 f | 0.000 | 0.000 | 0.048 | 0.006 | | | | | | |
| 10 f | 0.000 | 0.000 | 0.028 | 0.004 | | | | | | |
| 11 f | 0.000 | 0.000 | 0.001 | 0.000 | | | | | | |
| 12 n | 0.002 | 0.002 | 0.000 | 0.000 | | | | | | |
| 13 s | 0.000 | 0.003 | 0.046 | 0.010 | 0.000 | 0.000 | 0.000 | 0.003 | 0.001 | 0.000 |
| 14 p | 0.009 | 0.004 | 0.002 | 0.089 | 0.002 | 0.000 | 0.000 | 0.001 | 0.000 | 0.001 |
| 15 c | 0.000 | 0.127 | 0.001 | 0.008 | | | | | | |
| 16 c | 0.000 | 0.014 | 0.000 | 0.016 | | | | | | |

| | | | | | | | | | | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 17 c | 0.000 | 0.012 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 18 c | 0.000 | 0.018 | 0.002 | 0.008 | | | | | | |
| 20 c | 0.000 | 0.032 | 0.001 | 0.008 | | | | | | |
| 21 h | 0.002 | | | | | | | | | |
| 22 c | 0.000 | 0.095 | 0.003 | 0.018 | | | | | | |
| 23 h | 0.001 | | | | | | | | | |
| 26 c | 0.000 | 0.001 | 0.000 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 |
| 27 c | 0.000 | 0.070 | 0.089 | 0.029 | | | | | | |
| 28 c | 0.000 | 0.071 | 0.084 | 0.018 | | | | | | |
| 29 c | 0.000 | 0.073 | 0.064 | 0.028 | | | | | | |
| 31 c | 0.000 | 0.080 | 0.074 | 0.036 | | | | | | |
| 33 c | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |

Contributions from MO no. 96 -0.2641

brutto population

| | | | | | | | | | | |
|------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 c | 0.002 | 0.004 | 0.106 | 0.011 | | | | | | |
| 2 c | 0.000 | 0.001 | 0.087 | 0.011 | | | | | | |
| 3 c | 0.000 | 0.000 | 0.009 | 0.002 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 |
| 4 c | 0.000 | 0.001 | 0.142 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| 5 c | 0.000 | 0.000 | 0.081 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| 6 c | 0.000 | 0.000 | 0.006 | 0.001 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7 c | 0.000 | 0.000 | 0.133 | 0.018 | | | | | | |
| 8 f | 0.000 | 0.000 | 0.003 | 0.000 | | | | | | |
| 9 f | 0.000 | 0.000 | 0.050 | 0.006 | | | | | | |
| 10 f | 0.000 | 0.000 | 0.027 | 0.003 | | | | | | |
| 11 f | 0.000 | 0.000 | 0.002 | 0.000 | | | | | | |
| 12 n | 0.000 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 13 s | 0.000 | 0.000 | 0.070 | 0.006 | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 | 0.000 |
| 14 p | -0.001 | 0.000 | 0.001 | 0.013 | 0.000 | 0.001 | 0.000 | 0.004 | 0.000 | 0.000 |
| 15 c | 0.000 | 0.004 | 0.002 | 0.003 | | | | | | |
| 16 c | 0.001 | 0.016 | 0.006 | 0.001 | | | | | | |
| 17 c | 0.000 | 0.036 | 0.000 | 0.011 | | | | | | |
| 18 c | 0.000 | 0.041 | 0.000 | 0.006 | | | | | | |
| 19 h | 0.002 | | | | | | | | | |
| 20 c | 0.000 | 0.011 | 0.001 | 0.002 | | | | | | |
| 22 c | 0.000 | 0.007 | 0.001 | 0.001 | | | | | | |
| 26 c | 0.001 | 0.034 | 0.004 | 0.015 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| 27 c | 0.000 | 0.060 | 0.042 | 0.021 | 0.000 | 0.001 | 0.000 | 0.000 | 0.001 | 0.000 |
| 28 c | 0.000 | 0.128 | 0.140 | 0.048 | | | | | | |
| 29 c | 0.000 | 0.122 | 0.154 | 0.043 | | | | | | |
| 31 c | 0.000 | 0.056 | 0.054 | 0.022 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 |
| 33 c | 0.000 | 0.018 | 0.018 | 0.007 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 | 0.001 |

Contributions from MO no. 97 -0.2587

brutto population

| | | | | | | | | | | |
|-----|-------|-------|-------|-------|--|--|--|--|--|--|
| 1 c | 0.000 | 0.000 | 0.006 | 0.001 | | | | | | |
| 2 c | 0.000 | 0.000 | 0.004 | 0.001 | | | | | | |
| 3 c | 0.000 | 0.000 | 0.004 | 0.001 | | | | | | |
| 4 c | 0.000 | 0.000 | 0.017 | 0.002 | | | | | | |

| | | | | | | | | | | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 c | 0.000 | 0.000 | 0.003 | 0.000 | | | | | | |
| 6 c | 0.000 | 0.000 | 0.005 | 0.001 | | | | | | |
| 7 c | 0.000 | 0.000 | 0.015 | 0.001 | | | | | | |
| 8 f | 0.000 | 0.000 | 0.001 | 0.000 | | | | | | |
| 9 f | 0.000 | 0.000 | 0.006 | 0.001 | | | | | | |
| 10 f | 0.000 | 0.000 | 0.001 | 0.000 | | | | | | |
| 11 f | 0.000 | 0.000 | 0.002 | 0.000 | | | | | | |
| 12 n | 0.000 | 0.000 | 0.000 | 0.001 | | | | | | |
| 13 s | 0.000 | 0.000 | 0.014 | 0.003 | | | | | | |
| 15 c | 0.000 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 | 0.002 | 0.000 |
| 16 c | 0.000 | 0.368 | 0.006 | 0.075 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 17 c | 0.000 | 0.373 | 0.008 | 0.083 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 18 c | 0.000 | 0.383 | 0.010 | 0.077 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 20 c | 0.000 | 0.355 | 0.008 | 0.076 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 22 c | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 | 0.002 | 0.000 |
| 27 c | 0.000 | 0.007 | 0.008 | 0.003 | | | | | | |
| 28 c | 0.000 | 0.003 | 0.005 | 0.002 | | | | | | |
| 29 c | 0.000 | 0.005 | 0.006 | 0.002 | | | | | | |
| 31 c | 0.000 | 0.009 | 0.008 | 0.003 | | | | | | |

Contributions from MO no. 98 -0.2478

brutto population

| | | | | | | | | | | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 c | 0.000 | 0.001 | 0.076 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.002 |
| 2 c | 0.000 | 0.000 | 0.075 | 0.009 | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 | 0.001 |
| 3 c | 0.000 | 0.002 | 0.330 | 0.044 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 |
| 4 c | 0.000 | 0.000 | 0.062 | 0.007 | 0.000 | 0.000 | 0.000 | 0.004 | 0.001 | 0.000 |
| 5 c | 0.000 | 0.001 | 0.173 | 0.022 | 0.000 | 0.000 | 0.001 | 0.002 | 0.000 | 0.002 |
| 6 c | 0.000 | 0.002 | 0.320 | 0.038 | 0.000 | 0.001 | 0.001 | 0.000 | 0.000 | 0.002 |
| 7 c | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.004 | 0.001 | 0.000 |
| 8 f | 0.000 | 0.000 | 0.102 | 0.013 | | | | | | |
| 9 f | 0.000 | 0.000 | 0.018 | 0.002 | | | | | | |
| 10 f | 0.000 | 0.000 | 0.050 | 0.006 | | | | | | |
| 11 f | 0.000 | 0.001 | 0.088 | 0.011 | | | | | | |
| 12 n | 0.000 | 0.000 | 0.133 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| 13 s | 0.000 | 0.001 | 0.257 | 0.028 | | | | | | |
| 14 p | 0.002 | 0.000 | 0.001 | 0.021 | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 | 0.000 |
| 15 c | 0.001 | 0.004 | 0.003 | 0.000 | | | | | | |
| 16 c | 0.000 | 0.001 | 0.000 | 0.000 | | | | | | |
| 17 c | 0.000 | 0.004 | 0.000 | 0.001 | | | | | | |
| 18 c | 0.000 | 0.003 | 0.001 | 0.002 | | | | | | |
| 20 c | 0.000 | 0.001 | 0.000 | 0.000 | | | | | | |
| 22 c | 0.000 | 0.001 | 0.000 | 0.000 | | | | | | |
| 27 c | 0.000 | 0.002 | 0.000 | 0.000 | | | | | | |
| 28 c | 0.000 | 0.002 | 0.000 | 0.000 | | | | | | |
| 29 c | 0.000 | 0.000 | 0.002 | 0.000 | | | | | | |
| 31 c | 0.000 | 0.001 | 0.002 | 0.000 | | | | | | |

Contributions from MO no. 99 -0.2038

Table S1. Population analysis (contribution from the atoms to the occupied orbitals) for model **3a**. Atoms with labels 9,10,13,14,18-21,24,26,27,29,30 belongs the C₆F₄(CNS) part of the molecule. Atom 25 is P, 33 is Au and 38-48 are C₆F₅.

Contributions from MO no. 142 -0.2839

brutto population

| | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 3 c | 0.000 | 0.001 | 0.064 | 0.037 | 0.000 | 0.000 | 0.000 | 0.002 | 0.001 | 0.000 |
| 4 c | 0.000 | 0.001 | 0.038 | 0.024 | 0.000 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 |
| 6 c | 0.000 | 0.003 | 0.236 | 0.098 | | | | | | |
| 7 c | 0.000 | 0.003 | 0.217 | 0.116 | | | | | | |
| 10 f | 0.000 | 0.000 | 0.000 | 0.036 | | | | | | |
| 11 c | 0.000 | 0.001 | 0.047 | 0.038 | 0.000 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 |
| 12 c | 0.000 | 0.001 | 0.046 | 0.054 | 0.000 | 0.000 | 0.000 | 0.002 | 0.001 | 0.000 |
| 13 c | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.001 |
| 14 c | 0.000 | 0.000 | 0.000 | 0.093 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 |
| 15 h | 0.002 | | | | | | | | | |
| 18 n | 0.001 | 0.000 | 0.001 | 0.000 | | | | | | |
| 19 c | 0.000 | 0.001 | 0.000 | 0.108 | | | | | | |
| 20 f | 0.000 | 0.000 | 0.000 | 0.046 | | | | | | |
| 21 c | 0.000 | 0.000 | 0.000 | 0.121 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| 22 c | 0.000 | 0.012 | 0.004 | 0.003 | | | | | | |
| 23 c | 0.000 | 0.013 | 0.053 | 0.009 | | | | | | |
| 24 c | 0.001 | 0.000 | 0.001 | 0.086 | | | | | | |
| 25 p | 0.007 | 0.012 | 0.004 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| 26 c | 0.000 | 0.000 | 0.000 | 0.076 | | | | | | |
| 27 c | 0.000 | 0.000 | 0.000 | 0.008 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 |
| 28 c | 0.003 | 0.014 | 0.002 | 0.041 | | | | | | |
| 29 s | 0.000 | 0.000 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.002 |
| 30 f | 0.000 | 0.000 | 0.000 | 0.002 | | | | | | |
| 31 c | 0.000 | 0.007 | 0.017 | 0.005 | | | | | | |
| 33 au | 0.014 | 0.001 | 0.000 | 0.000 | 0.001 | 0.006 | 0.002 | 0.003 | 0.002 | 0.006 |
| 34 c | 0.000 | 0.021 | 0.048 | 0.007 | | | | | | |
| 35 c | 0.000 | 0.002 | 0.003 | 0.005 | | | | | | |
| 38 c | 0.000 | 0.004 | 0.002 | 0.000 | | | | | | |

Contributions from MO no. 143 -0.2808

brutto population

| | | | | | | | | | | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 3 c | 0.000 | 0.001 | 0.037 | 0.020 | 0.000 | 0.000 | 0.000 | 0.002 | 0.001 | 0.000 |
| 4 c | 0.000 | 0.004 | 0.287 | 0.152 | | | | | | |
| 6 c | 0.000 | 0.001 | 0.104 | 0.071 | 0.000 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 |
| 7 c | 0.000 | 0.004 | 0.115 | 0.064 | 0.000 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 |
| 10 f | 0.000 | 0.000 | 0.000 | 0.026 | | | | | | |
| 11 c | 0.000 | 0.003 | 0.298 | 0.140 | | | | | | |
| 12 c | 0.000 | 0.001 | 0.025 | 0.034 | 0.000 | 0.000 | 0.000 | 0.002 | 0.002 | 0.000 |
| 13 c | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 |
| 14 c | 0.000 | 0.000 | 0.000 | 0.070 | | | | | | |
| 15 h | 0.001 | | | | | | | | | |
| 18 n | 0.000 | 0.000 | 0.000 | 0.001 | | | | | | |

| | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 19 c | 0.000 | 0.000 | 0.000 | 0.071 | | | | | | |
| 20 f | 0.000 | 0.000 | 0.000 | 0.029 | | | | | | |
| 21 c | 0.000 | 0.000 | 0.000 | 0.078 | | | | | | |
| 22 c | 0.000 | 0.001 | 0.006 | 0.000 | | | | | | |
| 23 c | 0.000 | 0.002 | 0.011 | 0.000 | | | | | | |
| 24 c | 0.000 | 0.000 | 0.000 | 0.062 | | | | | | |
| 25 p | 0.004 | 0.021 | 0.004 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.006 |
| 26 c | 0.000 | 0.000 | 0.000 | 0.063 | | | | | | |
| 27 c | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 |
| 28 c | 0.002 | 0.010 | 0.000 | 0.037 | | | | | | |
| 29 s | 0.000 | 0.000 | 0.000 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.001 |
| 31 c | 0.000 | 0.005 | 0.016 | 0.007 | | | | | | |
| 33 au | 0.001 | 0.002 | 0.000 | 0.004 | 0.001 | 0.000 | 0.003 | 0.000 | 0.004 | 0.000 |
| 34 c | 0.000 | 0.003 | 0.008 | 0.001 | | | | | | |
| 35 c | 0.000 | 0.000 | 0.005 | 0.000 | | | | | | |
| 38 c | 0.002 | 0.014 | 0.005 | 0.000 | | | | | | |

Contributions from MO no. 144 -0.2794

brutto population

| | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 3 c | 0.000 | 0.000 | 0.003 | 0.001 | | | | | | |
| 4 c | 0.000 | 0.000 | 0.003 | 0.001 | | | | | | |
| 6 c | 0.000 | 0.000 | 0.012 | 0.005 | | | | | | |
| 7 c | 0.000 | 0.001 | 0.010 | 0.007 | | | | | | |
| 10 f | 0.000 | 0.000 | 0.000 | 0.008 | | | | | | |
| 11 c | 0.000 | 0.000 | 0.003 | 0.001 | | | | | | |
| 12 c | 0.000 | 0.000 | 0.003 | 0.002 | | | | | | |
| 14 c | 0.000 | 0.000 | 0.000 | 0.022 | | | | | | |
| 18 n | 0.003 | 0.001 | 0.008 | 0.001 | | | | | | |
| 19 c | 0.000 | 0.000 | 0.001 | 0.036 | | | | | | |
| 20 f | 0.000 | 0.000 | 0.000 | 0.013 | | | | | | |
| 21 c | 0.000 | 0.000 | 0.000 | 0.036 | | | | | | |
| 22 c | 0.000 | 0.079 | 0.229 | 0.070 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 |
| 23 c | 0.000 | 0.104 | 0.283 | 0.094 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 |
| 24 c | 0.001 | 0.001 | 0.001 | 0.022 | | | | | | |
| 25 p | 0.000 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 26 c | 0.000 | 0.000 | 0.000 | 0.020 | | | | | | |
| 27 c | 0.000 | 0.000 | 0.000 | 0.003 | | | | | | |
| 28 c | 0.000 | 0.001 | 0.008 | 0.000 | 0.002 | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 |
| 29 s | 0.000 | 0.001 | 0.002 | 0.004 | | | | | | |
| 30 f | 0.000 | 0.000 | 0.000 | 0.001 | | | | | | |
| 31 c | 0.000 | 0.001 | 0.004 | 0.001 | 0.002 | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 |
| 33 au | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.002 | 0.000 | 0.000 | 0.000 |
| 34 c | 0.000 | 0.102 | 0.288 | 0.102 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 35 c | 0.000 | 0.077 | 0.226 | 0.063 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 |

Contributions from MO no. 145 -0.2728

brutto population

| | | | | | | | | | | |
|-----|-------|-------|-------|-------|--|--|--|--|--|--|
| 3 c | 0.000 | 0.002 | 0.110 | 0.064 | | | | | | |
|-----|-------|-------|-------|-------|--|--|--|--|--|--|

| | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 4 c | 0.000 | 0.000 | 0.019 | 0.011 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 |
| 6 c | 0.000 | 0.000 | 0.032 | 0.016 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7 c | 0.000 | 0.000 | 0.035 | 0.027 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 9 f | 0.000 | 0.000 | 0.000 | 0.001 | | | | | | |
| 10 f | 0.000 | 0.000 | 0.000 | 0.049 | | | | | | |
| 11 c | 0.000 | 0.000 | 0.026 | 0.015 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 |
| 12 c | 0.001 | 0.003 | 0.138 | 0.040 | | | | | | |
| 13 c | 0.000 | 0.000 | 0.000 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.001 |
| 14 c | 0.000 | 0.000 | 0.000 | 0.140 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 |
| 18 n | 0.000 | 0.000 | 0.000 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 |
| 19 c | 0.000 | 0.000 | 0.000 | 0.102 | | | | | | |
| 20 f | 0.000 | 0.000 | 0.000 | 0.033 | | | | | | |
| 21 c | 0.000 | 0.000 | 0.000 | 0.096 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| 22 c | 0.000 | 0.015 | 0.082 | 0.021 | | | | | | |
| 23 c | 0.000 | 0.000 | 0.003 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.001 |
| 24 c | 0.001 | 0.003 | 0.002 | 0.096 | | | | | | |
| 25 p | 0.013 | 0.024 | 0.006 | 0.000 | 0.001 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 26 c | 0.000 | 0.001 | 0.000 | 0.139 | | | | | | |
| 27 c | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.001 |
| 28 c | 0.001 | 0.046 | 0.075 | 0.057 | | | | | | |
| 29 s | 0.000 | 0.000 | 0.000 | 0.067 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.003 |
| 31 c | 0.000 | 0.037 | 0.102 | 0.030 | | | | | | |
| 33 au | 0.004 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.001 | 0.000 | 0.001 |
| 34 c | 0.000 | 0.002 | 0.005 | 0.001 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.001 |
| 35 c | 0.000 | 0.022 | 0.070 | 0.020 | | | | | | |
| 38 c | 0.003 | 0.023 | 0.007 | 0.000 | | | | | | |
| 41 c | 0.000 | 0.001 | 0.000 | 0.000 | | | | | | |
| 42 c | 0.000 | 0.001 | 0.000 | 0.000 | | | | | | |

Contributions from MO no. 146 -0.2680

brutto population

| | | | | | | | | | | |
|-------|--------|--------|-------|-------|--------|-------|-------|-------|-------|-------|
| 4 c | 0.000 | 0.000 | 0.003 | 0.001 | | | | | | |
| 6 c | 0.000 | 0.000 | 0.000 | 0.002 | | | | | | |
| 7 c | 0.000 | 0.000 | 0.000 | 0.001 | | | | | | |
| 11 c | 0.000 | 0.003 | 0.003 | 0.001 | | | | | | |
| 12 c | 0.000 | 0.000 | 0.000 | 0.001 | | | | | | |
| 13 c | 0.000 | 0.000 | 0.000 | 0.001 | | | | | | |
| 16 h | 0.002 | | | | | | | | | |
| 19 c | 0.000 | 0.000 | 0.000 | 0.001 | | | | | | |
| 21 c | 0.000 | 0.000 | 0.000 | 0.001 | | | | | | |
| 22 c | 0.000 | 0.001 | 0.000 | 0.000 | | | | | | |
| 24 c | -0.001 | 0.000 | 0.000 | 0.001 | | | | | | |
| 25 p | -0.002 | -0.005 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 26 c | 0.000 | 0.004 | 0.000 | 0.000 | | | | | | |
| 28 c | 0.000 | 0.000 | 0.002 | 0.000 | | | | | | |
| 29 s | 0.001 | 0.001 | 0.002 | 0.000 | | | | | | |
| 31 c | 0.000 | 0.000 | 0.002 | 0.000 | | | | | | |
| 33 au | 0.775 | 0.005 | 0.002 | 0.000 | -0.033 | 0.068 | 0.289 | 0.234 | 0.000 | 0.001 |
| 34 c | 0.000 | 0.005 | 0.001 | 0.001 | | | | | | |

35 c 0.000 0.000 0.000 0.001
 36 h 0.003
 38 c 0.111 0.310 0.071 0.000
 39 c -0.001 0.003 0.000 0.017 0.001 0.000 0.002 0.000 0.001 0.001
 40 c -0.001 0.002 0.003 0.016 0.000 0.000 0.002 0.001 0.001 0.000
 41 c 0.006 0.005 0.002 0.002
 42 c 0.006 0.006 0.001 0.003
 44 f 0.000 0.000 0.001 0.009
 45 f 0.000 0.008 0.002 0.000
 47 f 0.000 0.008 0.001 0.000
 48 f 0.000 0.001 0.000 0.009

Contributions from MO no. 147 -0.2622

brutto population

3 c 0.000 0.000 0.001 0.001
 6 c 0.000 0.000 0.001 0.001
 7 c 0.000 0.000 0.003 0.001
 9 f 0.000 0.000 0.000 0.120
 10 f 0.000 0.000 0.000 0.039
 12 c 0.000 0.000 0.002 0.001
 13 c 0.000 0.001 0.000 0.386 0.000 0.000 0.000 0.000 0.000 0.003
 14 c 0.000 0.000 0.000 0.126 0.000 0.000 0.000 0.000 0.001 0.005
 18 n 0.000 0.000 0.000 0.137
 19 c 0.000 0.000 0.000 0.044 0.000 0.000 0.000 0.000 0.005 0.000
 20 f 0.000 0.000 0.000 0.039
 21 c 0.000 0.001 0.000 0.127 0.000 0.000 0.000 0.000 0.005 0.000
 22 c 0.000 0.002 0.005 0.001
 24 c 0.000 0.000 0.000 0.024 0.000 0.000 0.000 0.000 0.002 0.001
 26 c 0.000 0.000 0.000 0.030 0.000 0.000 0.000 0.000 0.002 0.003
 27 c 0.000 0.001 0.000 0.385 0.000 0.000 0.000 0.000 0.002 0.001
 28 c 0.000 0.002 0.004 0.002
 29 s 0.000 0.001 0.000 0.338
 30 f 0.000 0.000 0.000 0.114
 31 c 0.000 0.001 0.005 0.001
 33 au 0.001 0.000 0.000 0.002 0.000 0.000 0.000 0.000 0.002 0.001
 35 c 0.000 0.001 0.004 0.002
 38 c 0.000 0.001 0.001 0.000

Contributions from MO no. 148 -0.2373

brutto population

24 c 0.001 0.000 0.001 0.000
 25 p 0.000 0.001 0.003 0.000 0.001 0.000 0.000 0.002 0.000 0.000
 29 s 0.000 0.000 0.001 0.000
 33 au 0.000 0.004 0.016 0.001 0.030 0.028 0.000 0.035 0.006 0.002
 38 c 0.000 0.105 0.431 0.042 0.001 0.001 0.000 0.001 0.000 0.000
 39 c 0.000 0.024 0.098 0.010 0.001 0.000 0.001 0.001 0.000 0.003
 40 c 0.000 0.020 0.084 0.008 0.000 0.002 0.000 0.000 0.001 0.002
 41 c 0.000 0.018 0.076 0.008 0.000 0.002 0.000 0.000 0.001 0.001

42 c 0.000 0.021 0.088 0.009 0.001 0.000 0.001 0.001 0.000 0.003
43 c 0.000 0.084 0.354 0.035 0.001 0.001 0.000 0.001 0.000 0.000
44 f 0.000 0.007 0.031 0.003
45 f 0.000 0.007 0.031 0.003
46 f 0.000 0.027 0.114 0.011
47 f 0.000 0.006 0.026 0.003
48 f 0.000 0.008 0.035 0.004